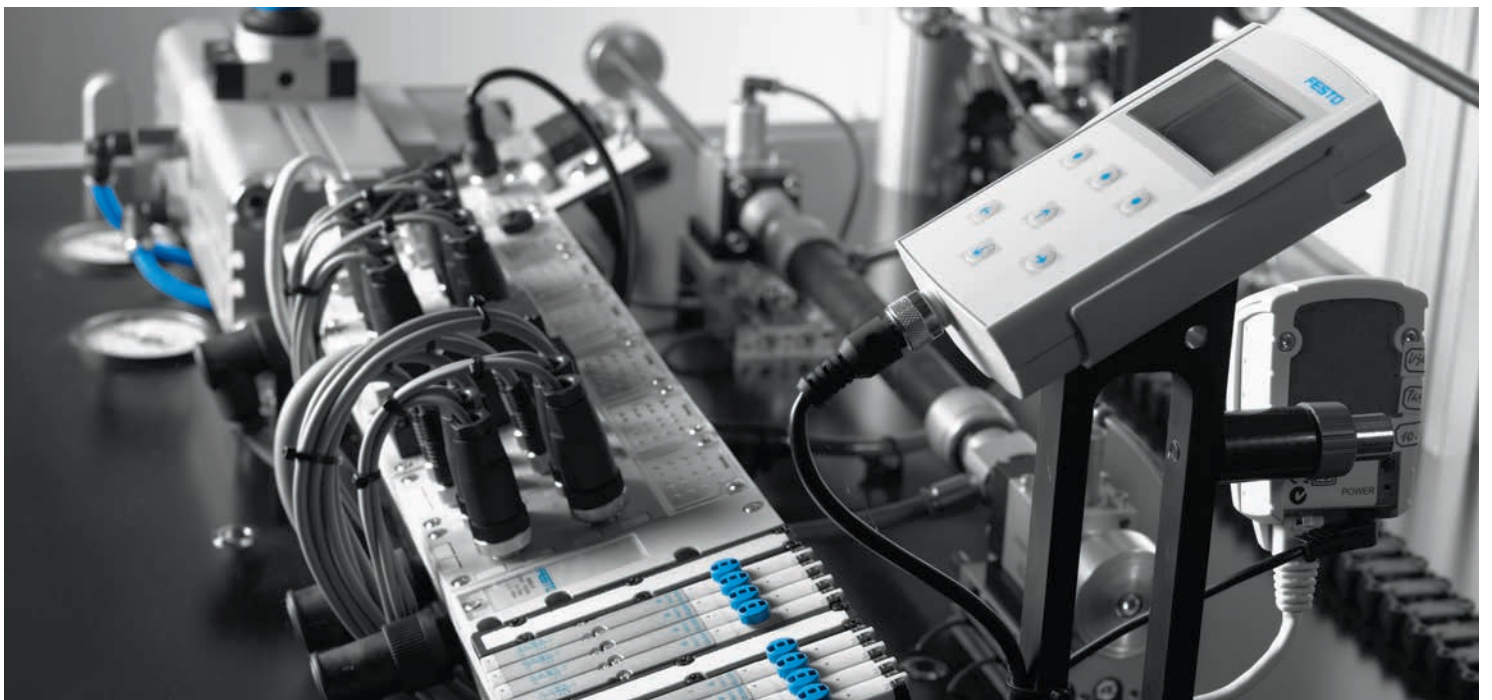


**FESTO**

## Electrical connector technology



Electrical connection technology

2014/12 issue

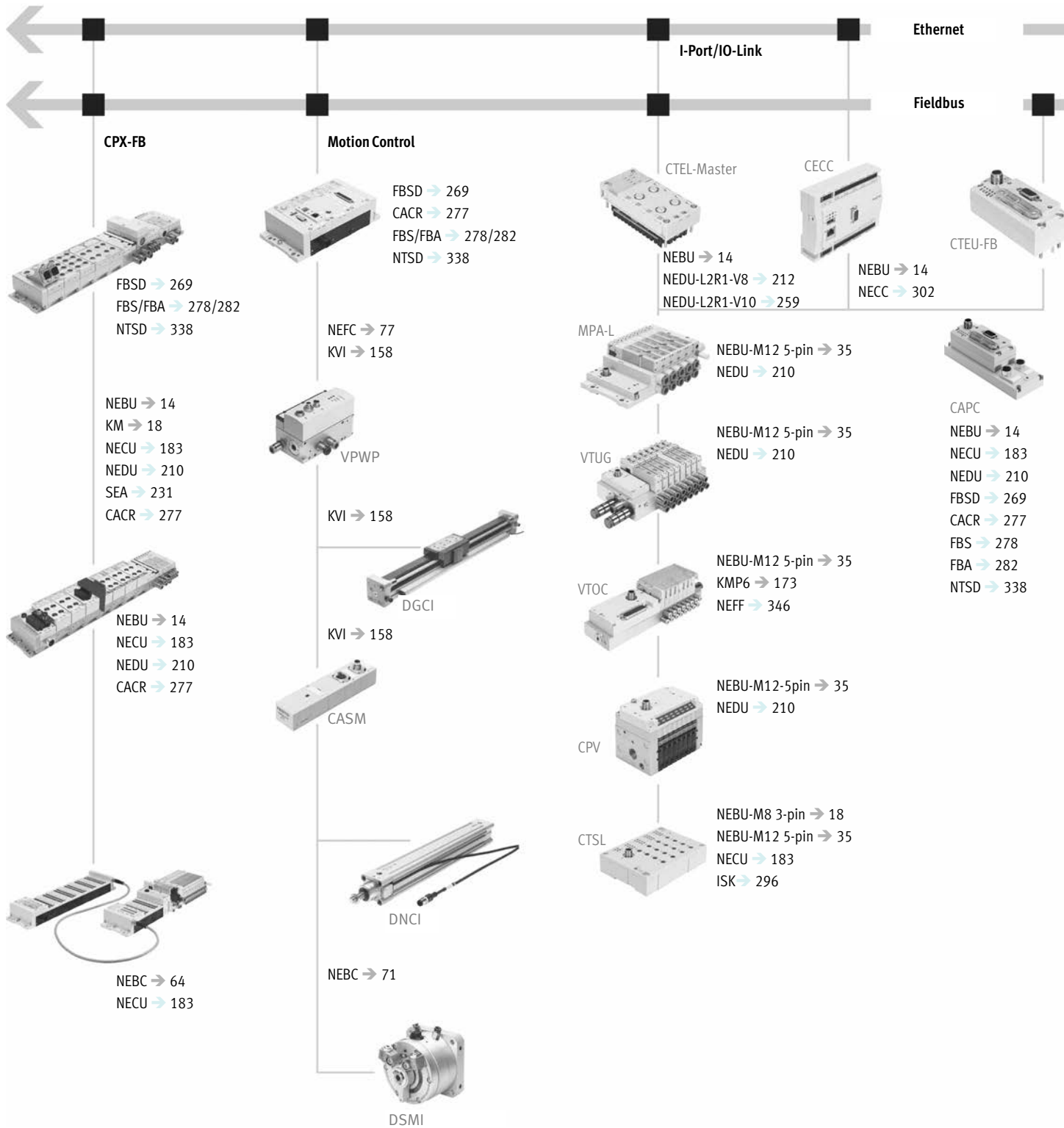
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All technical data subject to change according to technical update.

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- Connecting cables
- Plug connectors for valve terminals and remote I/O modules

## CPI installation system



KVI-CP-3-WS-WD → 54  
KVI-CP-3-GS-GD → 54



CPV



CP-E32

NEBU → 14  
KM → 18  
SEA → 231



CPV



CP-E16

KM → 18  
NEDU → 210  
SEA → 231



CPV-SC



CP-E16

NEBU → 14  
KM → 18



CTEU-CP



VTUG



VTOC

MPA-L

NEBU → 14  
KVI → 158  
NECU → 183

## AS-interface



CESA-GW-AS-CO



CPV

KASI → 67



ASI-EVA



ASI-EVA

KASI → 67



VTSA

KASI → 67



MPA

KASI → 67



ASI-4DI



CTEU-ASI



VTUG



VTOC

MPA-L

NEBU → 14  
KASI → 67  
SEA → 231  
ASI-SD-FK → 292

KM12 → 32  
ASI-SD-FK → 292

NEBU → 14  
KM12 → 32

SEA → 231  
FBS-D-GD → 269  
ASI-SD-FK → 292  
ASI-SD-PG → 292

ASI-SD-PG → 292  
FBS-GD → 269

NEBU → 14  
KM8 → 18  
KV-M12 → 89  
NEBV → 136  
ASI-SD-FK → 292  
ASI-SD-PG → 292

NEBU → 14  
NECU → 183

## Multi-pin plug

VTSA



NEBV → 136  
NECV → 345

VTUB



NEBV-G → 136  
KMP6 → 173

VTUB-12



NEBV-G → 136  
NEBV-S1 → 145

CPV



KMP → 169  
SD-SUB → 340

MPA



VMPA-KMS1 → 163  
VMPA-KMS2 → 163

MPA-L



NEBV-S1 → 145  
VMPAL → 165  
KMP6 → 173  
NECU → 183

MPA-C



NEBV-S1 → 145  
KMP6 → 173

VTUG



NEBC-C → 144

VTOC

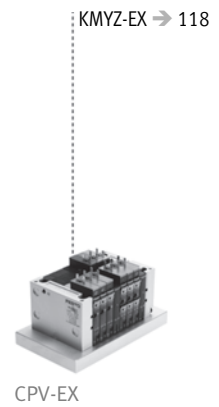
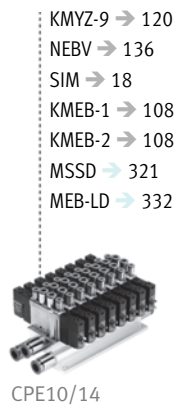
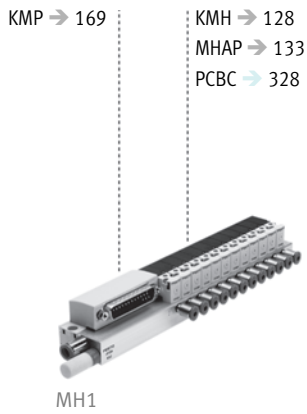


KMP6 → 173  
NEBV → 136

→ Connecting cables

→ Plug connectors for valve terminals and remote I/O modules

## Individual valves



→ Connecting cables

→ Plug connectors for valve terminals and remote I/O modules

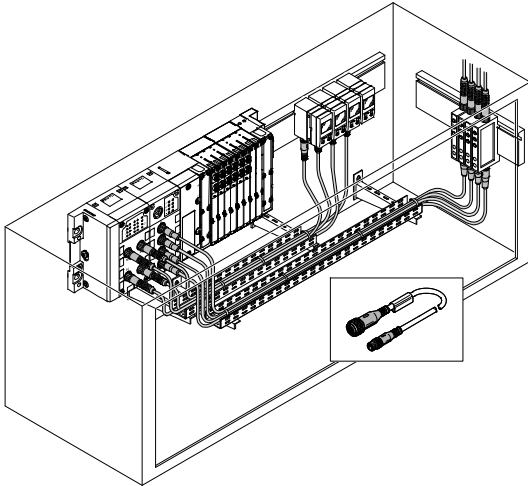


## Cable properties

The connecting cables NEBU can be configured using the modular system. You can choose from properties that

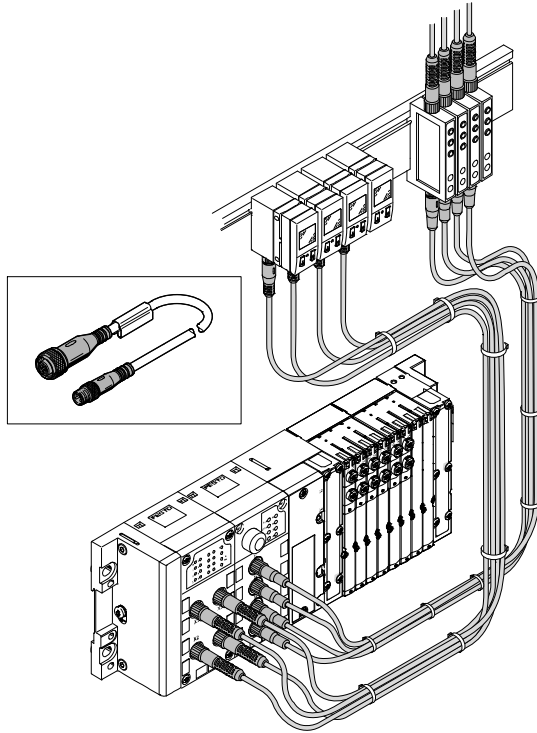
are suited to basic, standard, energy chain or robot applications.

### Basic application



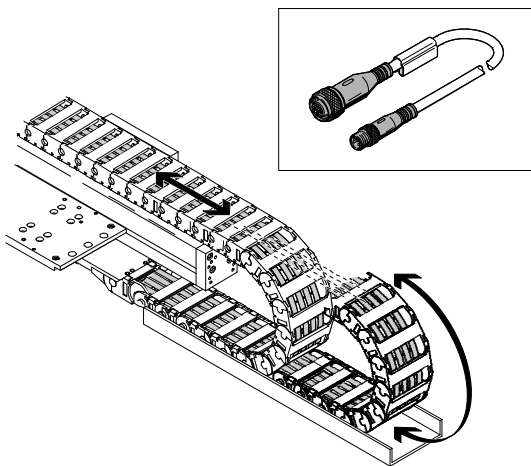
Basic applications are characterised by fixed cable installation with no mechanical loads.

### Standard application



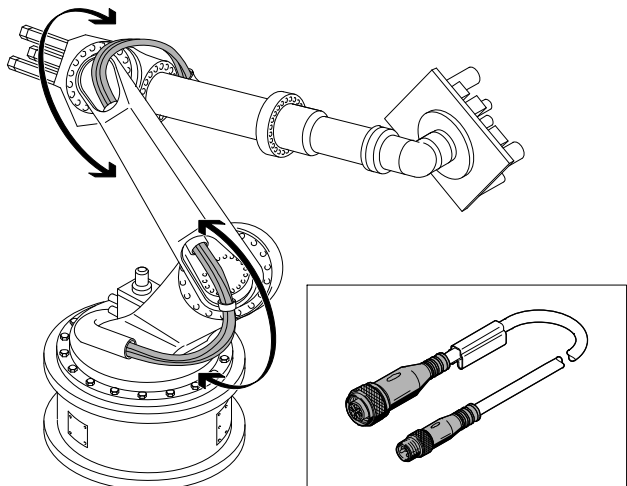
Standard applications are characterised by fixed cable installation or small to medium mechanical loads.

### Energy chain application



Energy chain applications involve high mechanical loads, particularly if very small radii are required.

### Robot application



Robot applications involve high mechanical loads that are primarily caused by torsion.



## Connection technology types

Different types of plug connectors (e.g. angled or straight) can be chosen for the connecting cables.

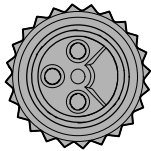
A special type of connector is the rotatable type: this enables the cable outlet of an angled socket to be rotated by 360° in 15° increments.

Advantage:

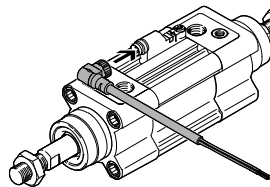
This enables optimum positioning of the cable outlet in tight installation spaces.

The connectors are not designed for repeatedly changing the outlet direction.

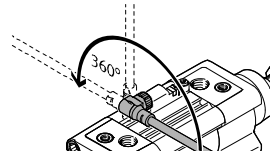
## Mounting



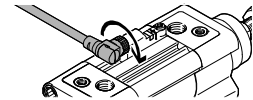
Note the orientation of the pins.



Place the socket on the plug.



Adjust the cable outlet.



Tighten the union nut.

















| Function                    | Version  | Type  | Connection technology (right-hand end) | Cable characteristics   | Length                 | → Page/ Internet |
|-----------------------------|--|---|--|---|------------------------|------------------|
| Electrical connecting cable | <b>Electrical connection (left-hand end), open cable end</b> |   |  |   |                        |                  |
|                             | 5-pin  | NEBU-LE   | Socket, plug                           | Standard  | 0.1 ... 30 m           | 16               |
|                             | <b>Electrical connection (left-hand end), socket M8</b>      |   |  |   |                        |                  |
|                             | 3-pin  | NEBU-M8<br>SIM-M8<br>KM8-M8                       | Plug, open cable end                   | Basic, standard, suitable for use with energy chains, suitable for robot applications | 0.1 ... 30 m           | 18               |
|                             | 4-pin  | NEBU-M8<br>SIM-M8                                 | Plug, open cable end                   | Basic, standard, suitable for use with energy chains, suitable for robot applications | 0.1 ... 30 m           | 24               |
|                             | <b>Electrical connection (left-hand end), socket M12</b>     |   |  |   |                        |                  |
|                             | 3-pin  | SIM-M12-3<br>SIM-M12-RS-3                         | Plug, open cable end                   | Standard  | 0.6 m, 2.5 m, 3 m, 5 m | 29               |
|                             | 4-pin  | SIM-M12-4<br>KM12-M12                             | Plug, open cable end                   | Standard  | 0.6 m, 1 m, 2.5 m, 5 m | 32               |
|                             | 5-pin  | NEBU-LE5<br>NEBU-M12G5<br>NEBU-M12W5<br>SIM-M12-5 | Plug, open cable end                   | Basic, standard, suitable for use with energy chains, suitable for robot applications | 0.1 ... 30 m           | 35               |
|                             | 8-pin  | NEBU-M12-W8<br>SIM-M12-8<br>KM12-8                | Plug, open cable end                   | Standard  | 2 m, 5 m, 10 m         | 40               |
|                             | <b>Electrical connection (left-hand end), socket 7/8"</b>    |   |  |   |                        |                  |
|                             | 5-pin  | NEBU-G78  | Open cable end                         | Standard  | 2 m                    | 43               |
|                             | <b>Electrical connection (left-hand end), clip</b>           |   |  |   |                        |                  |
|                             | 3-pin  | SIM-K   | Open cable end                         | Standard  | 2.5 m, 5 m, 10 m       | 45               |
|                             | 4-pin  | SIM-K-4   | Open cable end                         | Standard  | 2.5 m, 5 m             | 47               |


















# Universal connecting cables

Selection aid

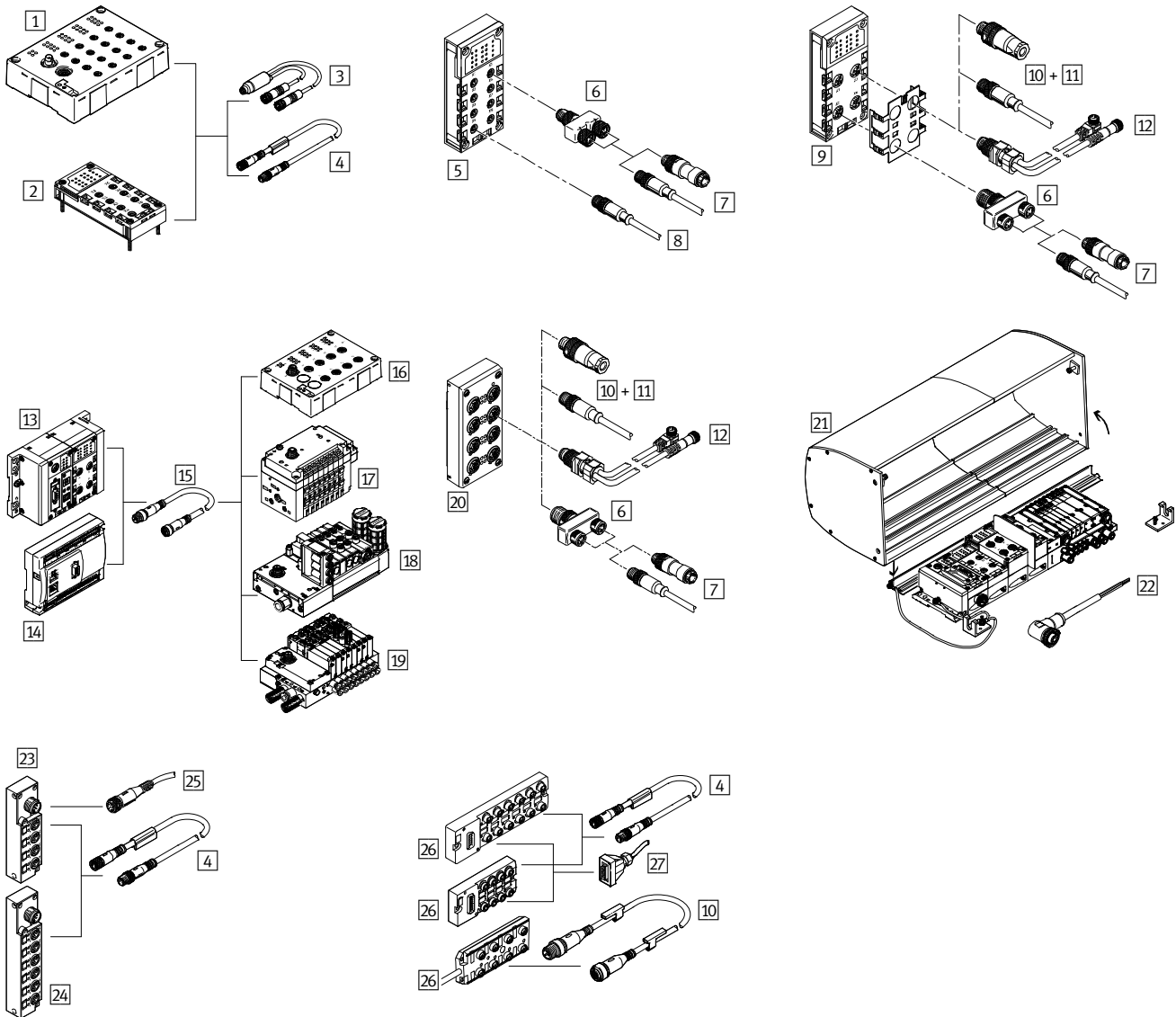
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| Version   | Type  | Connection blocks CPX   |   |   |   |  |   | Connection blocks CPX-P   |   | Page/Internet<br>➔ |
|---|---|---|---|---|---|--|---|---|---|--------------------|
|   |   |  |  |  |  |  |  |  |  |                    |
|   |   | CPX-AB-8-M8-3POL  | CPX-AB-8-M8X2-4POL  | CPX-AB-4-M12x2-5POL   | CPX-M-4-M12x2-5POL  | CPX-M-8-M12x2-5POL   | CPX-Verkettungen 7/8"<br>5-pin  | CPX-P-AB-4XM12-4POL-8DE-N-IS  | CPX-M-GE-EV-Z-7/8-5POL<br>CPX-M-GE-EV-Z-7/8-5POL-VL                                 |                    |
|    | NEBU-LE5-K-1-M12G5  |   |   |   | ■   |  |   |   | 16  |                    |
|    | NEBU-M8G3<br>SIM-M8-3<br>KM8-M8                           | ■   |   |   |   |  |   |   | 18  |                    |
|    | NEBU-M8G4<br>SIM-M8-4                                     |   | ■   |   |   |  |   |   | 24  |                    |
|  | SIM-M12<br>NEBU-M12G5...                                  |   |   | ■   | ■   | ■  |   |   | 29<br>35  |                    |
|  | KM12-M12-GSGD-2,5<br>KM12-M12-GSGD-5<br>KM12-M12-GSWD-1-4 |   |   |   |   | ■  | ■   |   | 32  |                    |
|  | NEBU-G78W5-K-2-N-LE5                                      |   |   |   |   |  | ■   | ■   | 43  |                    |
|  | NEDU-L2R1-M8G3-K-1L1-1L2-M8G4                             |   | ■   |   |   |  |   |   | 50  |                    |
|  | KM12-DUO-M8-GDGD<br>KM12-DUO-M8-GDWD<br>KM12-DUO-M8-WDWD  |   |   |   |   | ■  |   |   | 52  |                    |

| Version   | Type  | IO-Port/IO-Link/CP I/O modules  |   |   |   |  |   |   | AS-interface components   |   | Multi-pin plug distributor | Page/Internet |
|---|---|---|---|---|---|--|---|---|---|---|----------------------------|---------------|
|   |   |  |  |  |  |  |  |  |  |  |                            |               |
|   |   | CAPC-F1-E-M12   | CP-E08-M8-CL<br>3-polig   | CP-E16N-M12-EL, 5-polig<br>CP-E08-M12-CL, 5-polig<br>CP-E16N-M12x2, 5-polig       | CP-E32-M8-EL<br>4-polig   | CP-E16-KL-CL   | ASI-4DI3DO-M12x2-5POL-Z   | ASI-8DI-M8-3POL   | MPV-E/A08-M8<br>MPV-/A0812M8<br>MPV-E/A08-M12                                       | NEDU-L4R1-M8G3L-...<br>NEDU-L6R1-M8G3L-...  | → Page/Internet            |               |
|    | NEBU-M8G3<br>SIM-M8-3<br>KM8-M8   |   | ■   |   |   |  |   | ■   | ■   | ■   | 18                         |               |
|    | NEBU-M12G5-...<br>SIM-M12-...-5   |   |   | ■   |   |  | ■   |   |   |   | 35                         |               |
|   | NEBU-M12G5-E-5-Q8N-M12G5<br>NEBU-M12G5-E-7.5-Q8N-M12G5<br>NEBU-M12G5-E-10-Q8N-M12G5 | ■   |   |   |   |  |   |   |   |   | 35                         |               |
|  | NEBU-M12W8-K-...<br>SIM-M12-8GD-...   |   |   |   |   |  |   |   |   | ■   | 40                         |               |
|  | NEDU-L2R1-M8G3-1L1-1L2-M8G4   |   |   |   | ■   |  |   |   |   |   | 50                         |               |
|  | KM12-DUO-M8-GDGD<br>KM12-DUO-M8-GDWD<br>KM12-DUO-M8-WDWD                            |   |   | ■   |   |  | ■   |   |   |   | 52                         |               |
|  | KVI-CP-3-WS-WD-...  |   | ■   |   | ■   | ■  | ■   | ■   |   |   | 54                         |               |
|  | KVI-CP-3-GS-GD-...  |   | ■   |   | ■   | ■  | ■   | ■   |   |   | 54                         |               |

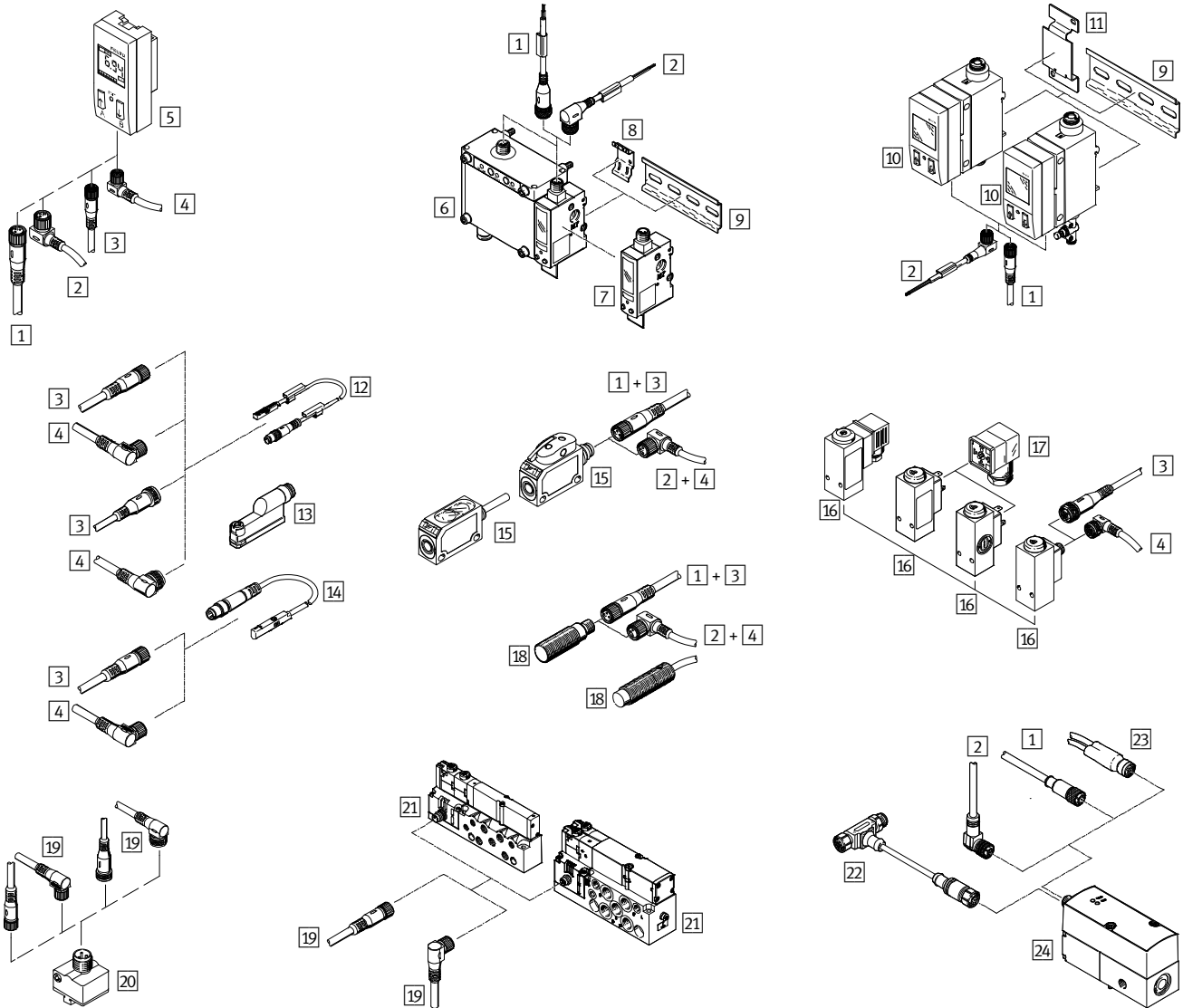
## Connecting cables KM8, KM12 and NEBU for electrical modules



| Designation | Type                | → Page/<br>Internet     |      |
|-------------|---------------------|-------------------------|------|
| 1           | Input module        | CP-E32-M...-EL          | cpi  |
| 2           | Connection block    | CPX-AB-8-M...-...POL    | cpx  |
| 3           | DUO cable           | NEDU-L2R1-M8G3-K-1L1... | 50   |
| 4           | Connecting cable    | NEBU-M8G4-K-2.5-M8G4    | 24   |
| 5           | Connection block    | CPX-AB-8-M8-3POL        | cpx  |
| 6           | Push-in T connector | NEDU-M8D3-M...T4        | 210  |
| 7           | Connecting cable    | KM8-M8-GSGD             | 18   |
| 8           | Connecting cable    | NEBU-M8G...             | 18   |
| 9           | Connection block    | CPX-AB-4-M12x2-5POL-... | cpx  |
| 10          | Connecting cable    | NEBU-M12G...            | 35   |
| 11          | Connecting cable    | KM12-M12-...            | 32   |
| 12          | Connecting cable    | KM12-DUO-M8-...         | 52   |
| 13          | Terminal            | CPX                     | cpx  |
| 14          | Control system      | CECC-S, CECC-LK         | cecc |

| Designation | Type                       | → Page/<br>Internet                  |      |
|-------------|----------------------------|--------------------------------------|------|
| 15          | Connecting cable           | NEBU-M12G5-...                       | 35   |
| 16          | Input module               | CTSL-D-16E-...                       | ctsl |
| 17          | Valve terminal             | CPV10, CPV14                         | cpv  |
| 18          | Valve terminal             | VTUB                                 | vtub |
| 19          | Valve terminal             | VTUG                                 | vtug |
| 20          | Connection block           | CPX-M...-M12x2-5POL                  | cpx  |
| 21          | Cover                      | CAFC-X1-GAL-...                      | cafc |
| 22          | Connecting cable           | NEBU-G78W5-...                       | 43   |
| 23          | Multi-pin plug distributor | NEDU-L6R1-...                        | 223  |
| 24          | Multi-pin plug distributor | NEDU-L4R1-M8G3L-...                  | 223  |
| 25          | Connecting cable           | KM12-8GD8GS-2-PU<br>SIM-M12-8GD-2-PU | 40   |
| 26          | Multi-pin plug distributor | MPV-E/A...-M8                        | 226  |
| 27          | Connecting cable           | KMPV-SUB-D-...                       | 176  |

Connecting cables NEBU and SIM for sensors, valves and pressure and vacuum switches



| Designation                         | Type                   | → Page/<br>Internet |
|-------------------------------------|------------------------|---------------------|
| 1 Connecting cable                  | NEBU-M12G...           | 35                  |
| 2 Connecting cable                  | NEBU-M12W...           | 35                  |
| 3 Connecting cable                  | NEBU-M8G...            | 18                  |
| 4 Connecting cable                  | NEBU-M8W...            | 24                  |
| 5 Pressure sensor<br>Air gap sensor | SDE1-...<br>SOPA, SFAB | sde1<br>sopa        |
| 6 Air gap sensor                    | SOPA-CM                | sopa                |
| 7 Air gap sensor                    | SOPA-M1                | sopa                |
| 8 Adapter plate                     | SXE3                   | sxe3                |
| 9 Mounting rail                     | NRH                    | nrh                 |
| 10 Flow sensor                      | SFAB                   | sfab                |
| 11 Adapter plate                    | SDE1-...-W-...         | sde1                |
| 12 Proximity sensor                 | SMT-8M-A               | smt-8m              |
| 13 Proximity sensor                 | SMT-8-SL               | smt-8               |

| Designation                                  | Type                        | → Page/<br>Internet |
|--|-----------------------------|---------------------|
| 14 Proximity sensor                          | SMT-10M                     | smt-10m             |
| 15 Opto-electronic sensor                    | SOEG                        | soeg                |
| 16 Pressure switch<br>Vacuum switch          | PEV-1/4-...<br>VPEF-1/8-... | pev<br>vpev         |
| 17 Plug socket                               | PEV-1/4-WD-LED<br>MSSD-C-4P | 239<br>239          |
| 18 Inductive sensor                          | SIEH                        | sieh                |
| 19 Connecting cable                          | SIM-M8/SIM-M12              | 18, 29              |
| 20 Proximity sensor                          | SMT-8M, SME-8M              | sme                 |
| 21 Solenoid valve                            | VMPA1, VMAPA2               | vmpa                |
| 22 Programming cable                         | VAVE-P8-VP                  | 56                  |
| 23 DUO cable                                 | NEDU-L1R2-V9-M12G8...       | 217                 |
| 24 Proportional directional<br>control valve | VPPM, VPPX                  | vppm<br>vppx        |





|   |  |  |  |
|---|--|--|--|
|   |  |  |  |
| <b>Connection technology, right-hand end</b>        |  |  |  |
| LE  | Open cable end                           |  |  |
| M8  | Plug with connecting thread M8           |  |  |
| M12   | Plug with connecting thread M12, A-coded |  |  |
| <b>Connection technology type at right-hand end</b> |  |  |  |
|   | Open cable end                           |  |  |
| G   | Straight                                 |  |  |
| W   | Angled                                   |  |  |
| <b>Number of pins/wires (right-hand end)</b>        |  |  |  |
| 2   | 2-pin                                    |  |  |
| 3   | 3-pin                                    |  |  |
| 4   | 4-pin                                    |  |  |
| 5   | 5-pin                                    |  |  |
| 8   | 8-pin                                    |  |  |



1

# Universal connecting cables

NEBU-LE5, open cable end, 5-pin – Technical data

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1

## Connecting cable NEBU-LE5

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled
- Cable length 1 m
- 5 wires
- Plug M12



### General technical data

|                                 |  |         |
|---------------------------------|--|---------|
| Conforms to standard            | EN 61984   |         |
|                                 | EN 61076-2-101                                       |         |
| Plug coding                     | A  |         |
| Cable composition               | [mm <sup>2</sup> ]                                   | 5x 0.25 |
| Cable diameter                  | [mm]   | 4.5     |
| Nominal conductor cross section | [mm <sup>2</sup> ]                                   | 0.25    |
| Cable characteristics           | Standard   |         |
| Cable test conditions           | Resistance to bending: to Festo standard             |         |
|                                 | Test conditions on request                           |         |
|                                 | Energy chain: 5 million cycles, bending radius 75 mm |         |

### Technical data

|                              |                   |             |             |
|------------------------------|-------------------|-------------|-------------|
| Operating voltage range      | [V]               | 0 ... 60 DC | 0 ... 60 AC |
| Acceptable current load      | [A]               | 4           |             |
| Surge resistance             | [kV]              | 1.5         |             |
| Protection class to EN 60529 | IP65, IP68, IP69K |             |             |

### Materials

|                     |                                 |
|---------------------|---------------------------------|
| Wire colour         | Blue, brown, grey, black, white |
| Housing colour      | Black                           |
| Cable sheath colour | Grey                            |
| Housing             | TPE-U(PU)                       |
| Insulating sheath   | PP                              |
| Union nut           | Nickel-plated brass             |
| Cable sheath        | TPE-U(PU)                       |
| Note on materials   | RoHS-compliant                  |

### Operating and environmental conditions

|  |   |             |
|--|---|-------------|
| Ambient temperature                                  | [°C]  | -25 ... +70 |
| Ambient temperature with flexible cable installation | [°C]  | -5 ... +70  |
| CE marking (see declaration of conformity)           | In accordance with EU Low Voltage Directive |             |
| Degree of contamination                              | 3   |             |



## Circuitry (socket view)

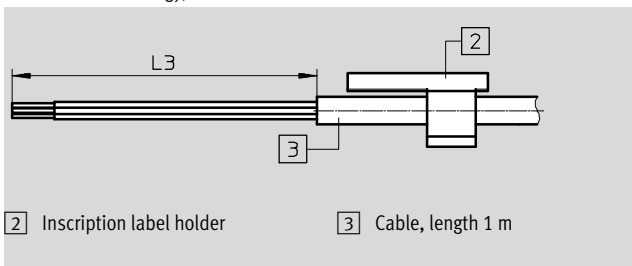
| Socket   | Pin | Wire colour <sup>1)</sup> | Pin | Plug |
|--|-----|---------------------------|-----|------|
| Electrical connection: open cable end, 5-wire – plug, 5-pin, M12 |     |                           |     |      |
| -  | -   | BN                        | 1   |      |
| -  | -   | WH                        | 2   |      |
| -  | -   | BU                        | 3   |      |
| -  | -   | BK                        | 4   |      |
| -  | -   | GY                        | 5   |      |

1) To IEC 757

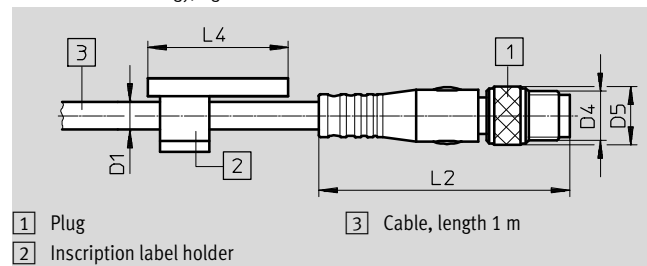
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Connection technology, left-hand end



Connection technology, right-hand end



|                                      |    |
|--------------------------------------|----|
| Connection technology, left-hand end | L3 |
| NEBU                                 |    |
| Open end                             | 50 |

|                                       |     |       |    |      |    |    |    |
|---------------------------------------|-----|-------|----|------|----|----|----|
| Connection technology, right-hand end | D1  | D4    | D5 | L2   | L3 | L4 | H1 |
| NEBU                                  | ∅   |       | ∅  |      |    |    |    |
| Straight plug                         | 4.5 | M12x1 | 15 | 54.5 | -  | 23 | -  |

## Ordering data

|   | Cable length [m] | Cable characteristics | Outlet direction    | Special features | Part No.      | Type                      |
|---|------------------|-----------------------|---------------------|------------------|---------------|---------------------------|
| Open cable end, 5-wire – plug, 5-pin, M12 |                  |                       |                     |                  |               |                           |
|   | 1                | Standard              | Straight – straight | -                | <b>569840</b> | <b>NEBU-LE5-K-1-M12G5</b> |

# Universal connecting cables

NEBU-M8/SIM-M8/KM8-M8, M8 3-pin – Technical data

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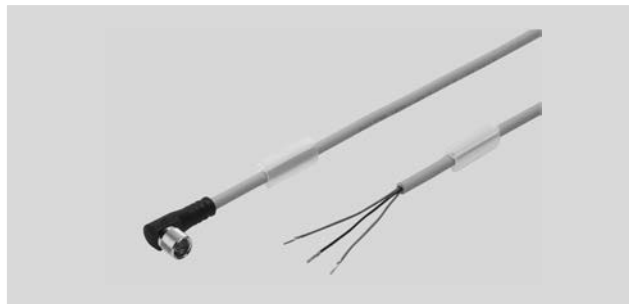
## Connecting cable

NEBU-M8

SIM-M8

KM8-M8

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled at both ends
- Cable lengths 0.1 ... 30 m
- 3 wires
- M8



## General technical data

|                                 |          |  |   |  |
|---------------------------------|----------|--|---|--|
| Conforms to standard            | NEBU/SIM | EN 61076-2-104<br>EN 61984<br>EN 61076-2-101 |   |  |
| Cable composition               |          | [mm <sup>2</sup> ] 3x 0.25                   |   |  |
| Cable diameter                  | NEBU/SIM | [mm] 4.5                                     |   |  |
| Nominal conductor cross section | NEBU/SIM | [mm <sup>2</sup> ] 0.25                      |   |  |
| Cable characteristics           | NEBU     | Code -P-                                     | Basic   |  |
|                                 |          | Code -K-                                     | Standard  |  |
|                                 |          | Code -E-                                     | Suitable for use with energy chains                         |  |
|                                 |          | Code -R-                                     | Suitable for robot applications                             |  |
|                                 | SIM      |  | Standard  |  |
|                                 | KM8-M8   |  | –   |  |
| Cable test conditions           | NEBU/SIM |  | Resistance to bending: to Festo standard                    |  |
|                                 |          |  | Test conditions on request                                  |  |
|                                 |          | Cable characteristics                        | Basic   | –  |
|                                 |          |  | Standard  | Energy chain: 5 million cycles, bending radius 75 mm |
|                                 |          | Suitable for use with energy chains          | Energy chain: 5 million cycles, bending radius 28 mm        |  |
|                                 |          | Suitable for robot applications              | Torsional strength greater than 300,000 cycles, ±270°/0.1 m |  |

## Technical data

|                              |          |   |             |                   |             |
|------------------------------|----------|---|-------------|-------------------|-------------|
| Operating voltage range      | NEBU/SIM | Without display   | [V]         | 0 ... 60 DC       | 0 ... 60 AC |
|                              |          | With display  | [V]         | 10 ... 30 DC      | –           |
|                              | KM8-M8   | [V]   | 0 ... 75 DC | 0 ... 60 AC       |             |
| Acceptable current load      | NEBU/SIM | Non-rotatable connection technology                                   | [A]         | 3                 |             |
|                              |          | Rotatable connection technology                                       | [A]         | 0.5               |             |
|                              | KM8-M8   | [A]   | 4           |                   |             |
| Surge resistance             | NEBU/SIM | Non-rotatable connection technology, without switching status display | [kV]        | 1.5               |             |
|                              |          | Rotatable connection technology                                       | [kV]        | 0.8               |             |
|                              |          | With switching status display   | [kV]        | 0.8               |             |
| Protection class to EN 60529 | SIM      |   |             | IP65, IP68        |             |
|                              | NEBU     |   |             | IP65, IP68, IP69K |             |
|                              | KM8-M8   |   |             | IP65              |             |

## Materials

|                     |          |  |                     |
|---------------------|----------|--|---------------------|
| Wire colour         | NEBU/SIM |  | Blue, brown, black  |
| Housing colour      | NEBU/SIM |  | Black               |
| Cable sheath colour |          |  | Grey                |
| Housing             | NEBU/SIM |  | TPE-U(PU)           |
| Insulating sheath   | NEBU/SIM | Cable characteristics: standard, suitable for energy chains and robot applications | PP                  |
|                     |          | Cable characteristics: basic, standard   | PVC-P               |
| Union nut           | NEBU/SIM |  | Nickel-plated brass |
| Cable sheath        | NEBU/SIM | Cable characteristics: standard, suitable for energy chains and robot applications | TPE-U(PU)           |
|                     |          | Cable characteristics: basic   | PVC-P               |
|                     | KM8-M8   |  | PUR                 |
| Note on materials   | NEBU/SIM | All types  | RoHS-compliant      |
|                     |          | Cable characteristics: suitable for energy chains and robot applications           | Halogen-free        |
| Special features    | NEBU     | Cable characteristics: suitable for energy chains and robot applications           | Oil-resistant       |

## Operating and environmental conditions

|  |          |   |             |   |
|--|----------|---|-------------|---|
| Ambient temperature                                  | NEBU/SIM | Cable characteristics: basic, standard  | [°C]        | -25 ... +70                                 |
|  |          | Cable characteristics: suitable for energy chains and robot applications        | [°C]        | -25 ... +80                                 |
|  | KM8-M8   | [°C]  | -25 ... +85 |   |
| Ambient temperature with flexible cable installation | NEBU/SIM | Cable characteristics: standard   | [°C]        | -5 ... +70                                  |
|  |          | Cable characteristics: basic, suitable for energy chains and robot applications | [°C]        | -5 ... +80                                  |
| CE marking (see declaration of conformity)           | NEBU/SIM | With switching status display   |             | -   |
|  |          | Without switching status display  |             | In accordance with EU Low Voltage Directive |
|  | KM8-M8   |   |             | -   |
| Degree of contamination                              |          |   |             | 3   |

# Universal connecting cables

NEBU-M8/SIM-M8/KM8-M8, M8 3-pin – Technical data

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## Circuitry (socket view)

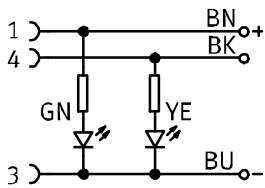
| Socket  | Pin | Wire colour <sup>1)</sup> | Pin | Plug |
|---|-----|---------------------------|-----|------|
| Electrical connection: socket, 3-pin, M8 – open cable end |     |                           |     |      |
|   | 1   | BN                        | -   | -    |
|   | 3   | BU                        | -   |      |
|   | 4   | BK                        | -   |      |
| Electrical connection: socket, 3-pin, M8 – plug, 3-pin    |     |                           |     |      |
|   | 1   | BN                        | 1   |      |
|   | 3   | BU                        | 3   |      |
|   | 4   | BK                        | 4   |      |
| Electrical connection: socket, 3-pin, M8 – plug, 4-pin    |     |                           |     |      |
|   | 1   | BN                        | 1   |      |
|   | -   | -                         | 2   |      |
|   | 3   | BU                        | 3   |      |
|   | 4   | BK                        | 4   |      |

1) To IEC 757

## Circuitry – Switching status display

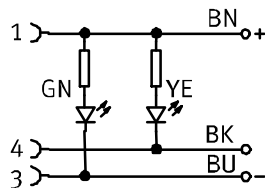
Display code P

For NPN N/O contact



Display code N

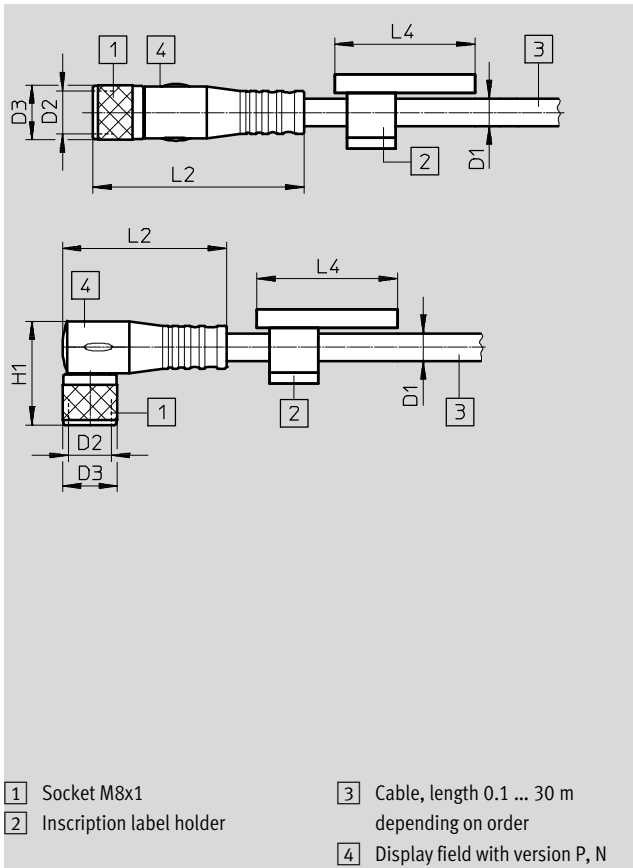
For PNP N/O contact



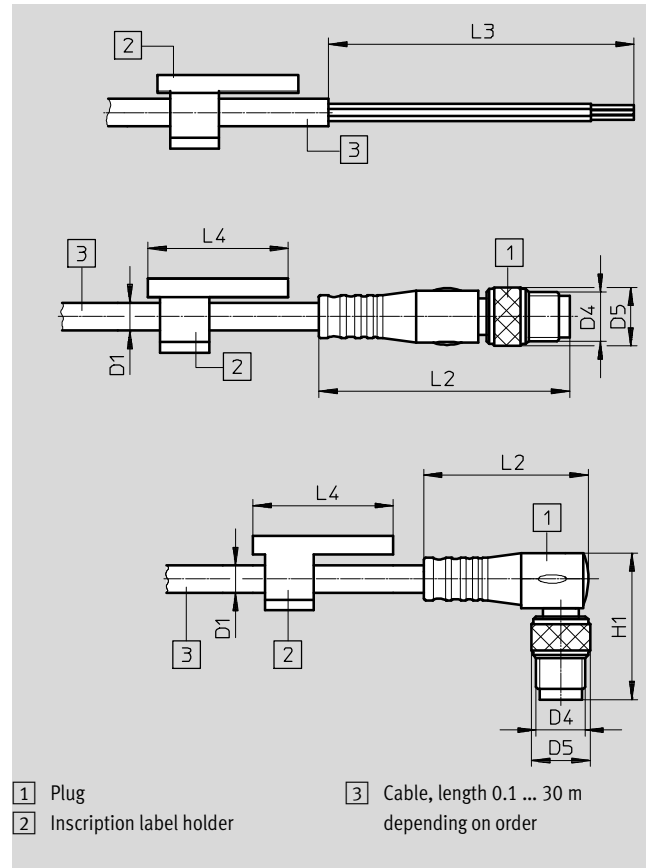
Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Connection technology, left-hand end



Connection technology, right-hand end



| Connection technology, left-hand end | D1<br>∅ | D2   | D3<br>∅ | L2   | L4 | H1   |
|--------------------------------------|---------|------|---------|------|----|------|
| <b>NEBU</b>                          |         |      |         |      |    |      |
| Straight socket                      | 4.5     | M8x1 | 9       | 34.6 | 23 | –    |
| Angled socket                        | 4.5     | M8x1 | 9       | 26.9 | 23 | 17   |
| Rotatable socket                     | 4.5     | M8x1 | 10      | 20.9 | 23 | 16.3 |
| <b>NEBU with display</b>             |         |      |         |      |    |      |
| Straight socket                      | 3.4     | M8x1 | 9       | 34.6 | 23 | –    |
| Angled socket                        | 3.4     | M8x1 | 9       | 26.9 | 23 | 17   |
| <b>SIM</b>                           |         |      |         |      |    |      |
| Straight socket                      | 4.5     | M8x1 | 9       | 34.4 | –  | –    |
| Angled socket                        | 4.5     | M8x1 | 9       | 26.8 | –  | 16.8 |
| <b>KM8-M8</b>                        |         |      |         |      |    |      |
| Straight socket                      | 4.5     | M8x1 | 9.7     | 32   | –  | –    |

| Connection technology, right-hand end | D1<br>∅ | D4    | D5<br>∅ | L2   | L3 | L4 | H1   |
|---------------------------------------|---------|-------|---------|------|----|----|------|
| <b>NEBU</b>                           |         |       |         |      |    |    |      |
| Open end                              | 4.5     | –     | –       | –    | 50 | 23 | –    |
| Straight plug                         | 4.5     | M8x1  | 9.6     | 41.1 | –  | 23 | –    |
|                                       | 4.5     | M12x1 | 15      | 54.5 | –  | 23 | –    |
| Angled plug                           | 4.5     | M8x1  | 9.6     | 26.9 | –  | 23 | 24   |
|                                       | 4.5     | M12x1 | 15      | 37.5 | –  | 23 | 33.2 |
| <b>NEBU with display</b>              |         |       |         |      |    |    |      |
| Straight plug                         | 3.4     | M8x1  | 9       | 41.1 | –  | 23 | –    |
|                                       | 3.4     | M12x1 | 15      | 54.5 | –  | 23 | –    |
| Angled plug                           | 3.4     | M8x1  | 9       | 26.9 | –  | 23 | 24   |
|                                       | 3.4     | M12x1 | 15      | 37.5 | –  | 23 | 33.2 |
| <b>SIM</b>                            |         |       |         |      |    |    |      |
| Open end                              | 4.5     | –     | –       | –    | 50 | –  | –    |
| <b>KM8-M8</b>                         |         |       |         |      |    |    |      |
| Straight plug                         | 4.5     | M8x1  | 9.7     | 39   | –  | –  | –    |

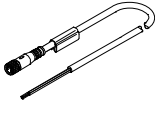
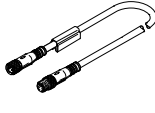
# Universal connecting cables

NEBU-M8/SIM-M8/KM8-M8, M8 3-pin – Technical data

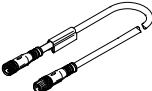
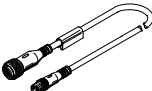
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## Ordering data

|   | Cable length [m]                    | Cable characteristics               | Outlet direction   | Special features    | Part No.              | Type                 |
|---|-------------------------------------|-------------------------------------|--|---------------------|-----------------------|----------------------|
| <b>Socket, 3-pin, M8 – open cable end</b>   |                                     |                                     |  |                     |                       |                      |
|    | 2.5                                 | Standard                            | Straight – straight  | –                   | 541333                | NEBU-M8G3-K-2.5-LE3  |
|   |                                     |                                     |  | –                   | 159420                | SIM-M8-3GD-2,5-PU    |
|   |                                     |                                     | Angled – straight  | –                   | 541338                | NEBU-M8W3-K-2.5-LE3  |
|   |                                     |                                     |  | –                   | 159422                | SIM-M8-3WD-2,5-PU    |
|   |                                     |                                     | Rotatable socket   | 8001660             | NEBU-M8R3-K-2.5-LE3   |                      |
|   |                                     |                                     | For NPN N/O contact, yellow switching status display, green ready status display | 541336              | NEBU-M8W3N-K-2.5-LE3  |                      |
|   |                                     |                                     | –  | 159426              | SIM-M8-3WD-2,5-NSL-PU |                      |
|   |                                     |                                     | For PNP N/O contact, yellow switching status display, green ready status display | 541337              | NEBU-M8W3P-K-2.5-LE3  |                      |
|   |                                     |                                     | –  | 159424              | SIM-M8-3WD-2,5-PSL-PU |                      |
|   |                                     |                                     | Suitable for robot applications  | Straight – straight | Oil-resistant         | 569845               |
|   | –                                   | Angled – straight                   | Oil-resistant  | 569847              | NEBU-M8W3-R-2.5-LE3   |                      |
|   | 5                                   | Standard                            | Straight – straight  | –                   | 541334                | NEBU-M8G3-K-5-LE3    |
|   |                                     |                                     |  | –                   | 159421                | SIM-M8-3GD-5-PU      |
|   |                                     |                                     | Angled – straight  | –                   | 541341                | NEBU-M8W3-K-5-LE3    |
|   |                                     |                                     |  | –                   | 159423                | SIM-M8-3WD-5-PU      |
|   |                                     |                                     | Rotatable socket   | 8001661             | NEBU-M8R3-K-5-LE3     |                      |
|   |                                     |                                     | For NPN N/O contact, yellow switching status display, green ready status display | 541339              | NEBU-M8W3N-K-5-LE3    |                      |
|   |                                     |                                     | –  | 159427              | SIM-M8-3WD-5-NSL-PU   |                      |
|   |                                     |                                     | For PNP N/O contact, yellow switching status display, green ready status display | 541340              | NEBU-M8W3P-K-5-LE3    |                      |
|   |                                     |                                     | –  | 159425              | SIM-M8-3WD-5-PSL-PU   |                      |
| Suitable for use with energy chains   |                                     |                                     | Straight – straight  | Oil-resistant       | 569843                | NEBU-M8G3-E-5-LE3    |
| Suitable for robot applications   | Straight – straight                 | Oil-resistant                       | 569846   | NEBU-M8G3-R-5-LE3   |                       |                      |
| 10  | Standard                            | Straight – straight                 | –  | 541332              | NEBU-M8G3-K-10-LE3    |                      |
|   |                                     |                                     | –  | 192964              | SIM-M8-3GD-10-PU      |                      |
|   |                                     | Angled – straight                   | –  | 541335              | NEBU-M8W3-K-10-LE3    |                      |
|   |                                     |                                     | –  | 192965              | SIM-M8-3WD-10-PU      |                      |
|   | Suitable for use with energy chains | Straight – straight                 | Oil-resistant  | 569842              | NEBU-M8G3-E-10-LE3    |                      |
|   | Suitable for robot applications     | Straight – straight                 | Oil-resistant  | 8003129             | NEBU-M8G3-R-10-LE3    |                      |
| <b>Socket, 3-pin, M8 – plug, 3-pin, M8</b>  |                                     |                                     |  |                     |                       |                      |
|  | 0.5                                 | Standard                            | Straight – straight  | –                   | 541346                | NEBU-M8G3-K-0.5-M8G3 |
|   |                                     |                                     |  | –                   | 175488                | KM8-M8-GSGD-0,5      |
|   | 1                                   | Standard                            | Straight – straight  | –                   | 541347                | NEBU-M8G3-K-1-M8G3   |
|   |                                     |                                     |  | –                   | 175489                | KM8-M8-GSGD-1        |
|   | 1.5                                 | Standard                            | Straight – straight  | –                   | 8003133               | NEBU-M8G3-K-1.5-M8G3 |
|   | 2                                   | Standard                            | Straight – straight  | –                   | 8003131               | NEBU-M8G3-K-2-M8G3   |
|   | 2.5                                 | Standard                            | Straight – straight  | –                   | 541348                | NEBU-M8G3-K-2.5-M8G3 |
|   |                                     |                                     |  | –                   | 165610                | KM8-M8-GSGD-2,5      |
|   | 3                                   | Standard                            | Straight – straight  | –                   | 8003132               | NEBU-M8G3-K-3-M8G3   |
|   | 3.5                                 | Suitable for use with energy chains | Straight – straight  | Oil-resistant       | 559364                | NEBU-M8G3-E-3.5-M8G3 |
|   | 5                                   | Standard                            | Straight – straight  | –                   | 541349                | NEBU-M8G3-K-5-M8G3   |
|   |                                     |                                     |  | –                   | 165611                | KM8-M8-GSGD-5        |
|   | 10                                  | Standard                            | Straight – straight  | –                   | 569844                | NEBU-M8G3-K-10-M8G3  |

## Ordering data

|   | Cable length [m] | Cable characteristics | Outlet direction    | Special features | Part No.       | Type                         |
|---|------------------|-----------------------|---------------------|------------------|----------------|------------------------------|
| Socket, 3-pin, M8 – plug, 4-pin, M8   |                  |                       |                     |                  |                |                              |
|  | 2.5              | Standard              | Straight – straight | –                | <b>554037</b>  | <b>NEBU-M8G3-K-2.5-M8G4</b>  |
| Socket, 3-pin, M8 – plug, 3-pin, M12  |                  |                       |                     |                  |                |                              |
|  | 0.5              | Standard              | Straight – straight | –                | <b>8000209</b> | <b>NEBU-M8G3-K-0.5-M12G3</b> |

# Universal connecting cables

NEBU-M8/SIM-M8, M8 4-pin – Technical data

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## Connecting cable

NEBU-M8

SIM-M8

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled at both ends
- Cable lengths 0.1 ... 30 m
- 4 wires
- M8



## General technical data

|                                 |                       |  |   |
|---------------------------------|-----------------------|--|---|
| Conforms to standard            |                       | EN 61076-2-104                           |   |
|                                 |                       | EN 61984                                 |   |
|                                 |                       | EN 61076-2-101                           |   |
| Cable composition               |                       | [mm <sup>2</sup> ]                       | 4x 0.25   |
| Cable diameter                  | NEBU                  | With display                             | [mm] 3.4  |
|                                 |                       | Without display                          | [mm] 4.5  |
|                                 | SIM                   | [mm]                                     | 4.5   |
| Nominal conductor cross section |                       | [mm <sup>2</sup> ]                       | 0.25  |
| Cable characteristics           | NEBU                  | Code -P-                                 | Basic   |
|                                 |                       | Code -K-                                 | Standard  |
|                                 |                       | Code -E-                                 | Suitable for use with energy chains                         |
|                                 |                       | Code -R-                                 | Suitable for robot applications                             |
|                                 | SIM                   |  | Standard  |
| Cable test conditions           |                       | Resistance to bending: to Festo standard |   |
|                                 |                       | Test conditions on request               |   |
| Cable characteristics           | Cable characteristics | Basic                                    | -   |
|                                 |                       | Standard                                 | Energy chain: 5 million cycles, bending radius 75 mm        |
|                                 |                       | Suitable for use with energy chains      | Energy chain: 5 million cycles, bending radius 28 mm        |
|                                 |                       | Suitable for robot applications          | Torsional strength greater than 300,000 cycles, ±270°/0.1 m |

## Technical data

|                              |      |                 |             |                |                   |
|------------------------------|------|-----------------|-------------|----------------|-------------------|
| Operating voltage range      | NEBU | Without display | [V]         | 0 ... 30 DC    | 0 ... 30 AC       |
|                              |      | With display    | [V]         | 21.6 ... 30 DC | 21.6 ... 30 AC    |
|                              | SIM  | [V]             | 0 ... 30 DC | 0 ... 30 AC    |                   |
| Acceptable current load      |      |                 | [A]         | 3              |                   |
| Surge resistance             | NEBU |                 | [kV]        | 0.8            |                   |
|                              | SIM  |                 | [kV]        | 0.8            |                   |
| Protection class to EN 60529 | NEBU |                 |             |                | IP65, IP68, IP69K |
|                              | SIM  |                 |             |                | IP65, IP68        |



## Materials

|                     |  |                           |
|---------------------|--|---------------------------|
| Wire colour         |  | Blue, brown, black, white |
| Housing colour      |  | Black                     |
| Cable sheath colour |  | Grey                      |
| Housing             |  | TPE-U(PU)                 |
| Insulating sheath   | Cable characteristics: standard, suitable for energy chains and robot applications | PP                        |
|                     | Cable characteristics: basic, standard   | PVC-P                     |
| Union nut           |  | Nickel-plated brass       |
| Cable sheath        | Cable characteristics: standard, suitable for energy chains and robot applications | TPE-U(PU)                 |
|                     | Cable characteristics: basic   | PVC-P                     |
| Note on materials   |  | RoHS-compliant            |
|                     | Cable characteristics: suitable for energy chains and robot applications           | Halogen-free              |
| Special features    | Cable characteristics: suitable for energy chains and robot applications           | Oil-resistant             |

## Operating and environmental conditions

|  |   |      |             |
|--|---|------|-------------|
| Ambient temperature                                  | Cable characteristics: basic, standard  | [°C] | -25 ... +70 |
|  | Cable characteristics: suitable for energy chains and robot applications        | [°C] | -25 ... +80 |
| Ambient temperature with flexible cable installation | Cable characteristics: standard   | [°C] | -5 ... +70  |
|  | Cable characteristics: basic, suitable for energy chains and robot applications | [°C] | -5 ... +80  |
| Degree of contamination                              |   |      | 3           |

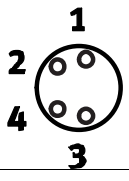
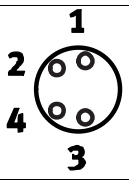
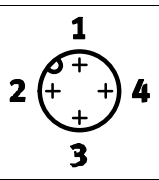
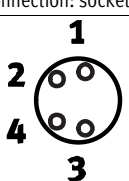
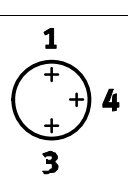
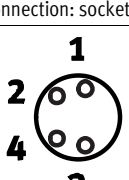
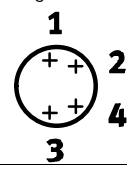
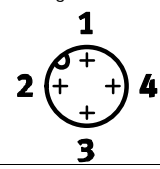
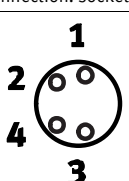
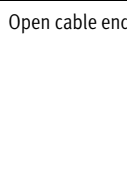
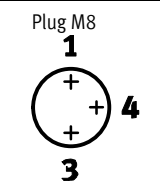
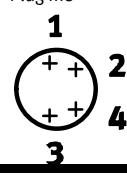
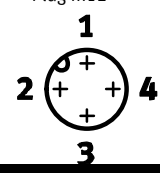
# Universal connecting cables

NEBU-M8/SIM-M8, M8 4-pin – Technical data

FESTO

1

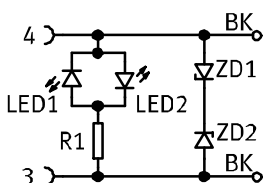
## Circuitry (socket view)

| Socket  | Pin | Wire colour <sup>1)</sup> | Pin | Plug  |   |
|---|-----|---------------------------|-----|---|---|
| Electrical connection: socket, 4-pin, M8 – open cable end                           |     |                           |     |   |   |
|    | 1   | BN                        | -   | -   |   |
|   | 2   | WH                        | -   | -   |   |
|   | 3   | BU                        | -   | -   |   |
|   | 4   | BK                        | -   | -   |   |
| Electrical connection: socket, 4-pin, M8 – plug, 2-pin                              |     |                           |     |   |   |
|    | 1   | BN                        | -   |    |   |
|   | 2   | WH                        | -   |   |   |
|   | 3   | BU                        | 3   |   |   |
|   | 4   | BK                        | 4   |   |   |
| Electrical connection: socket, 4-pin, M8 – plug, 3-pin                              |     |                           |     |   |   |
|   | 1   | BN                        | 1   |   |   |
|   | 2   | WH                        | -   |   |   |
|   | 3   | BU                        | 3   |   |   |
|   | 4   | BK                        | 4   |   |   |
| Electrical connection: socket, 4-pin, M8 – plug, 4-pin                              |     |                           |     |   |   |
|  | 1   | BN                        | 1   |  |  |
|   | 2   | WH                        | 2   |   |   |
|   | 3   | BU                        | 3   |   |   |
|   | 4   | BK                        | 4   |   |   |
| Electrical connection: socket, 4-pin, M8, with display code L                       |     |                           |     |   |   |
|  | 1   | -                         | 1   |  |  |
|   | 2   | -                         | 2   |   |   |
|   | 3   | BK                        | 3   |  |  |
|   | 4   | BK                        | 4   |   |   |

1) – To IEC 757

## Circuitry – Switching status display

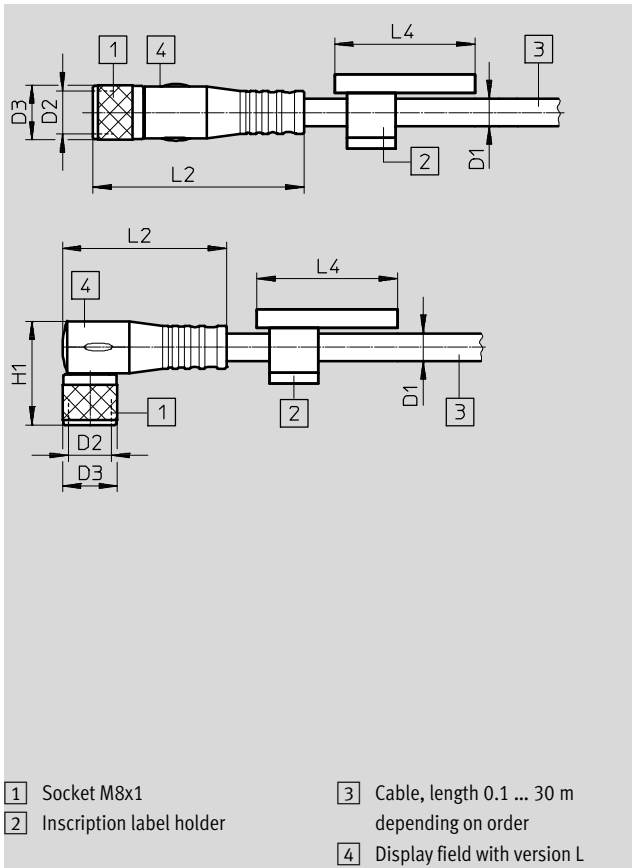
Display code L



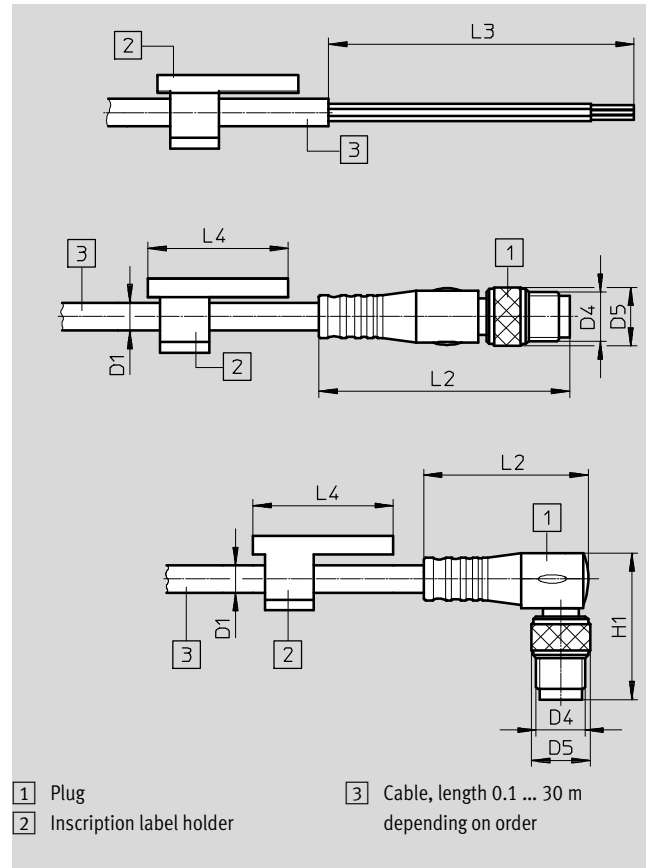
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Connection technology, left-hand end



Connection technology, right-hand end



| Connection technology, left-hand end | D1<br>Ø | D2   | D3<br>Ø | L2   | L4 | H1   |
|--------------------------------------|---------|------|---------|------|----|------|
| <b>NEBU</b>                          |         |      |         |      |    |      |
| Straight socket                      | 4.5     | M8x1 | 9       | 34.6 | 23 | –    |
| Angled socket                        | 4.5     | M8x1 | 9       | 26.9 | 23 | 17   |
| Rotatable socket                     | 4.5     | M8x1 | 10      | 20.9 | 23 | 16.3 |
| <b>NEBU with display</b>             |         |      |         |      |    |      |
| Straight socket                      | 3.4     | M8x1 | 9       | 34.6 | 23 | –    |
| Angled socket                        | 3.4     | M8x1 | 9       | 26.9 | 23 | 17   |
| <b>SIM</b>                           |         |      |         |      |    |      |
| Straight socket                      | 4.5     | M8x1 | 9       | 34.4 | –  | 16.8 |
| Angled socket                        | 4.5     | M8x1 | 9       | 26.8 | –  | 16.8 |

| Connection technology, right-hand end | D1<br>Ø | D4    | D5<br>Ø | L2   | L3 | L4 | H1   |
|---------------------------------------|---------|-------|---------|------|----|----|------|
| <b>NEBU</b>                           |         |       |         |      |    |    |      |
| Open end                              | 4.5     | –     | –       | –    | 50 | 23 | –    |
| Straight plug                         | 4.5     | M8x1  | 9.6     | 41.1 | –  | 23 | –    |
|                                       | 4.5     | M12x1 | 15      | 54.5 | –  | 23 | –    |
| Angled plug                           | 4.5     | M8x1  | 9.6     | 26.9 | –  | 23 | 24   |
|                                       | 4.5     | M12x1 | 15      | 37.5 | –  | 23 | 33.2 |
| <b>NEBU with display</b>              |         |       |         |      |    |    |      |
| Straight plug                         | 3.4     | M8x1  | 9       | 41.1 | –  | 23 | –    |
|                                       | 3.4     | M12x1 | 15      | 54.5 | –  | 23 | –    |
| Angled plug                           | 3.4     | M8x1  | 9       | 26.9 | –  | 23 | 24   |
|                                       | 3.4     | M12x1 | 15      | 37.5 | –  | 23 | 33.2 |
| <b>SIM</b>                            |         |       |         |      |    |    |      |
| Open end                              | 4.5     | –     | –       | –    | 50 | –  | –    |

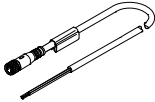
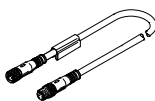
# Universal connecting cables

NEBU-M8/SIM-M8, M8 4-pin – Technical data

FESTO

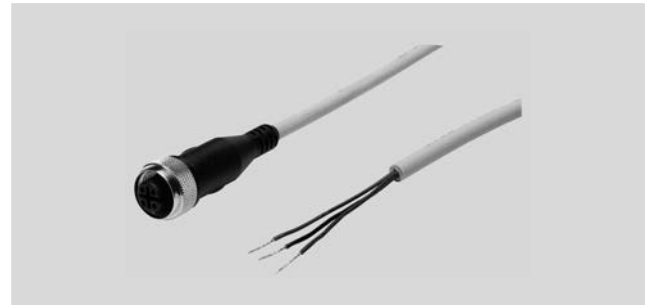
1

## Ordering data

|   | Cable length [m] | Cable characteristics           | Outlet direction    | Special features | Part No.                  | Type                        |
|---|------------------|---------------------------------|---------------------|------------------|---------------------------|-----------------------------|
| <b>Socket, 4-pin, M8 – open cable end</b>   |                  |                                 |                     |                  |                           |                             |
|  | 2.5              | Standard                        | Straight – straight | –                | <b>541342</b>             | <b>NEBU-M8G4-K-2.5-LE4</b>  |
|   |                  |                                 |                     |                  | <b>158960</b>             | <b>SIM-M8-4GD-2,5-PU</b>    |
|   |                  |                                 | Angled – straight   | –                | <b>541344</b>             | <b>NEBU-M8W4-K-2.5-LE4</b>  |
|   |                  |                                 |                     | –                | <b>158962</b>             | <b>SIM-M8-4WD-2,5-PU</b>    |
|   | 5                | Standard                        | Straight – straight | –                | <b>541343</b>             | <b>NEBU-M8G4-K-5-LE4</b>    |
|   |                  |                                 |                     | –                | <b>158961</b>             | <b>SIM-M8-4GD-5-PU</b>      |
|   |                  |                                 | Angled – straight   | –                | <b>541345</b>             | <b>NEBU-M8W4-K-5-LE4</b>    |
|   |                  |                                 |                     | –                | <b>158963</b>             | <b>SIM-M8-4WD-5-PU</b>      |
| 9   | Standard         | Straight – straight             | –                   | <b>8003130</b>   | <b>NEBU-M8G4-K-9-LE4</b>  |                             |
| 10  | Standard         | Angled – straight               | –                   | <b>575833</b>    | <b>NEBU-M8W4-K-10-LE4</b> |                             |
| <b>Socket, 4-pin, M8 – plug, 4-pin, M8</b>  |                  |                                 |                     |                  |                           |                             |
|  | 2                | Suitable for robot applications | Straight – straight | Oil-resistant    | <b>556946</b>             | <b>NEBU-M8G4-R-2-M8G4</b>   |
|   | 2.5              | Standard                        | Straight – straight | –                | <b>554035</b>             | <b>NEBU-M8G4-K-2.5-M8G4</b> |

**Connecting cable  
SIM-M12**

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled
- Cable lengths 2.5 m, 3 m, 5 m
- 3 wires
- M12



## General technical data

|                                 |  |
|---------------------------------|--|
| Conforms to standard            | EN 61984   |
|                                 | EN 61076-2-101                                       |
| Plug coding                     | A  |
| Cable composition               | [mm <sup>2</sup> ] 3x 0.25                           |
|                                 | SIM-...-RS [mm <sup>2</sup> ] 3x 0.5                 |
| Cable diameter                  | [mm] 4.5   |
|                                 | SIM-...-RS [mm] 5.2                                  |
| Nominal conductor cross section | [mm <sup>2</sup> ] 0.25                              |
| Cable characteristics           | Standard   |
| Cable test conditions           | Resistance to bending: to Festo standard             |
|                                 | Test conditions on request                           |
|                                 | Energy chain: 5 million cycles, bending radius 75 mm |

## Technical data

|                              |                                  |      |              |              |
|------------------------------|----------------------------------|------|--------------|--------------|
| Operating voltage range      | Without switching status display | [V]  | 0 ... 250 DC | 0 ... 250 AC |
|                              | With switching status display    | [V]  | 10 ... 30 DC | –            |
|                              | SIM-...-RS                       | [V]  | 0 ... 70 DC  | 0 ... 45 AC  |
| Acceptable current load      |                                  | [A]  | 4            |              |
| Surge resistance             | Without switching status display | [kV] | 2.5          |              |
|                              | With switching status display    | [kV] | 0.8          |              |
|                              | SIM-...-RS                       | [kV] | 2.5          |              |
| Protection class to EN 60529 |                                  |      | IP65, IP68   |              |
|                              | SIM-...-RS                       |      | IP65, IP67   |              |

## Materials

|                     |   |
|---------------------|---|
| Wire colour         | Blue, brown, black                      |
| Housing colour      | Black                                   |
| Cable sheath colour | Grey                                    |
|                     | SIM-...-RS Orange                       |
| Housing             | TPE-U(PU)                               |
| Insulating sheath   | PVC                                     |
| Union nut           | Nickel-plated brass                     |
| Cable sheath        | TPE-U(PU)                               |
|                     | SIM-...-RS PVC, radiation crosslinked   |
| Note on materials   | RoHS-compliant, free of copper and PTFE |

# Universal connecting cables

SIM-M12, M12 3-pin – Technical data

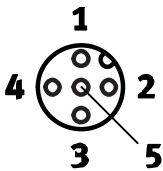
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## Operating and environmental conditions

|  |                                  |      |   |
|--|----------------------------------|------|---|
| Ambient temperature                                  |                                  | [°C] | -25 ... +70                                 |
|  | SIM-...-RS                       | [°C] | -25 ... +80                                 |
| Ambient temperature with flexible cable installation |                                  | [°C] | -5 ... +70                                  |
|  | SIM-...-RS                       | [°C] | 0 ... +80                                   |
| CE marking (see declaration of conformity)           | Without switching status display |      | In accordance with EU Low Voltage Directive |
|  | SIM-...-RS                       |      | -   |
| Degree of contamination                              |                                  |      | 3   |

## Circuitry (socket view)

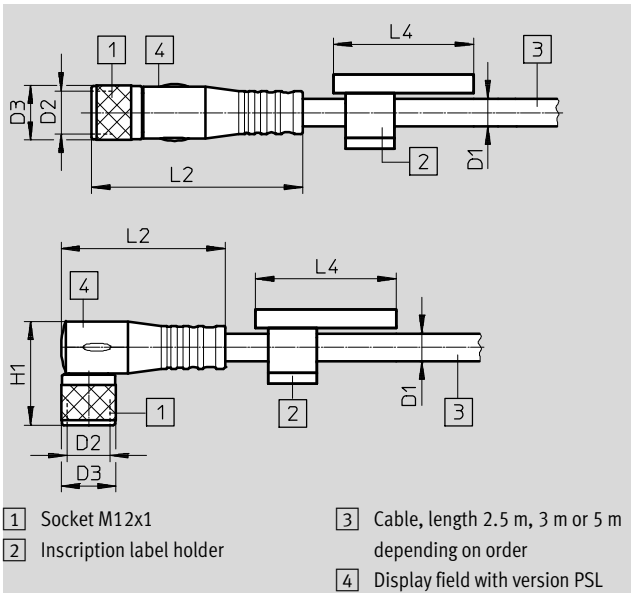
| Socket  | Pin | Wire colour <sup>1)</sup> | Pin | Plug |
|---|-----|---------------------------|-----|------|
| Electrical connection: socket, 3-pin, M12 – open cable end                        |     |                           |     |      |
|  | 1   | BN                        | -   | -    |
|   | 2   | -                         | -   |      |
|   | 3   | BU                        | -   |      |
|   | 4   | BK                        | -   |      |
|   | 5   | -                         | -   |      |

1) To IEC 757

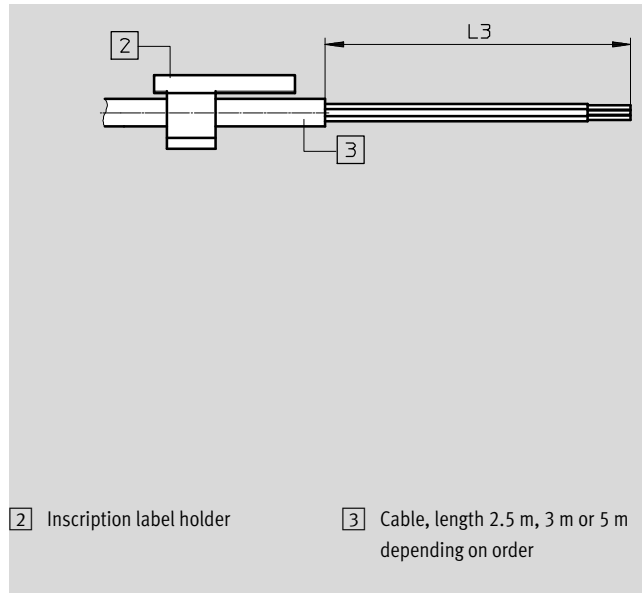
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Connection technology, left-hand end



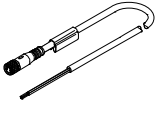
Connection technology, right-hand end



| Connection technology, left-hand end | D1<br>Ø | D2    | D3<br>Ø | L2   | L4 | H1 |
|--------------------------------------|---------|-------|---------|------|----|----|
| SIM                                  |         |       |         |      |    |    |
| Straight socket                      | 4.5     | M12x1 | 15      | 48.5 | -  | -  |
| Angled socket                        | 4.5     | M12x1 | -       | 37.5 | -  | 26 |
| SIM-...-RS                           |         |       |         |      |    |    |
| Straight socket                      | 5.2     | M12x1 | 15      | 38   | -  | -  |
| Angled socket                        | 5.2     | M12x1 | 13.5    | 31   | -  | 25 |

| Connection technology, right-hand end | D1<br>Ø | L3 |
|---------------------------------------|---------|----|
| SIM                                   |         |    |
| Open end                              | 4.5     | 50 |
| SIM-...-RS                            |         |    |
| Open end                              | 5.2     | 50 |

## Ordering data

|   | Cable length [m] | Cable characteristics | Outlet direction    | Special features   | Part No.      | Type                          |
|---|------------------|-----------------------|---------------------|--|---------------|-------------------------------|
| <b>Socket, 3-pin, M12 – open cable end</b>  |                  |                       |                     |  |               |                               |
|  | 2.5              | Standard              | Straight – straight | –  | <b>159428</b> | <b>SIM-M12-3GD-2,5-PU</b>     |
|   |                  |                       | Angled – straight   | –  | <b>159430</b> | <b>SIM-M12-3WD-2,5-PU</b>     |
|   |                  |                       |                     | For NPN N/O contact, yellow switching status display, green ready status display | <b>159434</b> | <b>SIM-M12-3WD-2,5-NSL-PU</b> |
|   | 3                | Standard              | Straight – straight | Resistant to welding spatter   | <b>30450</b>  | <b>SIM-M12-RS-3GD-3</b>       |
|   |                  |                       | Angled – straight   | Resistant to welding spatter   | <b>30451</b>  | <b>SIM-M12-RS-3WD-3</b>       |
|   | 5                | Standard              | Straight – straight | –  | <b>159429</b> | <b>SIM-M12-3GD-5-PU</b>       |
|   |                  |                       | Angled – straight   | –  | <b>159431</b> | <b>SIM-M12-3WD-5-PU</b>       |
|   |                  |                       |                     | For NPN N/O contact, yellow switching status display, green ready status display | <b>159435</b> | <b>SIM-M12-3WD-5-NSL-PU</b>   |

# Universal connecting cables

SIM-M12-4/KM12-M12 M12 4-pin – Technical data

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## Connecting cable

**SIM-M12-4**

**KM12-M12**

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled at both ends
- Cable lengths 1 m, 2.5 m, 5 m
- 4 wires
- M12



## General technical data

|                                 |  |                    |         |
|---------------------------------|--|--------------------|---------|
| Conforms to standard            | EN 61076-2-101<br>EN 61984                           |                    |         |
| Plug coding                     | A  |                    |         |
| Cable composition               | KM12-M12-GSWD-1-4                                    | [mm <sup>2</sup> ] | 4x 0.34 |
|                                 | Other types  | [mm <sup>2</sup> ] | 4x 0.25 |
| Cable diameter                  | SIM  | [mm]               | 4.5     |
| Nominal conductor cross section | SIM  | [mm <sup>2</sup> ] | 0.25    |
| Cable characteristics           | SIM Standard   |                    |         |
| Cable test conditions           | SIM Test conditions on request                       |                    |         |
|                                 | Resistance to bending: to Festo standard             |                    |         |
|                                 | Energy chain: 5 million cycles, bending radius 75 mm |                    |         |

## Technical data

|                              |                   |      |              |              |
|------------------------------|-------------------|------|--------------|--------------|
| Operating voltage range      | SIM               | [V]  | 0 ... 250 DC | 0 ... 250 AC |
|                              | KM12-M12          | [V]  | 0 ... 75 DC  | 0 ... 60 AC  |
| Acceptable current load      | SIM               | [A]  | 4            |              |
|                              | KM12-M12-GSGD-2,5 | [A]  | 3.8          |              |
|                              | KM12-M12-GSGD-5   | [A]  | 2.8          |              |
|                              | KM12-M12-GSWD-1-4 | [A]  | 3.8          |              |
| Surge resistance             | SIM               | [kV] | 2.5          |              |
| Protection class to EN 60529 | SIM               |      | IP65, IP68   |              |
|                              | KM12-M12          |      | IP67         |              |

## Materials

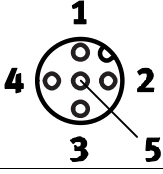
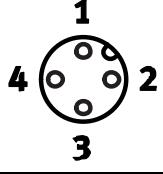
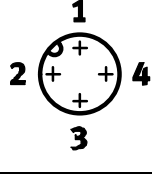
|                     |                   |  |   |  |
|---------------------|-------------------|--|---|--|
| Wire colour         | SIM               |  | Blue, brown, black, white               |  |
| Housing colour      | SIM               |  | Black                                   |  |
| Cable sheath colour |                   |  | Grey                                    |  |
| Housing             | SIM               |  | TPE-U(PU)                               |  |
|                     | KM12-M12-GSWD-1-4 |  | TPE-U(PU)                               |  |
| Insulating sheath   | SIM               |  | PVC                                     |  |
| Union nut           | SIM               |  | Nickel-plated brass                     |  |
| Cable sheath        | SIM               |  | TPE-U(PU)                               |  |
|                     | KM12-M12-GSGD-2,5 |  | PUR                                     |  |
|                     | KM12-M12-GSGD-5   |  | PUR                                     |  |
|                     | KM12-M12-GSWD-1-4 |  | TPE-U(PU)                               |  |
| Note on materials   | SIM               |  | RoHS-compliant, free of copper and PTFE |  |

## Operating and environmental conditions

|  |          |      |   |  |
|--|----------|------|---|--|
| Ambient temperature                                  | SIM      | [°C] | -25 ... +70                                 |  |
|  | KM12-M12 | [°C] | -30 ... +70                                 |  |
| Ambient temperature with flexible cable installation |          |      | [°C] -5 ... +70                             |  |
| CE marking (see declaration of conformity)           | SIM      |      | In accordance with EU Low Voltage Directive |  |
| Degree of contamination                              | SIM      |      | 3   |  |



## Circuitry (socket view)

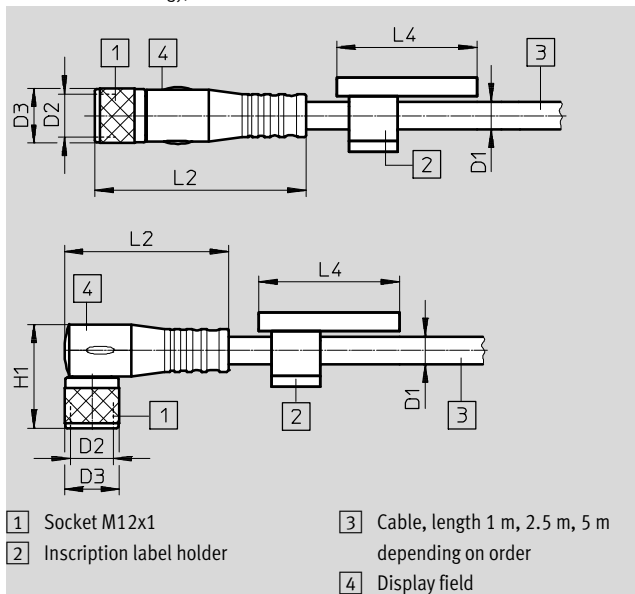
| Socket  | Pin | Wire colour <sup>1)</sup> | Pin | Plug  |
|---|-----|---------------------------|-----|---|
| Electrical connection: socket, 4-pin, M12 – open cable end                        |     |                           |     |   |
|  | 1   | BN                        | -   | -   |
|   | 2   | WH                        | -   |   |
|   | 3   | BU                        | -   |   |
|   | 4   | BK                        | -   |   |
|   | 5   | -                         | -   |   |
| Electrical connection: socket, 4-pin, M12 – plug, 4-pin                           |     |                           |     |   |
|  | 1   | BN                        | 1   |  |
|   | 2   | WH                        | 2   |   |
|   | 3   | BU                        | 3   |   |
|   | 4   | BK                        | 4   |   |

1) To IEC 757

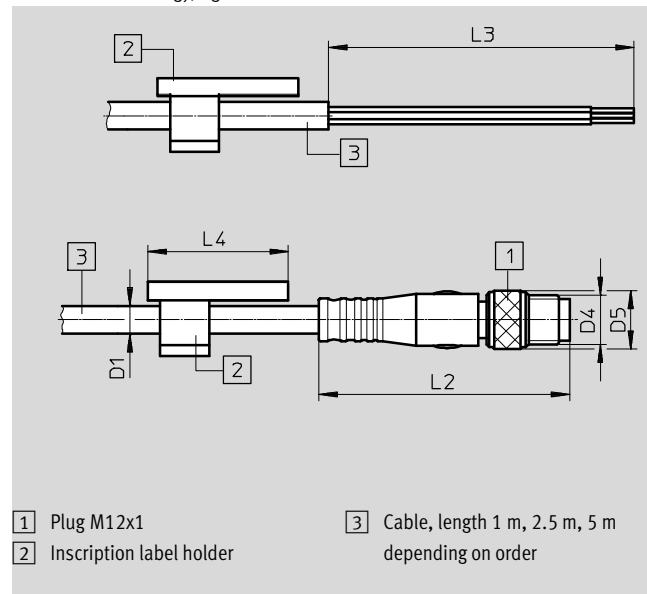
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

### Connection technology, left-hand end



### Connection technology, right-hand end



| Connection technology, left-hand end | D1<br>∅ | D2    | D3<br>∅ | L2   | L4 | H1 |
|--------------------------------------|---------|-------|---------|------|----|----|
| SIM                                  |         |       |         |      |    |    |
| Straight socket                      | 4.5     | M12x1 | 15      | 48.5 | -  | -  |
| Angled socket                        | 4.5     | M12x1 | -       | 37.5 | -  | 26 |
| KM12-M12                             |         |       |         |      |    |    |
| Straight socket                      | -       | M12x1 | 14      | 40.3 | -  | -  |
| Angled socket                        | -       | M12x1 | 14      | 38.5 | -  | -  |

| Connection technology, right-hand end | D1<br>∅ | D4    | D5<br>∅ | L2 | L3 | L4 |
|---------------------------------------|---------|-------|---------|----|----|----|
| SIM                                   |         |       |         |    |    |    |
| Open end                              | 4.5     | -     | -       | -  | 50 | -  |
| KM12-M12                              |         |       |         |    |    |    |
| Straight plug                         | -       | M12x1 | 14      | 46 | -  | -  |

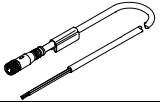
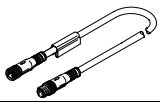
# Universal connecting cables

SIM-M12-4/KM12-M12 M12 4-pin – Technical data

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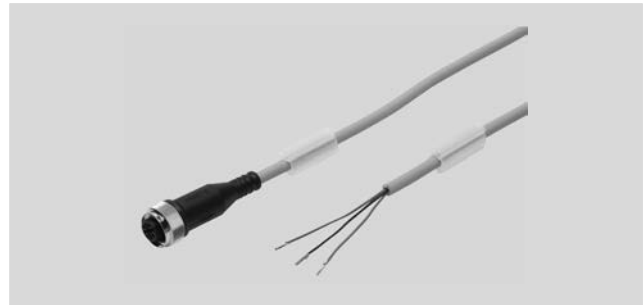
1

## Ordering data

|   | Cable length [m] | Cable characteristics | Outlet direction    | Special features | Part No.      | Type                     |
|---|------------------|-----------------------|---------------------|------------------|---------------|--------------------------|
| <b>Socket, 3-pin, M12 – open cable end</b>  |                  |                       |                     |                  |               |                          |
|  | 5                | Standard              | Straight – straight | –                | <b>164259</b> | <b>SIM-M12-4GD-5-PU</b>  |
|   |                  |                       | Angled – straight   | –                | <b>164258</b> | <b>SIM-M12-4WD-5-PU</b>  |
| <b>Socket, 3-pin, M12 – plug, 4-pin, M12</b>                                      |                  |                       |                     |                  |               |                          |
|  | 1                | –                     | Straight – straight | –                | <b>185499</b> | <b>KM12-M12-GSWD-1-4</b> |
|   | 2.5              | –                     | Straight – straight | –                | <b>18684</b>  | <b>KM12-M12-GSGD-2,5</b> |
|   | 5                | –                     | Straight – straight | –                | <b>18686</b>  | <b>KM12-M12-GSGD-5</b>   |

**Connecting cable**  
**NEBU-M12**  
**SIM-M12**

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled at both ends
- Cable lengths 0.1 ... 30 m
- 5 wires
- M12



## General technical data

|                                 |                          |                                     |   |  |
|---------------------------------|--------------------------|-------------------------------------|---|--|
| Conforms to standard            |                          | EN 61076-2-101                      |   |  |
|                                 |                          | EN 61984                            |   |  |
|                                 |                          | EN 61076-2-104                      |   |  |
| Cable composition               | 2-wire                   | [mm <sup>2</sup> ]                  | 2x 0.25   |  |
|                                 | 3-wire                   | [mm <sup>2</sup> ]                  | 3x 0.25   |  |
|                                 | 4-wire                   | [mm <sup>2</sup> ]                  | 4x 0.25   |  |
|                                 | 5-wire                   | [mm <sup>2</sup> ]                  | 5x 0.25   |  |
|                                 | NEBU-M12G5-F-0.2-M12G4   | [mm <sup>2</sup> ]                  | 4x 0.34   |  |
|                                 | NEBU-M12G5-...-Q8N-M12G5 | [mm <sup>2</sup> ]                  | 5x 1  |  |
| Cable diameter                  | NEBU/SIM                 | With display code L                 | [mm]  | 3.4  |
|                                 |                          | Without display                     | [mm]  | 4.5  |
|                                 | NEBU-M12G5-F-0.2-M12G4   | [mm]                                | 5.2   |  |
|                                 | NEBU-M12G5-...-Q8N-M12G5 | [mm]                                | 7   |  |
| Nominal conductor cross section | NEBU/SIM                 | [mm <sup>2</sup> ]                  | 0.25  |  |
|                                 | NEBU-M12G5-F-0.2-M12G4   | [mm <sup>2</sup> ]                  | 0.34  |  |
|                                 | NEBU-M12G5-...-Q8N-M12G5 | [mm <sup>2</sup> ]                  | 1   |  |
| Cable characteristics           | NEBU                     | Code -P-                            |   | Basic  |
|                                 |                          | Code -K-                            |   | Standard   |
|                                 |                          | Code -E-                            |   | Suitable for use with energy chains                  |
|                                 |                          | Code -R-                            |   | Suitable for robot applications                      |
|                                 | SIM                      |                                     | Standard  |  |
| Cable test conditions           |                          |                                     |   | Resistance to bending: to Festo standard             |
|                                 |                          |                                     |   | Test conditions on request                           |
|                                 | Cable characteristics    | Basic                               |   | –  |
|                                 |                          | Standard                            |   | Energy chain: 5 million cycles, bending radius 75 mm |
|                                 |                          | Suitable for use with energy chains |   | Energy chain: 5 million cycles, bending radius 28 mm |
| Suitable for robot applications |                          |                                     | Torsional strength greater than 300,000 cycles, ±270°/0.1 m |  |

## Technical data

|                              |  |                                |     |              |                   |
|------------------------------|--|--------------------------------|-----|--------------|-------------------|
| Operating voltage range      | NEBU/SIM   | With plug M8                   | [V] | 0 ... 30 DC  | 0 ... 30 AC       |
|                              |  | 3-wire, 4-wire                 | [V] | 0 ... 250 DC | 0 ... 250 AC      |
|                              |  | 5-wire                         | [V] | 0 ... 60 DC  | 0 ... 60 AC       |
|                              |  | With display code -P-, N or P2 | [V] | 10 ... 30 DC | –                 |
| Acceptable current load      | NEBU/SIM   | Other types                    | [A] | 4            |                   |
|                              |  | With plug M8                   | [A] | 3            |                   |
| Surge resistance             |  |                                |     | [kV]         | 1.5               |
|                              | With plug M8, 4-pin or with switching status display |                                |     | [kV]         | 0.8               |
|                              | With open cable end, 3-pin or 4-pin                  |                                |     | [kV]         | 2.5               |
|                              | NEBU-M12G5-F-0.2-M12G4                               |                                |     | [kV]         | –                 |
| Protection class to EN 60529 | SIM  |                                |     |              | IP65, IP68        |
|                              | NEBU   |                                |     |              | IP65, IP68, IP69K |
|                              | NEBU-M12G5-F-0.2-M12G4                               |                                |     |              | IP65, IP67        |

## Materials

|                     |  |                                 |
|---------------------|--|---------------------------------|
| Wire colour         |  | Blue, brown, black, white, grey |
| Housing colour      |  | Black                           |
| Cable sheath colour |  | Grey                            |
| Housing             |  | TPE-U(PU)                       |
| Insulating sheath   | Cable characteristics: standard, suitable for energy chains and robot applications | PP                              |
|                     | Cable characteristics: basic, standard   | PVC-P                           |
|                     | NEBU-M12G5-F-0.2-M12G4   | –                               |
| Union nut           | NEBU/SIM   | Nickel-plated brass             |
|                     | NEBU-M12G5-F-0.2-M12G4   | Die-cast zinc                   |
| Cable sheath        | Cable characteristics: standard, suitable for energy chains and robot applications | TPE-U(PU)                       |
|                     | Cable characteristics: basic   | PVC                             |
|                     | NEBU-M12G5-F-0.2-M12G4   | PVC                             |
| Note on materials   | NEBU/SIM   | RoHS-compliant                  |
|                     | Cable characteristics: suitable for energy chains and robot applications           | Halogen-free                    |
|                     | NEBU-M12G5-F-0.2-M12G4   | –                               |
| Special features    | Cable characteristics: suitable for energy chains and robot applications           | Oil-resistant                   |

## Operating and environmental conditions

|  |   |   |   |
|--|---|---|---|
| Ambient temperature                                  | Cable characteristics: basic, standard  | [°C]  | –25 ... +70                                 |
|  | Cable characteristics: suitable for energy chains and robot applications        | [°C]  | –25 ... +80                                 |
|  | NEBU-M12G5-F-0.2-M12G4  | [°C]  | –5 ... +70                                  |
| Ambient temperature with flexible cable installation | Cable characteristics: standard   | [°C]  | –5 ... +70                                  |
|  | Cable characteristics: basic, suitable for energy chains and robot applications | [°C]  | –5 ... +80                                  |
| CE marking (see declaration of conformity)           | NEBU  | With switching status display               | In accordance with EU Low Voltage Directive |
|  |   | Without switching status display            | –   |
|  |   | With plug M8, 4-pin                         | –   |
|  | NEBU-M12G5-F-0.2-M12G4  |   | –   |
|  | NEBU-M12G5-...-Q8N-M12G5  |   | In accordance with EU Low Voltage Directive |
| SIM  |   | In accordance with EU Low Voltage Directive |   |
| Degree of contamination                              | NEBU/SIM  |   | 3   |
|  | NEBU-M12G5-F-0.2-M12G4  |   | –   |

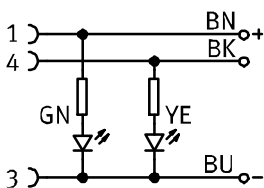
## Circuitry (socket view)

| Socket  | Pin | Wire colour <sup>1)</sup> | Pin    | Plug   |   |
|---|-----|---------------------------|--------|--------|---|
| Electrical connection: socket, 5-pin, M12 – open cable end                    |     |                           |        |        |   |
|   |     | 3-wire                    | 4-wire | 5-wire |   |
|   | 1   | BN                        | BN     | BN     | - |
|   | 2   | -                         | WH     | WH     | - |
|   | 3   | BU                        | BU     | BU     | - |
|   | 4   | BK                        | BK     | BK     | - |
| 5   | -   | -                         | -      | GY     | - |
| Electrical connection: socket, 5-pin, M12 – cable, 2-wire – plug, 4-pin       |     |                           |        |        |   |
|   | 1   |                           | BN     | 1      |   |
|   | 2   |                           | -      | -      |   |
|   | 3   |                           | BU     | 2      |   |
|   | 4   |                           | -      | -      |   |
|   | 5   |                           | -      | -      |   |
| Electrical connection: socket, 5-pin, M12 – cable, 3-wire – plug, 3-pin/4-pin |     |                           |        |        |   |
|   | 1   |                           | BN     | 1      |   |
|   | 2   |                           | -      | -      |   |
|   | 3   |                           | BU     | 3      |   |
|   | 4   |                           | BK     | 4      |   |
|   | 5   |                           | -      | -      |   |
| Electrical connection: socket, 5-pin, M12 – plug, 4-pin                       |     |                           |        |        |   |
|   | 1   |                           | BN     | 1      |   |
|   | 2   |                           | WH     | 2      |   |
|   | 3   |                           | BU     | 3      |   |
|   | 4   |                           | BK     | 4      |   |
|   | 5   |                           | -      | -      |   |
| Electrical connection: socket, 5-pin, M12 – plug, 5-pin                       |     |                           |        |        |   |
|   | 1   |                           | BN     | 1      |   |
|   | 2   |                           | WH     | 2      |   |
|   | 3   |                           | BU     | 3      |   |
|   | 4   |                           | BK     | 4      |   |
|   | 5   |                           | GY     | 5      |   |

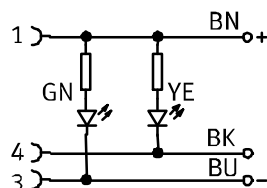
1) To IEC 757

## Circuitry – Switching status display

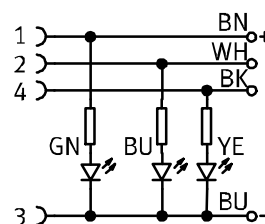
Display code -P-



Display code N



Display code -P-2



# Universal connecting cables

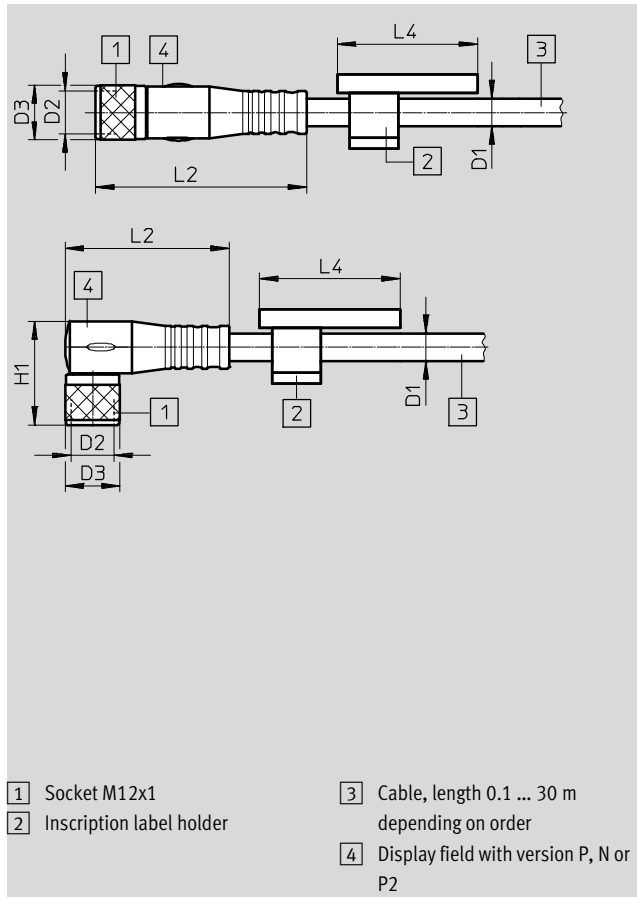
NEBU-M12/SIM-M12, M12 5-pin – Technical data

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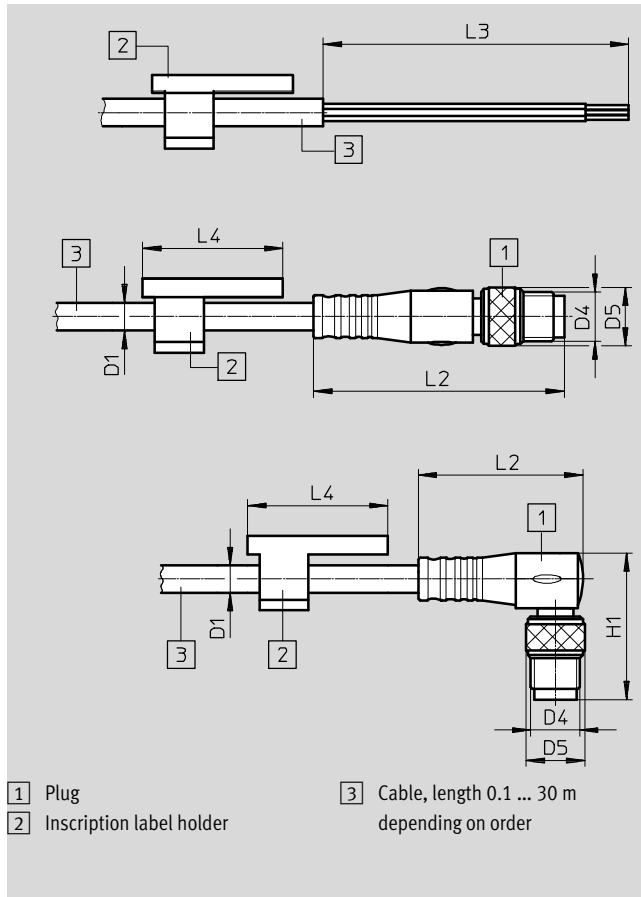
Download CAD data → [www.festo.com](http://www.festo.com)

## Dimensions

Connection technology, left-hand end



Connection technology, right-hand end

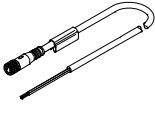
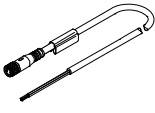
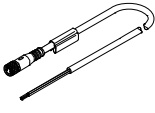
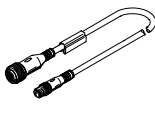
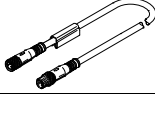
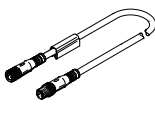


| Connection technology, left-hand end | D1<br>Ø | D2    | D3<br>Ø | L2   | L4 | H1 |
|--------------------------------------|---------|-------|---------|------|----|----|
| <b>NEBU</b>                          |         |       |         |      |    |    |
| Straight socket                      | 4.5     | M12x1 | 15      | 47.5 | 23 | –  |
| Angled socket                        | 4.5     | M12x1 | 15      | 37.5 | 23 | 26 |
| <b>NEBU with display</b>             |         |       |         |      |    |    |
| Angled socket                        | 4.5     | M12x1 | 15      | 37.5 | 23 | 26 |
| <b>NEBU-M12G5-F-0.2-M12G4</b>        |         |       |         |      |    |    |
| Straight socket                      | 5.2     | M12x1 | 15      | 47.5 | –  | –  |
| <b>NEBU-M12G5-...-Q8N-M12G5</b>      |         |       |         |      |    |    |
| Straight socket                      | 7       | M12x1 | 15      | 47.5 | –  | –  |
| <b>SIM</b>                           |         |       |         |      |    |    |
| Straight socket                      | 4.5     | M12x1 | 15      | 48.5 | –  | –  |

| Connection technology, right-hand end | D1<br>Ø | D4    | D5<br>Ø | L2   | L3 | L4 | H1   |
|---------------------------------------|---------|-------|---------|------|----|----|------|
| <b>NEBU</b>                           |         |       |         |      |    |    |      |
| Open end                              | 4.5     | –     | –       | –    | 50 | 23 | –    |
| Straight plug                         | 4.5     | M8x1  | 9.6     | 41.1 | –  | 23 | –    |
|                                       | 4.5     | M12x1 | 15      | 54.5 | –  | 23 | –    |
| Angled plug                           | 4.5     | M8x1  | 9.6     | 26.9 | –  | 23 | 24   |
|                                       | 4.5     | M12x1 | 15      | 37.5 | –  | 23 | 33.2 |
| <b>NEBU with display</b>              |         |       |         |      |    |    |      |
| Open end                              | 4.5     | –     | –       | –    | 50 | 23 | –    |
| Straight plug                         | 4.5     | M8x1  | 9       | 41.1 | –  | 23 | –    |
|                                       | 4.5     | M12x1 | 15      | 54.5 | –  | 23 | –    |
| Angled plug                           | 4.5     | M8x1  | 9       | 26.9 | –  | 23 | 24   |
|                                       | 4.5     | M12x1 | 15      | 37.5 | –  | 23 | 33.2 |
| <b>NEBU-M12G5-F-0.2-M12G4</b>         |         |       |         |      |    |    |      |
| Straight plug                         | 5.2     | M12x1 | 15      | 54.5 | –  | –  | –    |
| <b>NEBU-M12G5-...-Q8N-M12G5</b>       |         |       |         |      |    |    |      |
| Straight plug                         | 7       | M12x1 | 15      | 54.5 | –  | –  | –    |
| <b>SIM</b>                            |         |       |         |      |    |    |      |
| Open end                              | 4.5     | –     | –       | –    | 50 | –  | –    |

1

## Ordering data

|   | Cable length [m] | Cable characteristics               | Outlet direction                              | Special features  | Part No.                                      | Type                        |                             |
|---|------------------|-------------------------------------|---|---|---|-----------------------------|-----------------------------|
| <b>Socket, 5-pin, M12 – open cable end, 3-wire</b>                                  |                  |                                     |   |   |   |                             |                             |
|    | 2.5              | Standard                            | Straight – straight                           | –   | 541363  | NEBU-M12G5-K-2.5-LE3        |                             |
|   |                  |                                     |   | Switching status display, for PNP N/O contact                     | 541366  | NEBU-M12W5P-K-2.5-LE3       |                             |
|   |                  |                                     | Angled – straight                             | –   | 541367  | NEBU-M12W5-K-2.5-LE3        |                             |
|   |                  |                                     |   | Switching status display, for NPN N/O contact                     | 541365  | NEBU-M12W5N-K-2.5-LE3       |                             |
|   | 5                | Standard                            | Straight – straight                           | –   | 541364  | NEBU-M12G5-K-5-LE3          |                             |
|   |                  |                                     |   | –   | 541370  | NEBU-M12W5-K-5-LE3          |                             |
| Angled – straight   |                  |                                     | Switching status display, for NPN N/O contact | 541368  | NEBU-M12W5N-K-5-LE3                           |                             |                             |
|   |                  |                                     | Switching status display, for PNP N/O contact | 541369  | NEBU-M12W5P-K-5-LE3                           |                             |                             |
| <b>Socket, 5-pin, M12 – open cable end, 4-wire</b>                                  |                  |                                     |   |   |   |                             |                             |
|   | 2.5              | Standard                            | Straight – straight                           | –   | 550326  | NEBU-M12G5-K-2.5-LE4        |                             |
|   |                  |                                     | Angled – straight                             | –   | 550325  | NEBU-M12W5-K-2.5-LE4        |                             |
|   | 5                | Standard                            | Straight – straight                           | –   | 541328  | NEBU-M12G5-K-5-LE4          |                             |
|   |                  |                                     | Angled – straight                             | –   | 541329  | NEBU-M12W5-K-5-LE4          |                             |
|   | 7                | Standard                            | Straight – straight                           | –   | 8003134                                       | NEBU-M12G5-K-7-LE4          |                             |
|   | 10               | Standard                            | Angled – straight                             | –   | 569841  | NEBU-M12W5-K-10-LE4         |                             |
| <b>Socket, 5-pin, M12 – open cable end, 5-wire</b>                                  |                  |                                     |   |   |   |                             |                             |
|  | 2.5              | Standard                            | Straight – straight                           | –   | 541330  | NEBU-M12G5-K-2.5-LE5        |                             |
|   |                  |                                     |   | –   | 175715  | SIM-M12-5GD-2,5-PU          |                             |
|   |                  |                                     | Angled – straight                             | –   | 567843  | NEBU-M12W5-K-2.5-LE5        |                             |
|   | 5                | Standard                            | Straight – straight                           | –   | 541331  | NEBU-M12G5-K-5-LE5          |                             |
|   |                  |                                     |   | –   | 175716  | SIM-M12-5GD-5-PU            |                             |
|   |                  |                                     | Angled – straight                             | –   | 567844  | NEBU-M12W5-K-5-LE5          |                             |
| 10  | Standard         | Straight – straight                 | –   | 554038  | NEBU-M12G5-K-10-LE5                           |                             |                             |
| <b>Socket, 5-pin, M12 – plug, 4-pin, M8</b>   |                  |                                     |   |   |   |                             |                             |
|  | 2.5              | Standard                            | Straight – straight                           | –   | 554036  | NEBU-M12G5-K-2.5-M8G4       |                             |
|   |                  |                                     | Suitable for use with energy chains           | Straight – straight   | Cable, 2-wire, halogen-free and oil-resistant | 554034                      | NEBU-M12G5-E-2.5-W2-M8G4-V1 |
|   |                  |                                     | Straight – straight                           | Cable, 3-wire, halogen-free and oil-resistant                     | 554033  | NEBU-M12G5-E-2.5-W3-M8G4-V2 |                             |
| <b>Socket, 5-pin, M12 – plug, 4-pin, M12</b>  |                  |                                     |   |   |   |                             |                             |
|  | 0.15             | Standard                            | Straight – straight                           | –   | 542129  | NEBU-M12G5-F-0.2-M12G4      |                             |
|   | 0.5              | Standard                            | Straight – straight                           | –   | 8000208                                       | NEBU-M12G5-K-0.5-M12G4      |                             |
| <b>Socket, 5-pin, M12 – plug, 5-pin, M12</b>  |                  |                                     |   |   |   |                             |                             |
|  | 0.5              | Standard                            | Straight – angled                             | –   | 8003617                                       | NEBU-M12G5-K-0.5-M12W5      |                             |
|   |                  |                                     | Angled – angled                               | –   | 570733  | NEBU-M12W5-K-0.5-M12W5      |                             |
|   | 2                | Standard                            | Straight – angled                             | –   | 8003618                                       | NEBU-M12G5-K-2-M12W5        |                             |
|   |                  |                                     | Angled – angled                               | –   | 570734  | NEBU-M12W5-K-2-M12W5        |                             |
|   | 5                | Suitable for use with energy chains | Straight – straight                           | Nominal conductor cross section 1 mm <sup>2</sup> , oil-resistant | 574321  | NEBU-M12G5-E-5-Q8N-M12G5    |                             |
|   | 7.5              | Suitable for use with energy chains | Straight – straight                           | Nominal conductor cross section 1 mm <sup>2</sup> , oil-resistant | 574322  | NEBU-M12G5-E-7.5-Q8N-M12G5  |                             |
|   | 10               | Suitable for use with energy chains | Straight – straight                           | Nominal conductor cross section 1 mm <sup>2</sup> , oil-resistant | 574323  | NEBU-M12G5-E-10-Q8N-M12G5   |                             |

# Universal connecting cables

NEBU-M12/SIM-M12-8/KM12-8, M12 8-pin – Technical data

FESTO

1

## Connecting cable

NEBU-M12

SIM-M12-8

KM12-8

- Pre-assembled at both ends
- Cable lengths 2 m, 5 m and 10 m
- 8 wires
- M12



## General technical data

|                           |                  |                    |                                       |  |
|---------------------------|------------------|--------------------|---------------------------------------|--|
| Cable composition         | NEBU             | [mm <sup>2</sup> ] | 8x 0.25, screened                     |  |
|                           | SIM/KM12         | [mm <sup>2</sup> ] | 8x 0.25                               |  |
| Cable diameter            | KM12             | [mm]               | 6.2                                   |  |
| Wire ends                 | NEBU             |                    | Tinned                                |  |
| Type of mounting          | SIM-M12-8GD-5-PU |                    | Via union nut                         |  |
|                           | KM12-8GD8GS-2-PU |                    | Via union nut, via threaded connector |  |
| Min. cable bending radius | NEBU             | [mm]               | 66                                    |  |

## Technical data

|                              |                  |     |             |             |
|------------------------------|------------------|-----|-------------|-------------|
| Operating voltage range      | NEBU             | [V] | 0 ... 36 DC | 0 ... 30 AC |
|                              | SIM              | [V] | 0 ... 70 DC | 0 ... 45 AC |
|                              | KM12             | [V] | 0 ... 30 DC | 0 ... 30 AC |
| Acceptable current load      |                  | [A] | 1.5         |             |
|                              | SIM-M12-8GD-5-PU | [A] | 4           |             |
| Protection class to EN 60529 | NEBU             |     | IP67        |             |
|                              | SIM/KM12         |     | IP68        |             |

## Materials

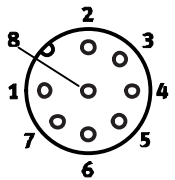
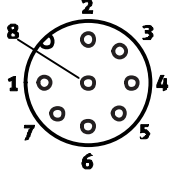
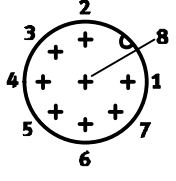
|                     |                                    |  |                                      |  |
|---------------------|------------------------------------|--|--------------------------------------|--|
| Cable sheath colour | SIM-M12-8GD-2-PU/SIM-M12-8GD-10-PU |  | Grey                                 |  |
| Housing             | NEBU/SIM-M12-8GD-5-PU              |  | PUR                                  |  |
| Union nut           | KM12                               |  | Nickel-plated brass                  |  |
| Cable sheath        |                                    |  | PUR                                  |  |
|                     | SIM-M12-8GD-5-PU                   |  | -                                    |  |
| Pin contacts        | KM12                               |  | Nickel-plated and gold-plated bronze |  |
| Note on materials   | NEBU-M12W8-K-10-N-LE8              |  | RoHS-compliant                       |  |
|                     | SIM-M12-8GD-10-PU                  |  | RoHS-compliant                       |  |

## Operating and environmental conditions

|                     |          |      |             |  |
|---------------------|----------|------|-------------|--|
| Ambient temperature | NEBU     | [°C] | -25 ... +90 |  |
|                     | SIM/KM12 | [°C] | -25 ... +80 |  |



Circuitry (socket view)

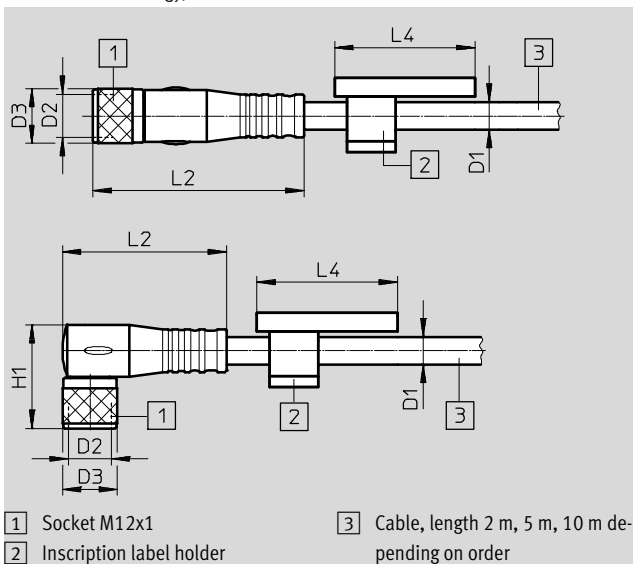
| Socket  | Pin | Wire colour <sup>1)</sup> | Pin | Plug  |
|---|-----|---------------------------|-----|---|
| Electrical connection: socket, 8-pin, M12 – open cable end                        |     |                           |     |   |
|  | 1   | WH                        | -   | -   |
|   | 2   | BN                        | -   |   |
|   | 3   | GN                        | -   |   |
|   | 4   | YE                        | -   |   |
|   | 5   | GY                        | -   |   |
|   | 6   | PK                        | -   |   |
|   | 7   | BU                        | -   |   |
|   | 8   | RD                        | -   |   |
| Electrical connection: socket, 8-pin, M12 – plug, 8-pin                           |     |                           |     |   |
|  | 1   | WH                        | 1   |  |
|   | 2   | BN                        | 2   |   |
|   | 3   | GN                        | 3   |   |
|   | 4   | YE                        | 4   |   |
|   | 5   | GY                        | 5   |   |
|   | 6   | PK                        | 6   |   |
|   | 7   | BU                        | 7   |   |
|   | 8   | RD                        | 8   |   |

1) To IEC 757

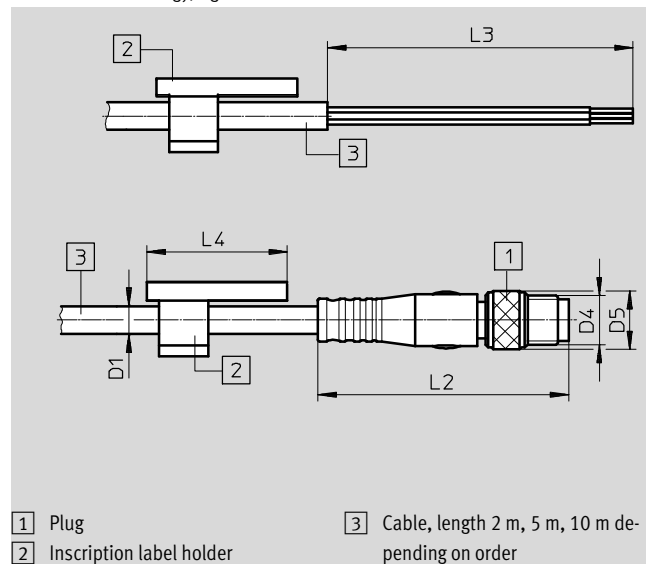
Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Connection technology, left-hand end



Connection technology, right-hand end



| Connection technology, left-hand end | D1  | D2    | D3   | L2 | L4 | H1 |
|--------------------------------------|-----|-------|------|----|----|----|
| NEBU                                 |     |       |      |    |    |    |
| Angled socket                        | 6.6 | M12x1 | 14.5 | 38 | -  | 28 |
| SIM                                  |     |       |      |    |    |    |
| Straight socket                      | 6.2 | M12x1 | 14.6 | -  | -  | -  |
| KM12                                 |     |       |      |    |    |    |
| Straight socket                      | 6.2 | M12x1 | -    | -  | -  | -  |

| Connection technology, right-hand end | D1  | D4    | D5   | L2 | L3 | L4 |
|---------------------------------------|-----|-------|------|----|----|----|
| NEBU                                  |     |       |      |    |    |    |
| Open end                              | 6.6 | -     | -    | -  | 50 | -  |
| SIM                                   |     |       |      |    |    |    |
| Open end                              | 6.2 | -     | -    | -  | 50 | -  |
| KM12                                  |     |       |      |    |    |    |
| Straight plug                         | 6.2 | M12x1 | 14.6 | -  | -  | -  |

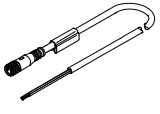
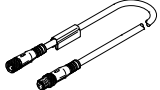
# Universal connecting cables

NEBU-M12/SIM-M12-8/KM12-8, M12 8-pin – Technical data

FESTO

1

## Ordering data

|   | Cable length [m] | Outlet direction    | Special features | Product weight [g] | Part No.      | Type                        |                              |
|---|------------------|---------------------|------------------|--------------------|---------------|-----------------------------|------------------------------|
| <b>Socket, 8-pin, M12 – open cable end, 8-wire</b>                                |                  |                     |                  |                    |               |                             |                              |
|  | 2                | Angled – straight   | Screened         | –                  | <b>542256</b> | <b>NEBU-M12W8-K-2-N-LE8</b> |                              |
|   |                  | Straight – straight | –                | –                  | <b>525616</b> | <b>SIM-M12-8GD-2-PU</b>     |                              |
|   | 5                | Angled – straight   | Screened         | –                  | –             | <b>542257</b>               | <b>NEBU-M12W8-K-5-N-LE8</b>  |
|   |                  | Straight – straight | –                | –                  | 343           | <b>525618</b>               | <b>SIM-M12-8GD-5-PU</b>      |
|   | 10               | Angled – straight   | Screened         | –                  | –             | <b>570007</b>               | <b>NEBU-M12W8-K-10-N-LE8</b> |
|   |                  | Straight – straight | –                | –                  | –             | <b>570008</b>               | <b>SIM-M12-8GD-10-PU</b>     |
| <b>Socket, 8-pin, M12 – plug, 8-pin, M12</b>                                      |                  |                     |                  |                    |               |                             |                              |
|  | 2                | Straight – straight | –                | 156                | <b>525617</b> | <b>KM12-8GD8GS-2-PU</b>     |                              |

**Connecting cable**  
**NEBU-G78W5**

- Connecting cable for power supply
- Pre-assembled
- Cable length 2 m
- 5 wires
- 7/8"



1

## General technical data

|                                  |                           |                             |
|----------------------------------|---------------------------|-----------------------------|
| Electrical connection            | Angled socket/open end    |                             |
|                                  | 7/8" round plug connector |                             |
|                                  | 5-pin                     |                             |
| Plug coding                      | NFPA/T3.5.29 R1-2003      |                             |
| Based on standard                | EN 61984                  |                             |
| Cable composition                | [mm <sup>2</sup> ]        | 5x 1.5                      |
| Cable diameter                   | [mm]                      | 8.7                         |
| Cable diameter tolerance         | [mm]                      | ±2                          |
| Cable characteristics            | Standard                  |                             |
| Min. cable bending radius        | [mm]                      | 65                          |
| Operating voltage range          | [V]                       | 0 ... 300 DC   0 ... 300 AC |
| Surge resistance                 | [kV]                      | 4                           |
| Acceptable current load at 40 °C | [A]                       | 9                           |
| Protection class to EN 60529     | IP65, IP67                |                             |
| Product weight                   | [g]                       | 300                         |

## Materials

|                       |                         |
|-----------------------|-------------------------|
| Housing               | TPE-U(PU)               |
| Union nut             | Nickel-plated brass     |
| Pin contact           | Gold-plated brass       |
| Cable sheath          | PUR                     |
| Cable characteristics | For static applications |
| Note on materials     | RoHS-compliant          |

## Operating and environmental conditions

|  |   |             |
|--|---|-------------|
| Ambient temperature                        | [°C]  | -20 ... +80 |
| CE marking (see declaration of conformity) | In accordance with EU Low Voltage Directive |             |
| Degree of contamination                    | 3   |             |

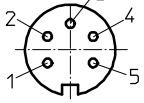
# Universal connecting cables

NEBU-G78W5, 7/8" 5-pin – Technical data

FESTO

1

## Circuitry (socket view)

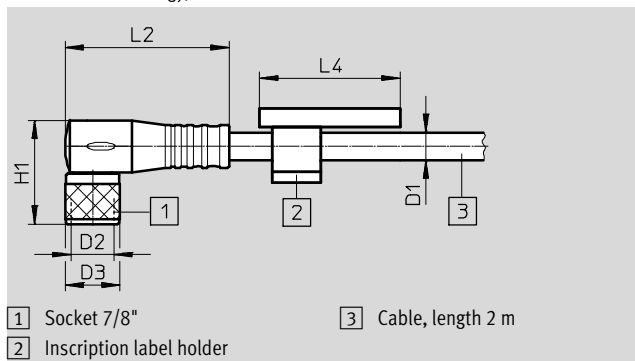
| Socket  | Pin | Wire colour <sup>1)</sup> | Pin | Plug |
|---|-----|---------------------------|-----|------|
| Electrical connection: socket, 5-pin, 7/8" – open cable end                       |     |                           |     |      |
|  | 1   | SW                        | -   | -    |
|   | 2   | BU                        | -   |      |
|   | 3   | GN/YE                     | -   |      |
|   | 4   | BN                        | -   |      |
|   | 5   | WH                        | -   |      |

1) To IEC 757

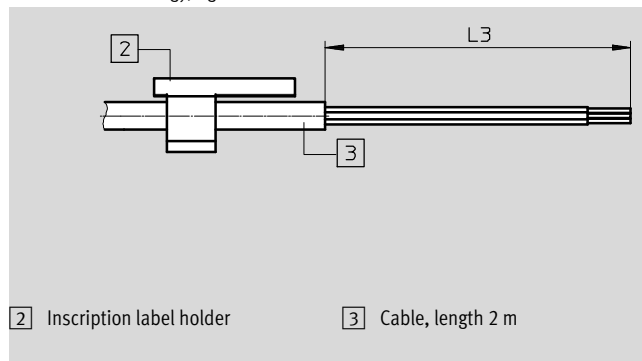
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Connection technology, left-hand end



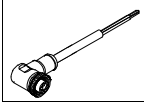
Connection technology, right-hand end



| Connection technology, left-hand end | D1  | D2   | D3 | L2 | L4 | H1   |
|--------------------------------------|-----|------|----|----|----|------|
| Angled socket                        | 8.7 | 7/8" | 26 | 53 | -  | 40.4 |

| Connection technology, right-hand end | D1  | D4 | D5 | L2 | L3 | L4 | H1 |
|---------------------------------------|-----|----|----|----|----|----|----|
| Open end                              | 4.5 | -  | -  | -  | -  | -  | -  |

## Ordering data

|   | Cable length [m] | Cable characteristics | Outlet direction  | Special features | Part No. | Type                 |
|---|------------------|-----------------------|-------------------|------------------|----------|----------------------|
| Socket, 5-pin, 7/8" – open cable end  |                  |                       |                   |                  |          |                      |
|  | 2                | Standard              | Angled – straight | -                | 573855   | NEBU-G78W5-K-2-N-LE5 |

**Connecting cable  
SIM-K**

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled
- Cable lengths 2.5 m, 5 m and 10 m
- 3 wires
- Mounting via clip



## General technical data

|                                 |  |      |
|---------------------------------|--|------|
| Conforms to standard            | EN 61076-2-104                                       |      |
|                                 | EN 61984   |      |
| Cable diameter                  | [mm]   | 4.5  |
| Nominal conductor cross section | [mm <sup>2</sup> ]                                   | 0.25 |
| Cable characteristics           | Standard   |      |
| Cable test conditions           | Resistance to bending: to Festo standard             |      |
|                                 | Test conditions on request                           |      |
|                                 | Energy chain: 5 million cycles, bending radius 75 mm |      |

## Technical data

|                              |            |             |             |
|------------------------------|------------|-------------|-------------|
| Operating voltage range      | [V]        | 0 ... 60 DC | 0 ... 60 AC |
| Acceptable current load      | [A]        | 3           |             |
| Surge resistance             | [kV]       | 1.5         |             |
| Protection class to EN 60529 | IP65, IP67 |             |             |

## Materials

|                     |                    |  |  |
|---------------------|--------------------|--|--|
| Wire colour         | Blue, brown, black |  |  |
| Housing colour      | Black              |  |  |
| Cable sheath colour | Grey               |  |  |
| Housing             | TPE-U(PU)          |  |  |
| Insulating sheath   | PVC                |  |  |
| Cable sheath        | TPE-U(PU)          |  |  |
| Note on materials   | RoHS-compliant     |  |  |

## Operating and environmental conditions

|  |   |             |
|--|---|-------------|
| Ambient temperature                                  | [°C]  | -25 ... +70 |
| Ambient temperature with flexible cable installation | [°C]  | -5 ... +70  |
| CE marking (see declaration of conformity)           | In accordance with EU Low Voltage Directive |             |
| Degree of contamination                              | 3   |             |

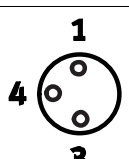
# Universal connecting cables

SIM-K, clip, 3-pin – Technical data

FESTO

1

## Circuitry (socket view)

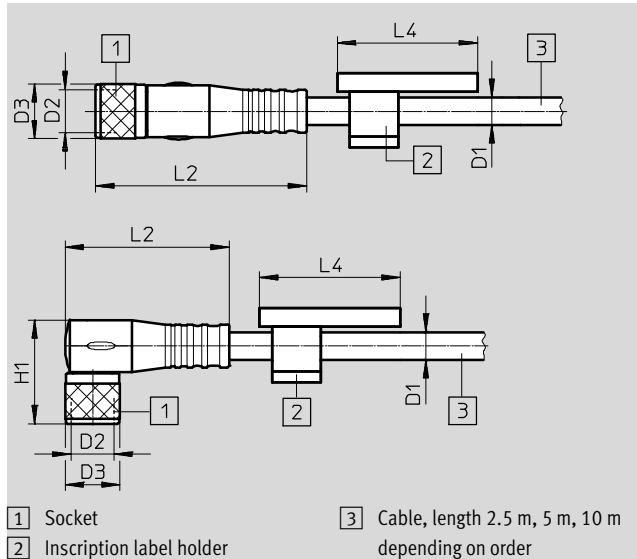
| Socket  | Pin | Wire colour <sup>1)</sup> | Pin | Plug |
|---|-----|---------------------------|-----|------|
| Electrical connection: socket, 3-pin, clip – open cable end                       |     |                           |     |      |
|  | 1   | BN                        | -   | -    |
|   | 3   | BU                        | -   |      |
|   | 4   | BK                        | -   |      |

1) To IEC 757

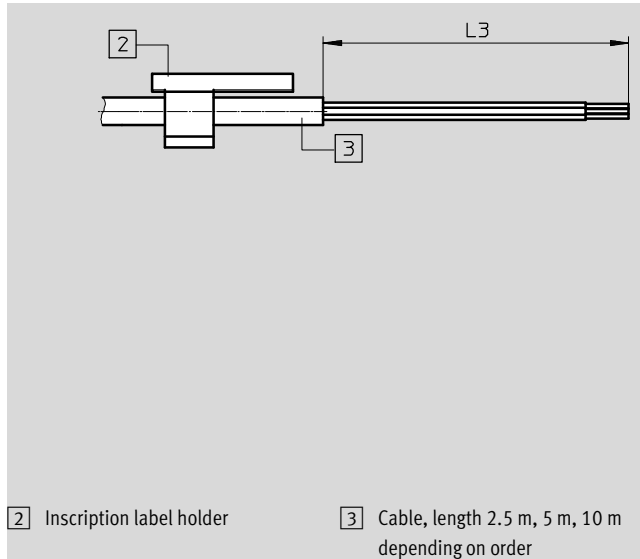
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Connection technology, left-hand end



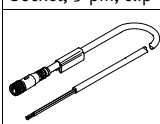
Connection technology, right-hand end



| Connection technology, left-hand end | D1  | D2  | D3  | L2   | L4 | H1   |
|--------------------------------------|-----|-----|-----|------|----|------|
|                                      | ∅   | -   | ∅   |      |    |      |
| Straight socket                      | 4.5 | -   | 8.5 | 33.6 | -  | -    |
| Angled socket                        | 4.5 | 8.3 | 8.5 | 26.1 | -  | 18.4 |

| Connection technology, right-hand end | D1  | L3 | L4 | H1 |
|---------------------------------------|-----|----|----|----|
|                                       | ∅   |    |    |    |
| Open end                              | 4.5 | 50 | -  | -  |

## Ordering data

|   | Cable length [m] | Cable characteristics | Outlet direction    | Special features | Part No. | Type            |
|---|------------------|-----------------------|---------------------|------------------|----------|-----------------|
| Socket, 3-pin, clip – open cable end  |                  |                       |                     |                  |          |                 |
|  | 2.5              | Standard              | Straight – straight | -                | 164257   | SIM-K-GD-2,5-PU |
|   |                  |                       | Angled – straight   | -                | 164255   | SIM-K-WD-2,5-PU |
|   | 5                | Standard              | Straight – straight | -                | 164256   | SIM-K-GD-5-PU   |
|   |                  |                       | Angled – straight   | -                | 164254   | SIM-K-WD-5-PU   |
|   | 10               | Standard              | Straight – straight | -                | 192962   | SIM-K-GD-10-PU  |
|   |                  |                       | Angled – straight   | -                | 192963   | SIM-K-WD-10-PU  |

**Connecting cable  
SIM-K**

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled
- Cable lengths 2.5 m and 5 m
- 4 wires
- Mounting via clip



## General technical data

|                                 |  |      |
|---------------------------------|--|------|
| Conforms to standard            | EN 61076-2-104                                       |      |
|                                 | EN 61984   |      |
| Cable diameter                  | [mm]   | 4.5  |
| Nominal conductor cross section | [mm <sup>2</sup> ]                                   | 0.25 |
| Cable characteristics           | Standard   |      |
| Cable test conditions           | Resistance to bending: to Festo standard             |      |
|                                 | Test conditions on request                           |      |
|                                 | Energy chain: 5 million cycles, bending radius 75 mm |      |

## Technical data

|                              |            |             |             |
|------------------------------|------------|-------------|-------------|
| Operating voltage range      | [V]        | 0 ... 30 DC | 0 ... 30 AC |
| Acceptable current load      | [A]        | 3           |             |
| Surge resistance             | [kV]       | 0.8         |             |
| Protection class to EN 60529 | IP65, IP67 |             |             |

## Materials

|                     |                           |
|---------------------|---------------------------|
| Wire colour         | Blue, brown, black, white |
| Housing colour      | Black                     |
| Cable sheath colour | Grey                      |
| Housing             | TPE-U(PU)                 |
| Insulating sheath   | PVC                       |
| Cable sheath        | TPE-U(PU)                 |
| Note on materials   | RoHS-compliant            |

## Operating and environmental conditions

|  |      |             |
|--|------|-------------|
| Ambient temperature                                  | [°C] | -25 ... +70 |
| Ambient temperature with flexible cable installation | [°C] | -5 ... +70  |
| Degree of contamination                              | 3    |             |

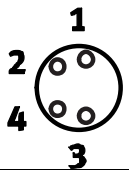
# Universal connecting cables

SIM-K, clip, 4-pin – Technical data

FESTO

1

## Circuitry (socket view)

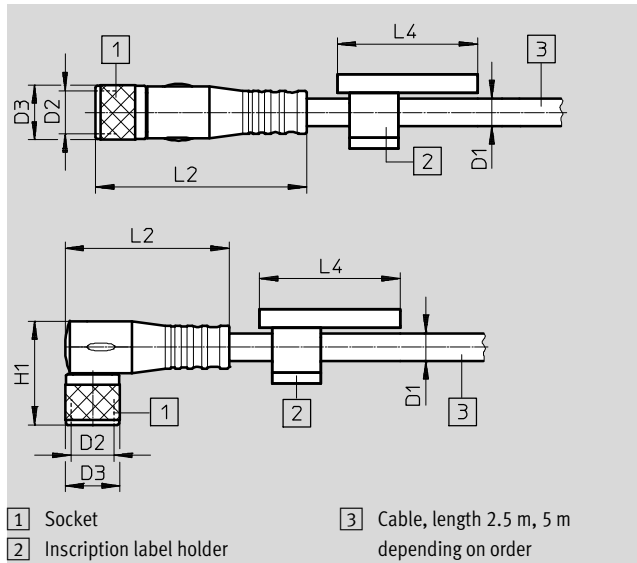
| Socket  | Pin | Wire colour <sup>1)</sup> | Pin | Plug |
|---|-----|---------------------------|-----|------|
| Electrical connection: socket, 4-pin, clip – open cable end                       |     |                           |     |      |
|  | 1   | BN                        | -   | -    |
|   | 2   | WH                        | -   | -    |
|   | 3   | BU                        | -   | -    |
|   | 4   | BK                        | -   | -    |

1) To IEC 757

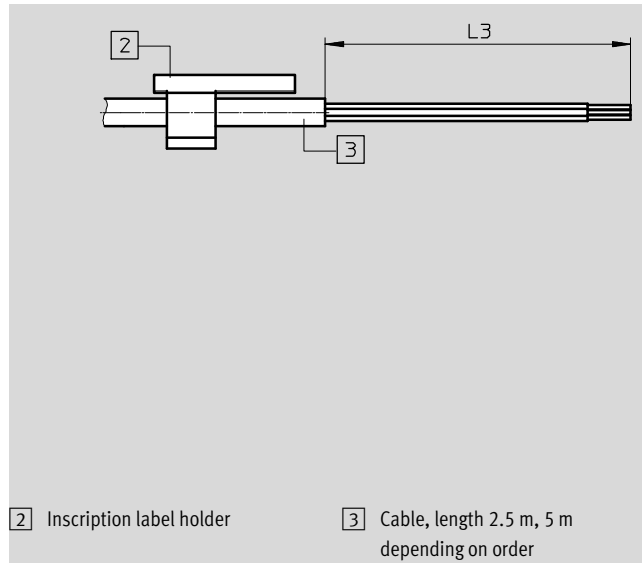
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Connection technology, left-hand end



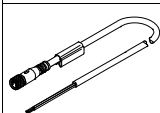
Connection technology, right-hand end



| Connection technology, left-hand end | D1<br>∅ | D2 | D3<br>∅ | L2   | L4 | H1   |
|--------------------------------------|---------|----|---------|------|----|------|
| Straight socket                      | 4.5     | -  | 8.5     | 33.6 | -  | -    |
| Angled socket                        | 4.5     | -  | 8.3     | 26.1 | -  | 18.4 |

| Connection technology, right-hand end | D1<br>∅ | L3 | L4 | H1 |
|---------------------------------------|---------|----|----|----|
| Open end                              | 4.5     | 50 | -  | -  |

## Ordering data

|   | Cable length [m] | Cable characteristics | Outlet direction    | Special features | Part No. | Type              |
|---|------------------|-----------------------|---------------------|------------------|----------|-------------------|
| Socket, 4-pin, clip – open cable end  |                  |                       |                     |                  |          |                   |
|  | 2.5              | Standard              | Straight – straight | -                | 164250   | SIM-K-4-GD-2,5-PU |
|   |                  |                       | Angled – straight   | -                | 164252   | SIM-K-4-WD-2,5-PU |
|   | 5                | Standard              | Straight – straight | -                | 164251   | SIM-K-4-GD-5-PU   |
|   |                  |                       | Angled – straight   | -                | 164253   | SIM-K-4-WD-5-PU   |



## Ordering table

|  |  | Conditions   | Code        | Enter code  |
|--|--|--|-------------|-------------|
| <b>[M]</b> Module No.                            | <b>539052</b>  |  |             |             |
| Function   | Connecting cable   |  | <b>NEBU</b> | NEBU        |
| Connection technology, left-hand end             | Open end   | <b>[1]</b>   | <b>-LE</b>  |             |
|  | Socket with connecting thread M8   |  | <b>-M8</b>  |             |
|  | Socket with connecting thread M12, A-coded                                   |  | <b>-M12</b> |             |
| <b>[M]</b> Socket design                         | None (only with open end connection technology at left-hand end)             |  |             |             |
|  | Straight   |  | <b>G</b>    |             |
|  | Angled   |  | <b>W</b>    |             |
|  | Rotatable  | <b>[2]</b>   | <b>R</b>    |             |
| <b>[M]</b> Number of pins/wires (left-hand end)  | 3-pin (suitable for open end, plug M8)                                       |  | <b>3</b>    |             |
|  | 4-pin (suitable for open end, plug M8)                                       |  | <b>4</b>    |             |
|  | 5-pin (suitable for 3, 4 and 5-pin plug M12)                                 |  | <b>5</b>    |             |
| <b>[O]</b> Display                               | Without LED, DC (standard)   |  |             |             |
|  | LED, PNP   | <b>[3]</b>   | <b>P</b>    |             |
|  | LED, NPN   | <b>[3]</b>   | <b>N</b>    |             |
|  | LED, DC  | <b>[4]</b>   | <b>L</b>    |             |
|  | 2x LED, PNP  | <b>[5]</b>   | <b>P2</b>   |             |
| <b>[M]</b> Cable characteristics                 | Basic  |  | <b>-P</b>   |             |
|  | Standard   |  | <b>-K</b>   |             |
|  | Suitable for use with energy chains  |  | <b>-E</b>   |             |
|  | Suitable for robot applications  |  | <b>-R</b>   |             |
|  | Cable length   | 0.1 ... 30 m (0.1 ... 2.5 m in 0.1 m increments, 2.5 ... 30 m in 0.5 m increments) |             | <b>-...</b> |
| <b>[O]</b> Wire cross section                    | 0.25 mm <sup>2</sup> (standard)  |  |             |             |
|  | 1.00 mm <sup>2</sup>   | <b>[6]</b>   | <b>Q8</b>   |             |
| Cable colour                                     | Grey (standard)  |  |             |             |
| Cable designation                                | With inscription label holder (standard)                                     |  |             |             |
|  | Without inscription label holder   |  | <b>-N</b>   |             |
| <b>[M]</b> Connection technology, right-hand end | Open end (not possible with open end connection technology at left-hand end) | <b>[1]</b>   | <b>-LE</b>  |             |
|  | Plug with connecting thread M8   |  | <b>-M8</b>  |             |
|  | Plug with connecting thread M12, A-coded                                     |  | <b>-M12</b> |             |
| <b>[M]</b> Plug design                           | None (only with open end connection technology at right-hand end)            |  |             |             |
|  | Straight   |  | <b>G</b>    |             |
|  | Angled   |  | <b>W</b>    |             |
| <b>[M]</b> Number of pins/wires (right-hand end) | 2-pin  | <b>[7]</b>   | <b>2</b>    |             |
|  | 3-pin (suitable for socket M8/M12)   | <b>[8]</b>   | <b>3</b>    |             |
|  | 4-pin (suitable for socket M8/M12)   | <b>[8]</b>   | <b>4</b>    |             |
|  | 5-pin (suitable for socket M12)  | <b>[8]</b> <b>[9]</b>  | <b>5</b>    |             |

- [1] LE** With open end LE, the number of pins/wires at the open end must be equal or less than the number of pins on the opposite side.
- [2] R** Can only be combined with M8 (connection technology at left-hand end), 3-pin (pins/wires at left-hand end), without display, standard wire cross section.
- [3] P, N** Can only be combined with M8 connection technology at left-hand end in combination with socket design W and 3 pins/wires (left-hand end) or M12 connection technology at left-hand end in combination with socket design W and 5 pins/wires (left-hand end) and 3 pins/wires (right-hand end).
- [4] L** Can only be combined with M8 connection technology at left-hand end with 4 pins/wires (left-hand end) and M8 connection technology at right-hand end with 3 or 4 pins/wires (left-hand end) or M12 connection technology at right-hand end with 2 pins/wires (left-hand end) or LE connection technology at right-hand end with 2 pins/wires (left-hand end).  
Can only be combined with cable characteristics K.

- [5] P2** Can only be combined with M12 connection technology at left-hand end in combination with socket design W and 4 pins/wires (right-hand end).
- [6] Q8** Can only be combined with M12 connection technology at left-hand end in combination with socket design G and 5 pins/wires (left-hand end) and M12 connection technology at right-hand end in combination with plug design G and 5 pins/wires (left-hand end).  
Can only be combined with cable characteristics E.
- [7] 2** Can only be combined with M12 connection technology at right-hand end or LE in combination with display L.  
Can only be combined with cable characteristics K.
- [8] 3, 4, 5** With LE connection technology at left-hand end, the number of wires (left-hand end) is copied over.
- [9] 5** Can only be combined with M12 or LE connection technology at left-hand end.

### Transfer order code

539052 NEBU - - - - - - - - - -

# Universal connecting cables

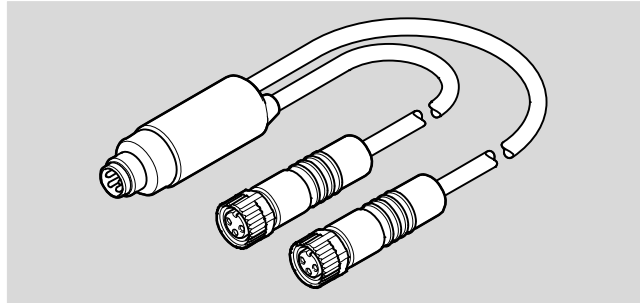
NEDU-L2, DUO cable, plug M8 4-pin – Technical data

FESTO

1

## DUO cable NEDU-L2

- Y-connecting cable
- For connecting 2 sensors to an input socket with double allocation



### General technical data

|                              |        |          |
|------------------------------|--------|----------|
| Operating voltage range      | [V AC] | 0 ... 60 |
| Acceptable current load      | [A]    | 2        |
| Surge resistance             | [kV]   | 1.5      |
| Cable diameter               | [mm]   | 3.1      |
| Cable length                 | [m]    | 1        |
| Protection class to EN 60529 |        | IP67     |

### Materials

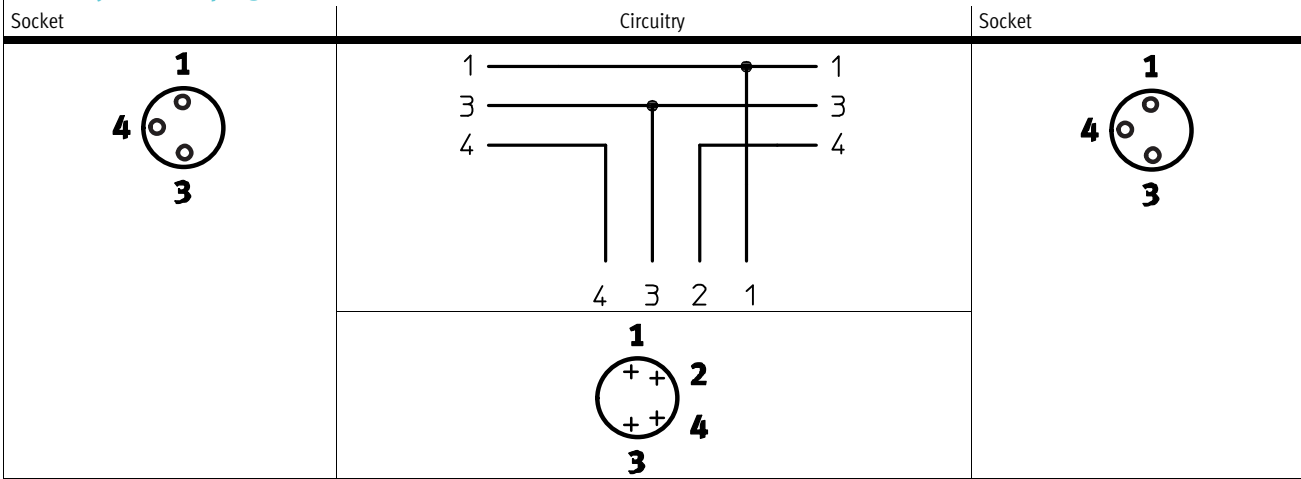
|  |                   |
|--|-------------------|
| Housing                                      | PUR               |
| Socket                                       | PUR               |
| Pin contacts                                 | Gold-plated brass |
| Note on materials                            | RoHS-compliant    |
| Corrosion resistance class CRC <sup>1)</sup> | 1                 |

1) Corrosion resistance class 1 according to Festo standard 940 070  
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

### Operating and environmental conditions

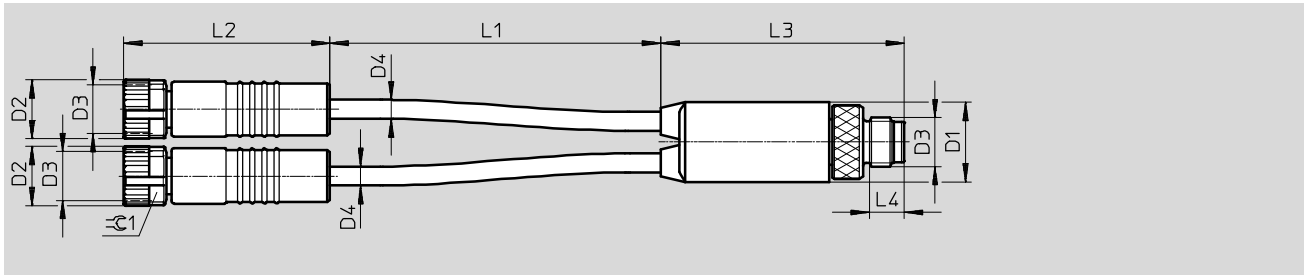
|                     |      |             |
|---------------------|------|-------------|
| Ambient temperature | [°C] | -25 ... +85 |
|---------------------|------|-------------|

### Circuitry (socket/plug view)



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type                          | D1<br>∅ | D2<br>∅ | D3<br>∅ | D4<br>∅ | L1   | L2   | L3   | L4  | ≡C1 |
|-------------------------------|---------|---------|---------|---------|------|------|------|-----|-----|
| NEDU-L2R1-M8G3-K-1L1-1L2-M8G4 | 13      | 9.7     | M8      | 3.1     | 1000 | 33.8 | 39.9 | 4.7 | 9   |

## Ordering data

| Electrical connection | Part No. | Type                          |
|-----------------------|----------|-------------------------------|
| Plug M8, 4 pin        | 574591   | NEDU-L2R1-M8G3-K-1L1-1L2-M8G4 |

# Universal connecting cables

KM12-DUO, DUO cable, plug M12 4-pin – Technical data

FESTO

1

## DUO cable KM12-DUO

- Y-connecting cable
- For connecting 2 sensors to an input socket with double allocation



## General technical data

|                              |   |            |
|------------------------------|---|------------|
| Type of mounting             | Via through-hole, via threaded connector, via union nut |            |
| Mounting position            | Any   |            |
| Operating voltage range      | [V AC]  | Max. 60    |
|                              | [V DC]  | Max. 75    |
| Acceptable current load      | [A]   | 2.8        |
| Cable composition            | [mm <sup>2</sup> ]                                      | 2x 3x 0.25 |
| Cable diameter               | [mm]  | 4.5        |
| Cable length                 | [m]   | 0.6        |
| Protection class to EN 60529 | IP67  |            |

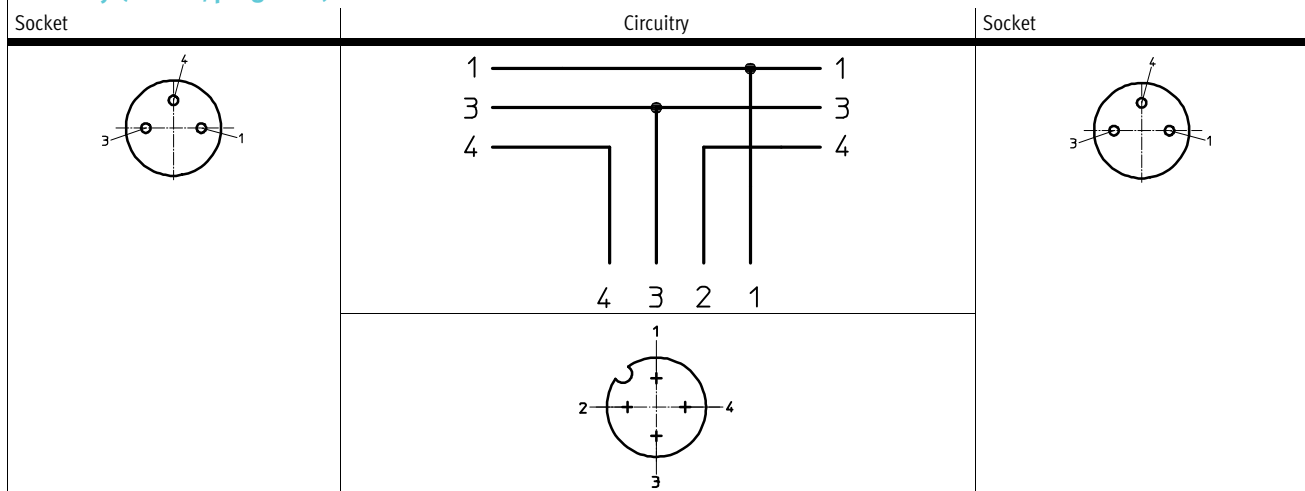
## Materials

|                     |                     |
|---------------------|---------------------|
| Housing             | PUR                 |
| Cable sheath        | PUR                 |
| Cable sheath colour | Grey                |
| Pin contacts        | Gold-plated brass   |
| Union nut           | Nickel-plated brass |

## Operating and environmental conditions

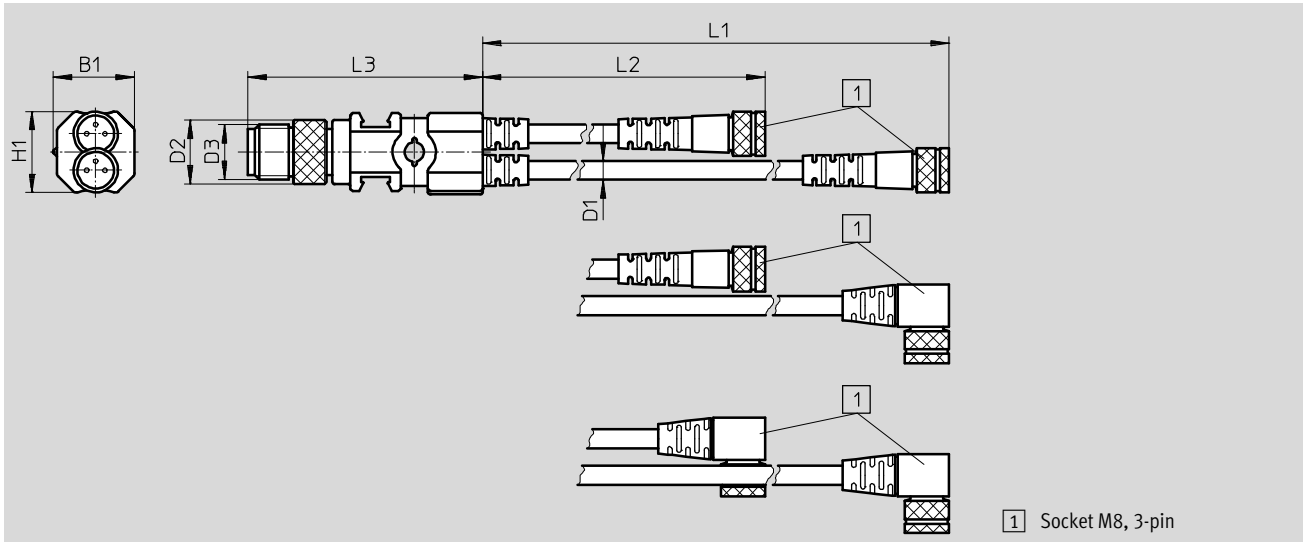
|  |      |             |
|--|------|-------------|
| Ambient temperature                                  | [°C] | -30 ... +70 |
| Ambient temperature with flexible cable installation | [°C] | -5 ... +70  |

## Circuitry (socket/plug view)



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type        | B1 | D1<br>∅ | D2<br>∅ | D3<br>∅ | H1   | L1  | L2  | L3   |
|-------------|----|---------|---------|---------|------|-----|-----|------|
| KM12-DUO-M8 | 17 | 4.5     | 14      | M12     | 17.5 | 600 | 500 | 51.5 |

## Ordering data

| Electrical connection | Outlet direction socket M8 | Weight [g]          | Part No. | Type                          |
|-----------------------|----------------------------|---------------------|----------|-------------------------------|
| Plug M12, 4-pin       | 2x socket M8, 3-pin        | Straight - straight | 61       | <b>18685</b> KM12-DUO-M8-GDGD |
|                       |                            | Straight - angled   | 61       | <b>18688</b> KM12-DUO-M8-GDWD |
|                       |                            | Angled - angled     | 61       | <b>18687</b> KM12-DUO-M8-WDWD |

# Universal connecting cables

KVI-CP, for fieldbus – Technical data

FESTO

1

## Connecting cable KVI-CP

- Connecting cable for fieldbus connection (CP bus valve terminal CPV, type 03 and CPI installation system)
- Pre-assembled at both ends
- Cable lengths 0.25 m, 0.5 m, 2 m, 5 m or 8 m
- 5-pin
- Round plug



## General technical data

|                                      |                         |
|--------------------------------------|-------------------------|
| Type of mounting                     | M9 union nut            |
| Mounting position                    | Any                     |
| Operating voltage range [V DC]       | 60                      |
| Acceptable current load [A]          | 1.6                     |
| Cable composition [mm <sup>2</sup> ] | 2x0.24, 2x0.34 and 0.49 |
| Cable diameter [mm]                  | 5.5                     |
| Protection class to EN 60529         | IP65/67 (assembled)     |

## Materials

|                     |                                   |
|---------------------|-----------------------------------|
| Housing             | Polyurethane, nickel-plated brass |
| Contacts            | Gold-plated bronze/brass          |
| Cable sheath        | Polyurethane                      |
| Cable sheath colour | Light grey                        |
| Note on materials   | RoHS-compliant                    |

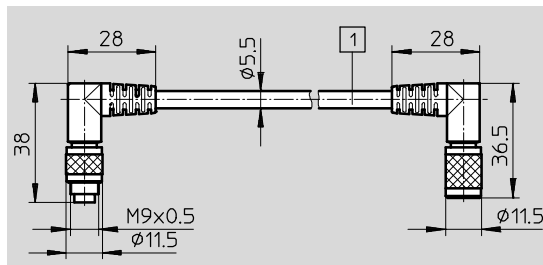
## Operating and environmental conditions

|  |             |
|--|-------------|
| Ambient temperature for flexible cable installation [°C] | -5 ... +80  |
| Ambient temperature [°C]                                 | -20 ... +80 |

## Dimensions

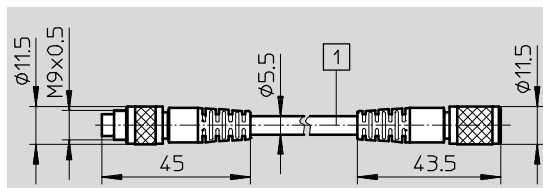
Download CAD data → [www.festo.com](http://www.festo.com)

KVI-CP-3-WSWD-...



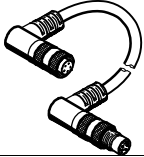

- 1 Cable length 0.25 m, 0.5 m, 2 m, 5 m or 8 m

KVI-CP-3-GSGD-...



- 1 Cable length 2 m, 5 m or 8 m

## Ordering data

|   | Electrical connection           | Weight [g] | Cable length [m] | Part No. | Type                |
|---|---------------------------------|------------|------------------|----------|---------------------|
|  | Angled plug - angled socket     | 34         | 0.25             | 540327   | KVI-CP-3-WS-WD-0,25 |
|   |                                 | 45         | 0.5              | 540328   | KVI-CP-3-WS-WD-0,5  |
|   |                                 | 116        | 2                | 540329   | KVI-CP-3-WS-WD-2    |
|   |                                 | 256        | 5                | 540330   | KVI-CP-3-WS-WD-5    |
|   |                                 | 399        | 8                | 540331   | KVI-CP-3-WS-WD-8    |
|  | Straight plug - straight socket | 114        | 2                | 540332   | KVI-CP-3-GS-GD-2    |
|   |                                 | 255        | 5                | 540333   | KVI-CP-3-GS-GD-5    |
|   |                                 | 397        | 8                | 540334   | KVI-CP-3-GS-GD-8    |

# Universal connecting cables

VAVE-P8-VPS – Technical data

FESTO

1

## Programming cable VAVE-P8-VPS



### General technical data

|                                 |                    |         |
|---------------------------------|--------------------|---------|
| Operating voltage range         | [V DC]             | 30      |
| Acceptable current load at 40°C | [A]                | 2       |
| Cable composition               | [mm <sup>2</sup> ] | 8x0.25  |
| Cable diameter                  | [mm]               | 6.3     |
| Protection class                |                    | IP65/67 |

### Operating and environmental conditions

|   |      |             |
|---|------|-------------|
| Ambient temperature for flexible cable installation | [°C] | -5 ... +80  |
| Ambient temperature                                 | [°C] | -25 ... +85 |

### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



### Dimensions and ordering data

| D1  | D3   | D5   | D6    | D7   | H1 | L1  | L2   | L3   | Part No. | Type        |
|-----|------|------|-------|------|----|-----|------|------|----------|-------------|
| 6.2 | 14.5 | 14.5 | M12x1 | 14.5 | 54 | 150 | 41.7 | 11.1 | 570971   | VAVE-P8-VPS |

### Ordering data – Accessories

|   | Description                 | Part no. | Type                         |
|---|-----------------------------|----------|------------------------------|
| Connecting cable                            |                             |          |                              |
| Technical data → Internet: connecting cable |                             |          |                              |
|   | Straight socket, 8-pin, M12 | 2 m      | 525616 SIM-M12-8GD-2-PU      |
|   |                             | 5 m      | 525618 SIM-M12-8GD-5-PU      |
|   |                             | 10 m     | 570008 SIM-M12-8GD-10-PU     |
|   | Angled socket, 8-pin, M12   | 2 m      | 542256 NEBU-M12W8-K-2-N-LE8  |
|   |                             | 5 m      | 542257 NEBU-M12W8-K-5-N-LE8  |
|   |                             | 10 m     | 570007 NEBU-M12W8-K-10-N-LE8 |





Management level

Management system

Control level

Control

Modular controller  
CECX



Compact controller  
CECC



Integrated controller  
CDPX



Controller

Motor controllers  
CMFL



SFC-LACI



Servo motor controllers  
CMMP-AS



CMMS-AS



Field level

Actuation

Linear motor axes  
ELGL-LAS



DNCE-LAS



DFME-LAS



ADNE-LAS



Gantry axis

EGC



DGE



ELGA



EGC-HD



ELGR/ELGG



EGSK/EGSP

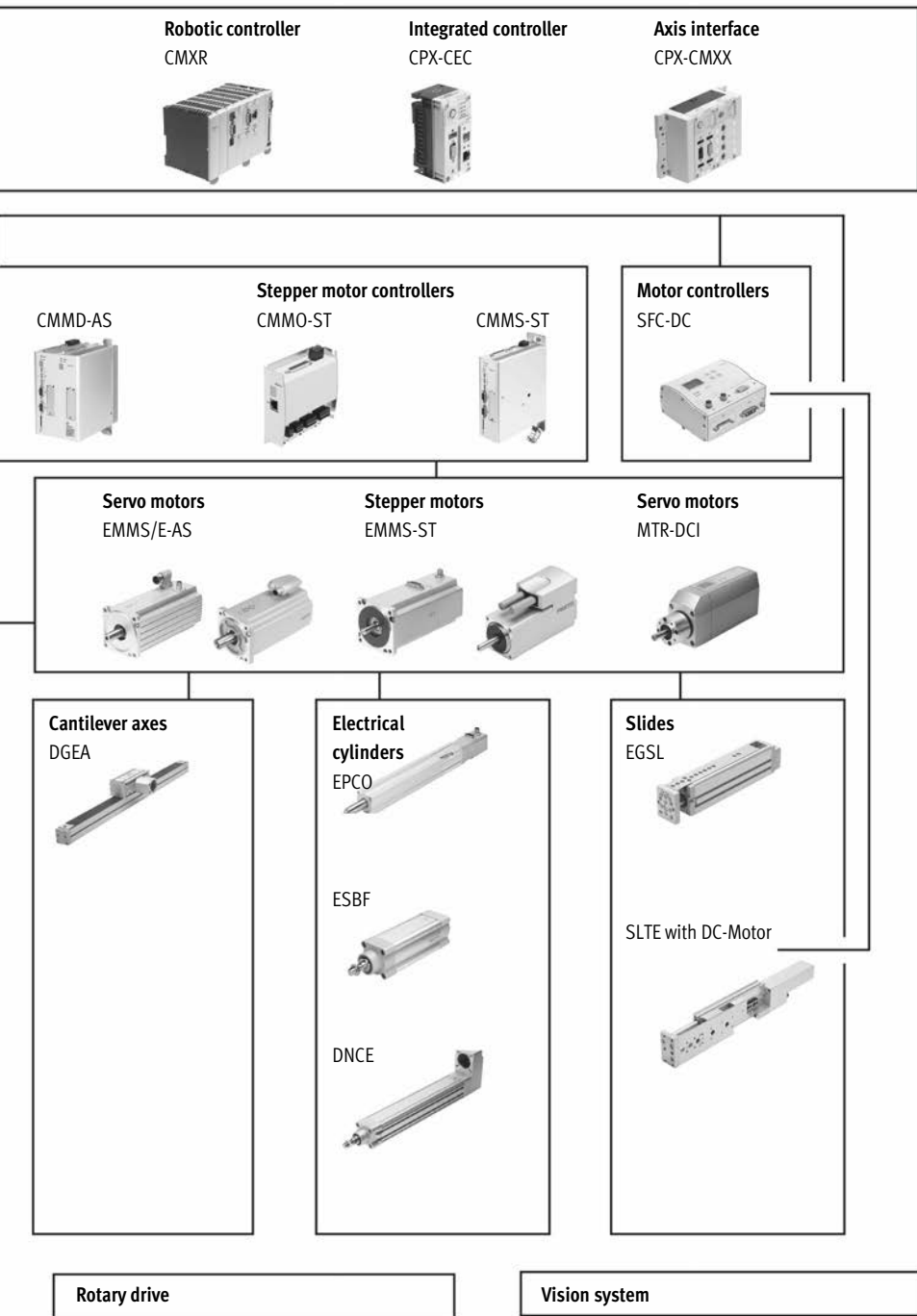


Drives

Front Unit

Grippers

Vacuum



**FHPF**  
Festo Handling and Positioning Profile

**CODESYS**  
provided by Festo

**FST 4**  
Festo Software Tool



**FCT**  
Festo Configuration Tool













**PositioningDrives**  
Design and calculation software for electric drives





















# Connecting cables for control systems

Selection aid

FESTO

2

| Version   | Type   | Higher-level device                  |        |                |   |              |                 |                            |                  |             |             |            | Page/Internet          |                 |
|---|--|--------------------------------------|--------|----------------|---|--------------|-----------------|----------------------------|------------------|-------------|-------------|------------|------------------------|-----------------|
|   |  | CECX/CMXR-C1/<br>CMXR-C2             |        |                |   |              | Basic unit CPX  |                            |                  |             |             |            |                        |                 |
|   |  | Controller                           |        |                |   |              |                 |                            |                  |             |             |            |                        |                 |
|   |  | CECX-S-2S1                           | CAMI-C | CECC-LK/CECC-S | CDPX-X-A-W                                  | FED-770/3000 | CPX-CEC-C1      | CPX-CEC-M1                 | CPX-CMIX         | CPX-CMAX-C1 | CPX-CMPX    | CPX-CM-HPP | CPX-CTEL-2-M12-5POL-LK |                 |
|   |  | Operating mode/controller interfaces |        |                |   |              |                 |                            |                  |             |             |            |                        |                 |
|   |  | RS 485                               |        | IO-Link/I-Port | Modbus RTU Server/Modbus TCP Server/CODESYS | EtherNet     | CODESYS CANopen | CODESYS/CANopen/Softmotion | FHPP-MAX CANopen | CANopen CPI | CANopen CPI | CANopen    | IO-Link                | → Page/Internet |
|  | NEBU-M12G5-K-2.5-LE5<br>NEBU-M12W5-K-2.5-LE5 |                                      |        | ■              |   |              |                 |                            |                  |             |             |            |                        | 35              |
|  | NEBU-M12G5-E-...-Q8-M12G5                    |                                      |        | ■              |   |              |                 |                            |                  |             |             |            |                        | 35              |
|  | NEBU-M12G5-E-...-Q8N-M12G5                   |                                      |        |                |   |              |                 |                            |                  |             |             | ■          |                        | 35              |
|  | KVI-CP-3-WS-WD-...                           |                                      | ■      |                |   |              |                 |                            |                  | ■           | ■           |            |                        | 54              |
|  | NEBC-M9W5-K-2-N-LE3                          |                                      |        |                |   |              |                 |                            |                  |             |             | ■          |                        | 64              |
|  | NEBP-M16W6-K-2-M9W5                          |                                      |        |                |   |              |                 |                            | ■                |             |             |            |                        | 65              |
|  | NEBC-S1G15-K-2.5N-B-S1G9                     | ■                                    |        |                |   |              |                 |                            |                  |             |             |            |                        | 71              |
|  | FEC-KBG7<br>FEC-KBG8                         |                                      |        |                |   | ■            | ■               | ■                          |                  |             |             |            |                        | 76              |
|  | FEDZ-PC<br>FEDZ-PC-9PIN                      |                                      |        |                |   | ■            |                 |                            |                  |             |             |            |                        | 76              |
|  | NESC-C-D1-...-C1                             | ■                                    | ■      |                |   |              |                 |                            |                  |             |             |            |                        | 76              |










| Version   | Type                     | Controller  |   |   |   | Page /Internet<br>→ |
|---|--------------------------|---|---|---|---|---------------------|
|   |                          | <br>CMFL | <br>SFC-LACI-VD-10-E-H2-10 | <br>CMMO-ST-C5-1-DIOP/DION | <br>SFC-DC |                     |
|   |                          | Operating mode/controller interfaces  |   |   |   |                     |
|   |                          | PWM-MOSFET output stage   | FHPP / I/O interface<br>PROFIBUS /CANopen/<br>DeviceNet   | FCT<br>EtherNet TCP/IP<br>RS422   | FCT /PROFIBUS<br>CANopen/DeviceNet  |                     |
|  | NEBM-M12G8-E-...-Q5-LE6  |   |   | ■   |   | 73                  |
|  | NEBM-S1W9-E-...-Q5-LE6   |   |   | ■   |   | 73                  |
|  | NEBM-S1G9-E-...-Q5-LE6   |   |   | ■   |   | 73                  |
|  | NEBM-M12G8-E-...-LE8     |   |   | ■   |   | 73                  |
|  | NEBM-M12W8-E-...-LE8     |   |   | ■   |   | 73                  |
|  | NEBM-T1G6-T1G6-...       |   | ■   |   |   | 74                  |
|  | NEBM-T1G12-T1G12-...     |   | ■   |   |   | 74                  |
|  | KPWR-MC-1-SUB-15HC-...   |   | ■   |   | ■   | 74                  |
|  | KES-MC-1-SUB-15-...      |   | ■   |   | ■   | 74                  |
|  | KMTR-DC-SUB-15-M12-...   |   |   |   | ■   | 74                  |
|  | NEBM-S1G9-E-...-N-S1G9   | ■   |   |   |   | 75                  |
|  | KPWR-MC-1-SUB-9HC-...    | ■   |   |   |   | 75                  |
|  | KES-MC-1-SUB-9-...       | ■   |   |   |   | 75                  |
|  | KDI-MC-M8-SUB-9-2,5      |   | ■   |   | ■   | 75                  |
|  | NEBC-S1G25-K-...-N-S1G25 |   |   | ■   |   | 76                  |
|  | NEBC-S1G25-K-3.2-N-LE25  |   |   | ■   |   | 76                  |

# Connecting cables for control systems

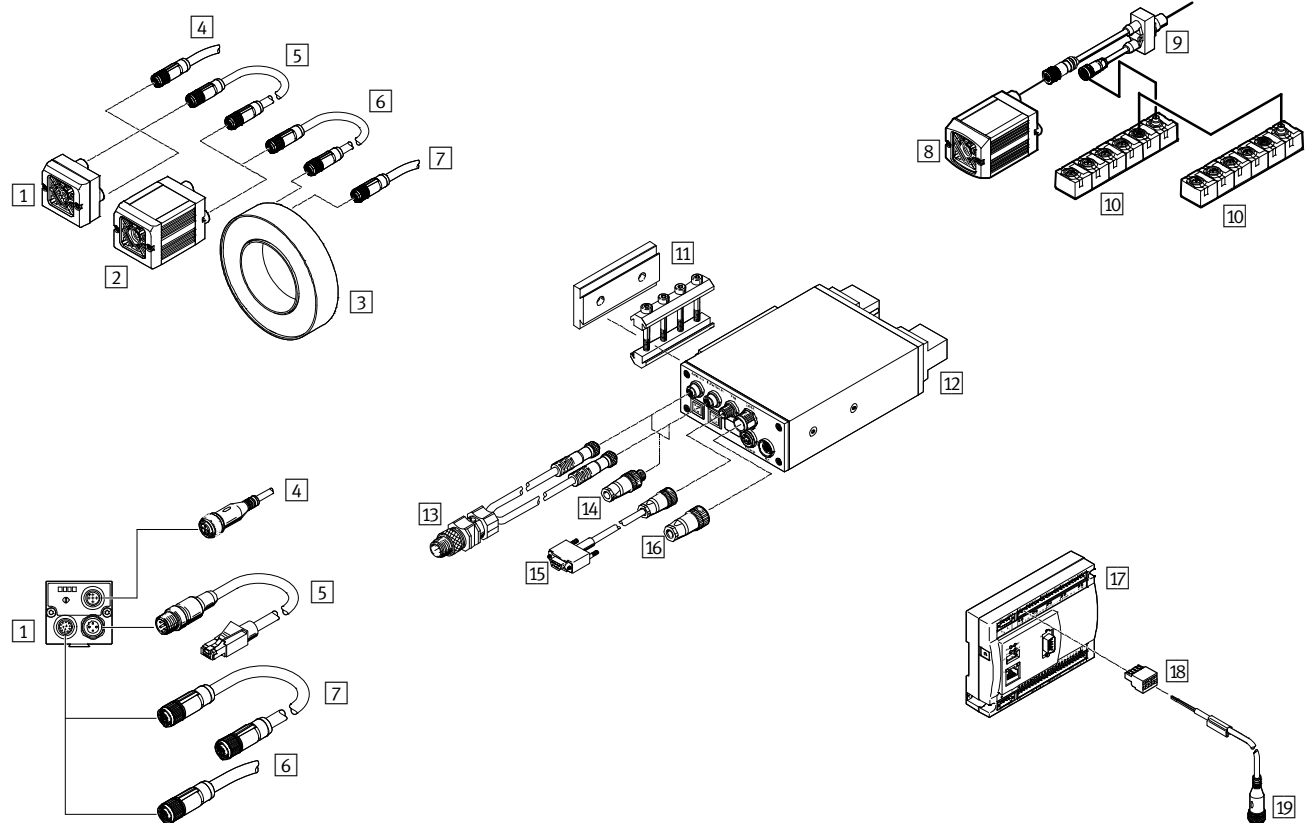
Selection aid

FESTO

2

| Version   | Type                    | Controller  |   |  |  |  |  | → Page/Internet |
|---|-------------------------|---|---|--|--|--|--|-----------------|
|   |                         | <br>CMMP-AS-MO | <br>CMMP-AS-M3 | <br>CMMP-AS | <br>CMMS-AS-C4-3A | <br>CMMD-AS-C8-3A | <br>CMMS-ST |                 |
|   |                         | Operating mode/controller interfaces  |   |  |  |  |  |                 |
|   |                         | FHPP<br>I/O interface<br>CANopen  | FHPP / I/O Anschaltung<br>CANopen / PROFIBUS / EtherCAT<br>EtherNet / PROFINET / DeviceNet      | FHPP / I/O Anschaltung<br>CANopen / PROFIBUS<br>EtherCAT / DeviceNet                         | CODESYS / TwinCat<br>Step7 / CANopen<br>PROFIBUS / DeviceNet   | CODESYS / TwinCat<br>Step7 / CANopen<br>PROFIBUS / DeviceNet   | CODESYS / TwinCat<br>Step7 / CANopen<br>PROFIBUS / DeviceNet                                   |                 |
|  | NEBC-S1G25-K-2.5N-LE26  | ■   | ■   | ■  | ■  | ■  | ■  | 74              |
|  | PS1-ZK11-NULLMODEM-1,5M |   |   | ■  | ■  | ■  | ■  | 74              |
|  | NEBC-U1G-K-1.8-N-U2G    | ■   | ■   |  |  |  |  | 74              |

## Operator units and control systems



| Designation                    | Type                  | → Page/<br>Internet |
|--------------------------------|-----------------------|---------------------|
| 1 Area light                   | SBAL-C6-A             | sbal                |
| 2 Code reader<br>Object sensor | SBSI-B<br>SBSI-Q      | sbsi                |
| 3 Ring light                   | SBAL-C6-R             | sbal                |
| 4 Connecting cable             | NEBS-M12G5-KS-5-LE5   | 83                  |
| 5 Connecting cable             | NEBC-D12G4-KS-3-R3G4  | 83                  |
| 6 Connecting cable             | NEBS-M12G12-KS-5-LE12 | 83                  |
| 7 Connecting cable             | NEBS-M12G12-KS-5-LE12 | 83                  |
| 8 Compact Vision System        | SBOI-Q                | sboi                |
| 9 Cable                        | SBOA-K20CP-SUP        | sboa                |
| 10 Input module                | CPI                   | cpi                 |

| Designation            | Type             | → Page/<br>Internet |
|------------------------|------------------|---------------------|
| 11 Adapter kit         | HMSV-12          | hmsv                |
| 12 Checkbox            | CHB-C-X          | chb                 |
| 13 DUO cable           | KM12-DUO-M8-GDGD | 52                  |
| 14 Plug connector      | SEA/ NECU        | 231                 |
| 15 Programming cable   | KDI-SB202-BU9    | 72                  |
| 16 Power supply socket | NTSD             | 338                 |
| 17 Controller          | CECC             | cecc                |
| 18 Plug                | NECC             | 246                 |
| 19 Connecting cable    | NEBU             | 14                  |

# Connecting cables for control systems

NEBC-M9W5, M9 5-pin – Technical data

FESTO

## Connecting cable NEBC-M9W5

- Connecting cable M9 5-pin
- Pre-assembled
- Cable lengths 2 and 5 m
- Suitable for CPX-CM-HPP



2

## General technical data

|                              |                                     |         |
|------------------------------|-------------------------------------|---------|
| Electrical connection        | Angled plug, 5-pin, M9              |         |
|                              | Open cable end, 5-wire              |         |
| Operating voltage range      | [V DC]                              | Max. 60 |
| Acceptable current load      | [A]                                 | 1.6     |
|                              | 24 V                                |         |
| Cable diameter               | [mm]                                | 5.5     |
| Wire ends                    | Wire end sleeve                     |         |
| Cable characteristics        | Suitable for use with energy chains |         |
| Cable test conditions        | Test conditions on request          |         |
| Type of mounting             | Via union nut                       |         |
| Mounting position            | Any                                 |         |
| Protection class to EN 60529 | IP65, IP67                          |         |

## Materials

|                     |                           |
|---------------------|---------------------------|
| Housing             | PA, PBT, TPE-U (PUR)      |
| Pin contact         | Bronze/brass, gold-plated |
| Cable sheath        | TPE-U (PUR)               |
| Cable sheath colour | Light grey                |
| Union nut           | Nickel-plated brass       |
| Note on materials   | RoHS-compliant            |

## Operating and environmental conditions

|  |      |             |
|--|------|-------------|
| Ambient temperature                                  | [°C] | -20 ... +80 |
| Ambient temperature with flexible cable installation | [°C] | -5 ... +80  |
| Min. cable bending radius                            | [mm] | 75          |

## Wiring allocation (plug view)

| Socket   | Pin | Wire colour <sup>1)</sup> |
|--|-----|---------------------------|
| Electrical connection plug connector, 5-pin, M9 open cable end |     |                           |
|  | 1   | YE                        |
|  | 2   | GY                        |
|  | 3   | GN                        |
|  | 4   | WH                        |
|  | 5   | BN                        |

1) To IEC 757

## Ordering data

| Electrical connection | Cable composition   | Product weight [g] | Cable length [m] | Part No.      | Type                       |
|-----------------------|---|--------------------|------------------|---------------|----------------------------|
| Angled plug, 5-pin    | 2x 0.25 mm <sup>2</sup> , 2x 0.34 mm <sup>2</sup> ,<br>0.49 mm <sup>2</sup> | 108                | 2                | <b>563711</b> | <b>NEBC-M9W5-K-2-N-LE3</b> |
|                       |   | 250                | 5                | <b>563712</b> | <b>NEBC-M9W5-K-5-N-LE3</b> |



**Connecting cable**  
**NEBP-M16W6**

- Pre-assembled at both ends
- Cable length 2 m
- 5 wires
- M16/M9



## General technical data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Electrical connection                | Angled socket, 6-pin, M16x0.75 |
|                                      | Angled plug, 5-pin, M9x0.5     |
| Operating voltage range [V DC]       | 60                             |
| Surge resistance [kV]                | 0.5                            |
| Acceptable current load [A]          | 3                              |
| Type of mounting                     | Via union nut                  |
| Cable composition [mm <sup>2</sup> ] | 2x 0.24 + 2x 0.34 + 1x 0.49    |
| Protection class to EN 60529         | IP65, IP67                     |
| Product weight [g]                   | 160                            |

## Materials

|                   |  |
|-------------------|--|
| Housing           | PUR  |
| Pin contacts      | Bronze/brass, nickel-plated, and gold-plated |
| Note on materials | RoHS-compliant                               |

## Operating and environmental conditions

|   |             |
|---|-------------|
| Ambient temperature [°C]                                  | -20 ... +70 |
| Ambient temperature with flexible cable installation [°C] | -5 ... +70  |
| Degree of contamination                                   | 1           |

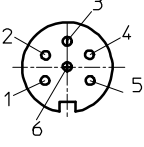
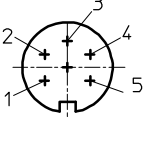
# Connecting cables for control systems

NEBP-M16W6, M16 6-pin – Technical data

FESTO

2

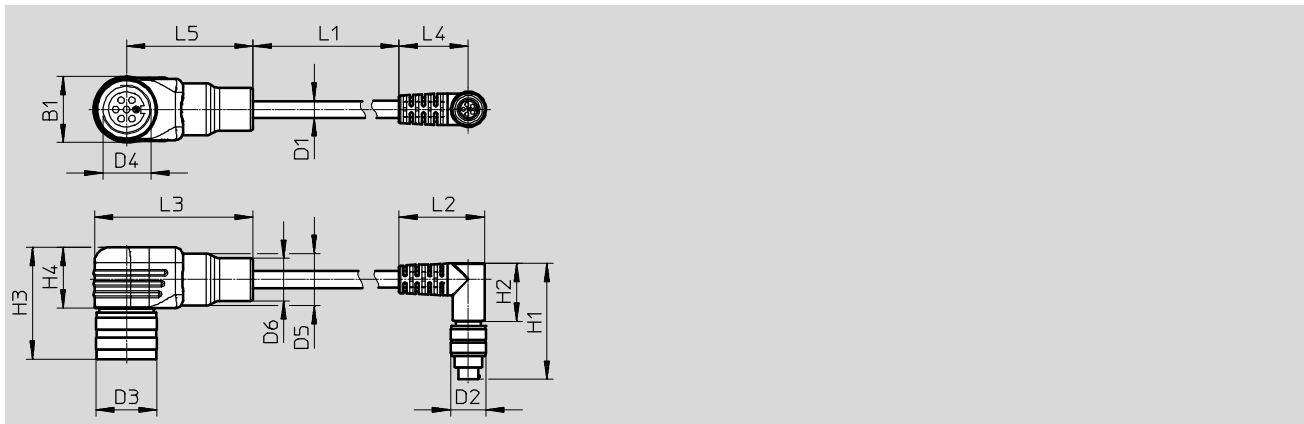
## Circuitry (socket/plug view)

| Socket  | Pin | Wire colour <sup>1)</sup> | Pin | Plug  |
|---|-----|---------------------------|-----|---|
| Electrical connection, socket, 6-pin, M16 plug connector, 5-pin, M9               |     |                           |     |   |
|  | 1   | BN                        | 5   |  |
|   | 2   | WH                        | 4   |   |
|   | 3   | -                         | 2   |   |
|   | 4   | -                         | -   |   |
|   | 5   | YE                        | 1   |   |
|   | 6   | GN                        | 3   |   |

1) To IEC 757

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



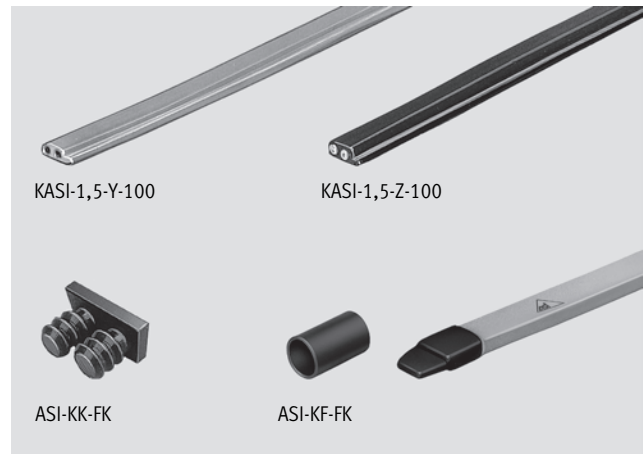
| Type                | B1   | D1  | D2   | D3 | D4        | D5 | D6 | H1 | H2 | H3   | H4   | L1    | L2 | L3 | L4   | L5   |
|---------------------|------|-----|------|----|-----------|----|----|----|----|------|------|-------|----|----|------|------|
| NEBP-M16W6-K-2-M9W5 | 21.6 | 5.5 | 11.5 | 20 | M16x 0.75 | 17 | 14 | 38 | 19 | 36.6 | 19.8 | 2,000 | 28 | 52 | 22.8 | 41.5 |

## Ordering data

| Electrical connection                        | Cable length [m] | Part No. | Type                |
|--|------------------|----------|---------------------|
| Socket, 6-pin, M16 plug connector, 5-pin, M9 | 2                | 575898   | NEBP-M16W6-K-2-M9W5 |

**Flat cable**  
**KASI**

- Flat cable, 2-core
- Reverse polarity protected
- Contact established using insulation displacement technology – no need to strip cable and wire insulation
- 2 different colours: yellow (preferred for the AS-interface network) and black (for auxiliary power supply)
- Pre-assembled
- Accessories
  - Flat cable sleeve  
For insulating and sealing the AS-interface cable
  - Cable cap  
For insulating and sealing the AS-interface cable at the end of the string



**General technical data**

| Type  | KASI-1,5-Y-100      | KASI-1,5-Z-100  |
|---|---------------------|-----------------|
| Connection cross-section [mm <sup>2</sup> ]             | 2x 1.5              |                 |
| Max. cable length [m]                                   | 100                 |                 |
| Colour  | Yellow              | Black           |
| Use   | For indoor use only | For outdoor use |
| Ambient temperature [°C]                                | -40 ... +85         |                 |
| Ambient temperature of flexible cable installation [°C] | -25 ... +85         |                 |

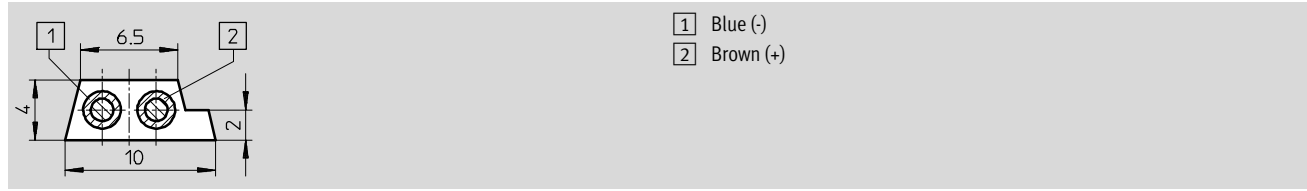
**Ordering data**

| View | Material                                    | Protection class           | Operating voltage range |       | Current-carrying capacity [A] | Product weight [g] | Type                  | Part No.       |
|------|---|----------------------------|-------------------------|-------|-------------------------------|--------------------|-----------------------|----------------|
|      |   |                            | [V]                     | [V]   |                               |                    |                       |                |
|      | Sheath: Cable: Conductor: tin-plated copper | IP65 with closed wire ends | 60 AC                   | 75 DC | 3                             | 71                 | <b>KASI-1,5-Y-100</b> | <b>18 940</b>  |
|      |   |                            |                         |       |                               |                    | <b>KASI-1,5-Z-100</b> | <b>18 941</b>  |
|      | Polyamide                                   | IP65                       | –                       | –     | –                             | –                  | <b>ASI-KK-FK</b>      | <b>18 787</b>  |
|      |   |                            | –                       | –     | –                             | –                  | <b>ASI-KT-FK</b>      | <b>165 593</b> |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Flat cable – KASI-1,5-...-100

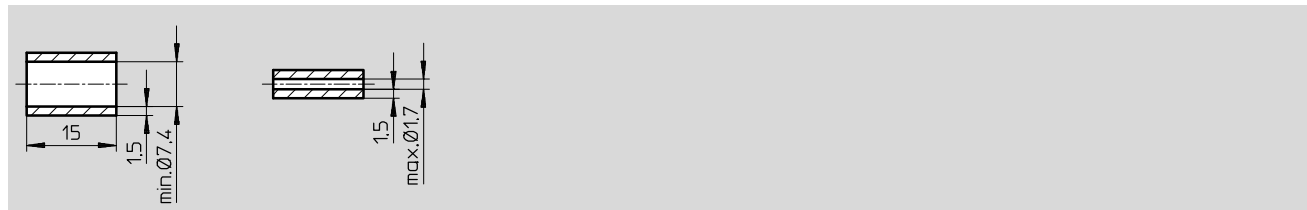


2

Cable cap – ASI-KK-FK



Flat cable sleeve – ASI-KT-FK



**Addressing cable  
KASI-ADR  
for AS-interface**

- Addressing cable for any slaves including
  - Individual valve interface
  - Midi/maxi valve terminal with AS-interface connection
  - CP valve terminals
- Cable length 2.5 m
- Pre-assembled
- Reverse polarity protected



## General technical data

| Type                          | Type               | KASI-ADR                |
|-------------------------------|--------------------|-------------------------|
| Connection type               |                    | Plug-in/screw-in        |
| Connection cross-section      | [mm <sup>2</sup> ] | 2x 1.5                  |
| Protection class              |                    | IP65                    |
| Material of plug, straight    | Housing            | Polybuteneterephthalate |
|                               | Contacts           | Copper base alloy       |
|                               | Union nut          | Polybuteneterephthalate |
| Material of plug, angled      | Housing            | Polyurethane            |
|                               | Contacts           | Bronze                  |
|                               | Union nut          | Nickel-plated brass     |
| Material of flat cable socket | Housing            | Polyamide               |
|                               | Contacts           | Bronze                  |
| Material of cable sheath      |                    | Rubber compound         |
| Ambient temperature           | [°C]               | -40 ... +85             |

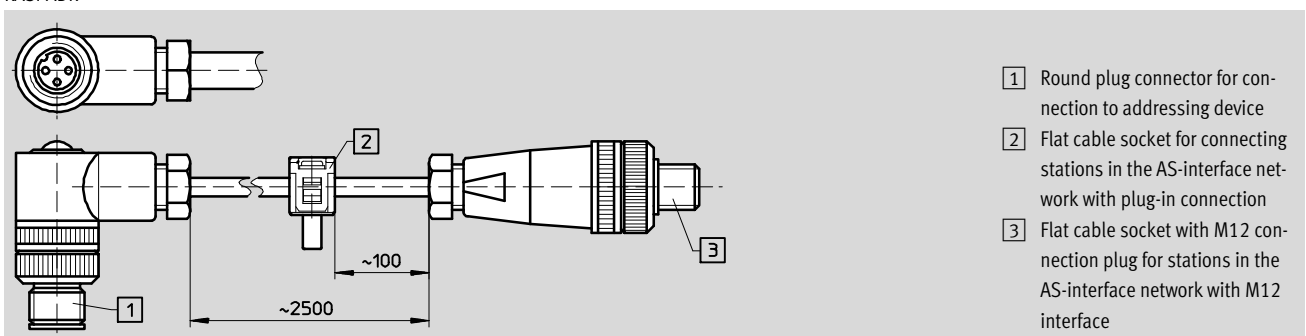
## Ordering data

| View | Electrical connection   | Operating voltage range |       | Current-carrying capacity [A] | Type            | Part No.      |
|------|---|-------------------------|-------|-------------------------------|-----------------|---------------|
|      |   | [V]                     | [V]   |                               |                 |               |
|      | Plug, straight, 4-pin<br>Plug, angled, 4-pin<br>Socket, straight, 2-pin | 60 AC                   | 75 DC | 3                             | <b>KASI-ADR</b> | <b>18 960</b> |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

KASI-ADR



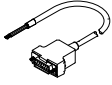
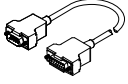
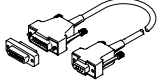
- 1 Round plug connector for connection to addressing device
- 2 Flat cable socket for connecting stations in the AS-interface network with plug-in connection
- 3 Flat cable socket with M12 connection plug for stations in the AS-interface network with M12 interface

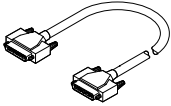
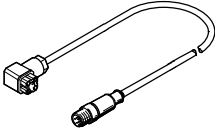
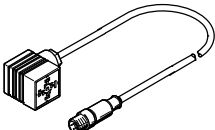
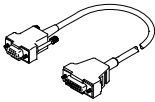
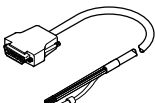

# Connecting cables for control systems

FEC/FEDZ, Operator units FED – Technical data

FESTO

2

| Ordering data   |   |  |                  |               |                 |
|---|---|--|------------------|---------------|-----------------|
|   | Description   | Electrical connection                      | Cable length [m] | Part No.      | Type            |
|  | For connecting to control block CPX-FEC<br>Prepared for combining with plug FBS-SUB-9-GS-1X9POL-B | Open end<br>Sub-D socket, 15-pin           | 5                | <b>539642</b> | <b>FEC-KBG7</b> |
|  | For connecting to control block CPX-FEC   | Sub-D plug, 15-pin<br>Sub-D socket, 15-pin | 2.5              | <b>539643</b> | <b>FEC-KBG8</b> |
|  | Programming cable   | Sub-D plug, 15-pin<br>Sub-D socket, 15-pin | 3                | <b>533534</b> | <b>FEDZ-PC</b>  |

| Ordering data   |   |                  |          |                             |
|---|---|------------------|----------|-----------------------------|
|   | Brief description   | Cable length [m] | Part No. | Type                        |
| <b>Connection options from I/O interface to controller</b>                          |   |                  |          |                             |
|    | Connects the motor controller to the connection block   | 2.0              | 8001375  | NEBC-S1G25-K-2.0-N-S1G25    |
|   |   | 5.0              | 8001376  | NEBC-S1G25-K-5.0-N-S1G25    |
| <b>Connection between sensor interface CASM and displacement encoder</b>            |   |                  |          |                             |
|    | For swivel module DSM1 and potentiometer LWG  | 0.3              | 549293   | NEBC-P1W4-K-0.3-N-M12G5     |
|    | Potentiometer TLF   | 0.3              | 549294   | NEBC-A1W3-K-0.3-N-M12G5     |
| <b>Connecting cable for modular controllers CECX</b>                                |   |                  |          |                             |
|   | Cable for connecting an operator unit FED via RS485, 6 x 0,34 mm <sup>2</sup><br>Straight socket, Sub-D, 15-pin<br>Straight socket, Sub-D, 9-pin            | 2.5              | 563782   | NEBC-S1G15-K-2.5-N-B-S1G9-V |
|   | Cable for connecting an operator unit FED via RS485, 3 x 0,34 mm <sup>2</sup> , shielded<br>Straight socket, Sub-D, 15-pin<br>Straight socket, Sub-D, 9-pin | 2.5              | 553949   | NEBC-S1G15-K-2.5-N-B-S1G9   |
| <b>Connecting cable for motor controller CMMS-ST</b>                                |   |                  |          |                             |
|  | Control cable, for I/O interface to any controller  | 2.5              | 552254   | NEBC-S1G25-K-2.5N-LE26      |
| <b>Accessories</b>  |   |                  |          |                             |
|  | Inscription labels 8x20, in frames<br>20 pieces   |                  | 539388   | IBS-8X20                    |

## Connecting cable KDI

- Connecting cable (programming cable) for different applications
- Pre-assembled at both ends
- Cable lengths: 3 m and 5 m



## General technical data

|                                |                     |                 |
|--------------------------------|---------------------|-----------------|
| Type                           | KDI-...             | KDI-PPA-3-BU9   |
| Type of mounting               | Via union nut, clip | Screws 4-40 UNC |
| Mounting position              | Any                 |                 |
| Operating voltage range [V AC] | ≤300                | -               |

## Materials

|              |                               |               |
|--------------|-------------------------------|---------------|
| Type         | KDI-...                       | KDI-PPA-3-BU9 |
| Housing      | PBT                           |               |
| Contacts     | Gold-plated copper base alloy |               |
| Union nut    | Nickel-plated brass           |               |
| Cable sheath | PUR                           | PVC           |

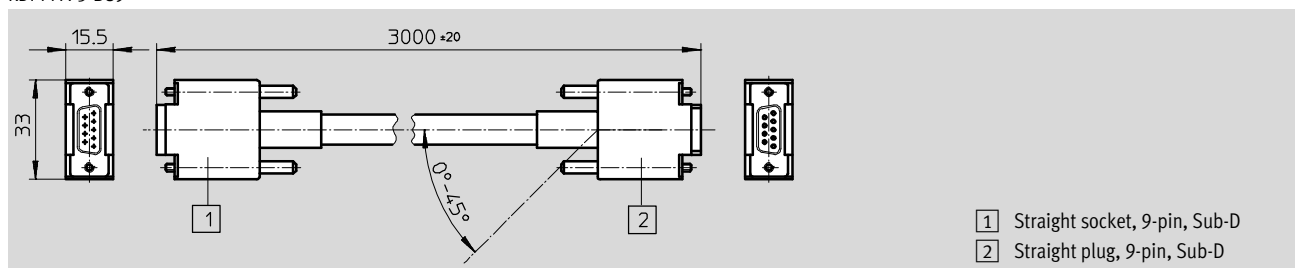
## Operating and environmental conditions

|  |             |
|--|-------------|
| Ambient temperature [°C]                                 | -30 ... +80 |
| Ambient temperature for flexible cable installation [°C] | -10 ... +80 |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

KDI-PPA-3-BU9



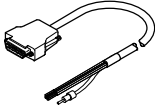
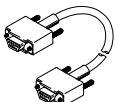
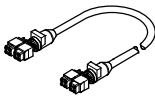
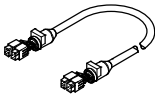
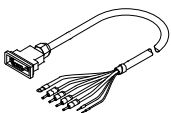
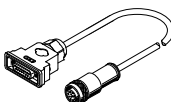
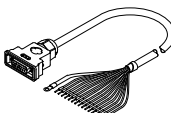
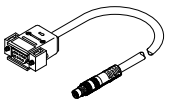
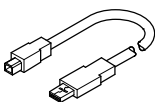
## Ordering data

|  | Electrical connection                                       | Cable composition [mm <sup>2</sup> ] | Cable Ø [mm] | Cable length [m] | Weight [g] | Part No. | Type          |
|--|---|--------------------------------------|--------------|------------------|------------|----------|---------------|
|  | Straight socket, 9-pin, Sub-D – straight plug, 9-pin, Sub-D | 9x0.22                               | -            | 3                | 156        | 151915   | KDI-PPA-3-BU9 |
|  | Straight socket, 5-pin, M12 – straight socket, 9-pin, Sub-D | 4x0.14                               | 4.5 ... 6.5  | 5                | 181        | 150268   | KDI-SB202-BU9 |

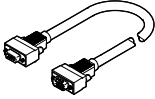

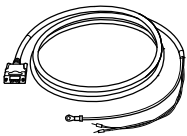
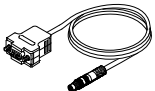


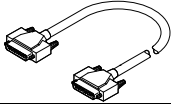
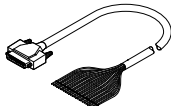
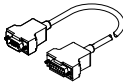
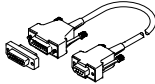



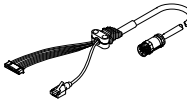
| Ordering data                                   |   |  |                  |          |                         |
|---|---|--|------------------|----------|-------------------------|
|   | For type                                      | Description  | Cable length [m] | Part No. | Type                    |
| <b>Motor cable for motor controller CMMO-ST</b> |   |  |                  |          |                         |
|   | EPCO-16<br>EMMS-ST-28                         | Straight plug<br>– Min. bending radius: 62 mm<br>– Suitable for use with energy chains<br>– Ambient temp.:<br>–40 ... +80 °C | 1.5              | 1449600  | NEBM-M12G8-E-1.5-Q5-LE6 |
|   |   |  | 2.5              | 1449601  | NEBM-M12G8-E-2.5-Q5-LE6 |
|   |   |  | 5                | 1449602  | NEBM-M12G8-E-5-Q5-LE6   |
|   |   |  | 7                | 1449603  | NEBM-M12G8-E-7-Q5-LE6   |
|   |   |  | 10               | 1449604  | NEBM-M12G8-E-10-Q5-LE6  |
|   | EPCO-25/-40<br>EMMS-ST-42/-57                 | Angled plug<br>– Min. bending radius: 62 mm<br>– Suitable for use with energy chains<br>– Ambient temp.:<br>–40 ... +80 °C   | 1.5              | 1450736  | NEBM-S1W9-E-1.5-Q5-LE6  |
|   |   |  | 2.5              | 1450737  | NEBM-S1W9-E-2.5-Q5-LE6  |
|   |   |  | 5                | 1450738  | NEBM-S1W9-E-5-Q5-LE6    |
|   |   |  | 7                | 1450739  | NEBM-S1W9-E-7-Q5-LE6    |
|   |   |  | 10               | 1450740  | NEBM-S1W9-E-10-Q5-LE6   |
|   |   | Straight plug<br>– Min. bending radius: 62 mm<br>– Suitable for use with energy chains<br>– Ambient temp.:<br>–40 ... +80 °C | 1.5              | 1450368  | NEBM-S1G9-E-1.5-Q5-LE6  |
|   |   |  | 2.5              | 1450369  | NEBM-S1G9-E-2.5-Q5-LE6  |
|   |   |  | 5                | 1450370  | NEBM-S1G9-E-5-Q5-LE6    |
|   |   |  | 7                | 1450371  | NEBM-S1G9-E-7-Q5-LE6    |
|   |   |  | 10               | 1450372  | NEBM-S1G9-E-10-Q5-LE6   |
|   | EMMS-ST-87                                    | Angled plug<br>– Min. bending radius: 80 mm<br>– Suitable for use with energy chains<br>– Ambient temp.:<br>–40 ... +80 °C   | 1.5              | 1450943  | NEBM-S1W15-E-1.5-Q7-LE6 |
|   |   |  | 2.5              | 1450944  | NEBM-S1W15-E-2.5-Q7-LE6 |
|   |   |  | 5                | 1450945  | NEBM-S1W15-E-5-Q7-LE6   |
|   |   |  | 7                | 1450946  | NEBM-S1W15-E-7-Q7-LE6   |
|   |   |  | 10               | 1450947  | NEBM-S1W15-E-10-Q7-LE6  |
|   |   | Straight plug<br>– Min. bending radius: 80 mm<br>– Suitable for use with energy chains<br>– Ambient temp.:<br>–40 ... +80 °C | 1.5              | 1450834  | NEBM-S1G15-E-1.5-Q7-LE6 |
|   |   |  | 2.5              | 1450835  | NEBM-S1G15-E-2.5-Q7-LE6 |
|   |   |  | 5                | 1450836  | NEBM-S1G15-E-5-Q7-LE6   |
|   |   |  | 7                | 1450837  | NEBM-S1G15-E-7-Q7-LE6   |
|   |   |  | 10               | 1450838  | NEBM-S1G15-E-10-Q7-LE6  |
| <b>Encoder cable</b>                            |   |  |                  |          |                         |
|   | EPCO-16/-25/-40<br>EMMS-ST-28/-42/<br>-57/-87 | Straight plug<br>– Min. bending radius: 68 mm<br>– Suitable for use with energy chains<br>– Ambient temp.:<br>–40 ... +80 °C | 1.5              | 1451586  | NEBM-M12G8-E-1.5-LE8    |
|   |   |  | 2.5              | 1451587  | NEBM-M12G8-E-2.5-LE8    |
|   |   |  | 5                | 1451588  | NEBM-M12G8-E-5-LE8      |
|   |   |  | 7                | 1451589  | NEBM-M12G8-E-7-LE8      |
|   |   |  | 10               | 1451590  | NEBM-M12G8-E-10-LE8     |
|   | EPCO-25/-40<br>EMMS-ST-42/-57/-87             | Angled plug<br>– Min. bending radius: 68 mm<br>– Suitable for use with energy chains<br>– Ambient temp.:<br>–40 ... +80 °C   | 1.5              | 1451674  | NEBM-M12W8-E-1.5-LE8    |
|   |   |  | 2.5              | 1451675  | NEBM-M12W8-E-2.5-LE8    |
|   |   |  | 5                | 1451676  | NEBM-M12W8-E-5-LE8      |
|   |   |  | 7                | 1451677  | NEBM-M12W8-E-7-LE8      |
|   |   |  | 10               | 1451678  | NEBM-M12W8-E-10-LE8     |

1) Other cable lengths on request.

| Ordering data   |  | Brief description | Cable length | Part No.                | Type |
|---|--|-------------------|--------------|-------------------------|------|
| <b>Connecting cable for motor controller CMMS-ST, for stepper motors</b>            |  |                   |              |                         |      |
|    | Control cable,<br>for I/O interface to any controller  | 2.5               | 552254       | NEBC-S1G25-K-2.5N-LE26  |      |
|    | Programming cable  | 1.5               | 160786       | PS1-ZK11-NULLMODEM-1,5M |      |
| <b>Connecting cable for motor controller SFC-LACI</b>                               |  |                   |              |                         |      |
|    | Motor cable,<br>for connecting motor and controller  | 2.5               | 556794       | NEBM-T1G6-T1G6-2.5      |      |
|   |  | 5                 | 556796       | NEBM-T1G6-T1G6-5        |      |
|   |  | 10                | 556798       | NEBM-T1G6-T1G6-10       |      |
|    | Encoder cable,<br>for connecting motor and controller  | 2.5               | 556795       | NEBM-T1G12-T1G12-2.5    |      |
|   |  | 5                 | 556797       | NEBM-T1G12-T1G12-5      |      |
|   |  | 10                | 556799       | NEBM-T1G12-T1G12-10     |      |
| <b>Connecting cable for motor controller SFC-DC</b>                                 |  |                   |              |                         |      |
|  | Supply cable,<br>for connecting load and logic supply  | 2.5               | 538914       | KPWR-MC-1-SUB-15HC-2,5  |      |
|   |  | 5                 | 538915       | KPWR-MC-1-SUB-15HC-5    |      |
|   |  | 10                | 538916       | KPWR-MC-1-SUB-15HC-10   |      |
|  | Motor cable,<br>for connecting motor and controller  | 2.5               | 538917       | KMTR-DC-SUB-15-M12-2,5  |      |
|   |  | 5                 | 538918       | KMTR-DC-SUB-15-M12-5    |      |
|   |  | 10                | 539316       | KMTR-DC-SUB-15-M12-10   |      |
|  | Control cable,<br>for I/O interface to any controller  | 2.5               | 538919       | KES-MC-1-SUB-15-2,5     |      |
|   |  | 5                 | 538920       | KES-MC-1-SUB-15-5       |      |
|   |  | 10                | 538921       | KES-MC-1-SUB-15-10      |      |
|  | Programming cable,<br>for parameterisation and commissioning via RS232 interface<br>using FCT software | 2.5               | 537926       | KDI-MC-M8-SUB-9-2,5     |      |
| <b>Connecting cable for motor controller CMMP-AS, for servo motors</b>              |  |                   |              |                         |      |
|  | Programming cable for<br>CMMP-AS-...-M0, CMMP-AS-...-M3  | 1.8               | 1501332      | NEBC-U1G-K-1.8-N-U2G    |      |

## Ordering data

|   | Brief description  | Cable length | Part No. | Type                   |
|---|--|--------------|----------|------------------------|
| <b>Connecting cable for motor unit MTR-DCI</b>                                    |  |              |          |                        |
|  | Motor cable for connecting the motor and controller  | 2.5 m        | 565369   | NEBM-S1G9-E-2.5-N-S1G9 |
|   |  | 5 m          | 565370   | NEBM-S1G9-E-5-N-S1G9   |
|   |  | 10 m         | 565371   | NEBM-S1G9-E-10-N-S1G9  |
|  | Control cable for I/O connection to any PLC controller   | 2.5 m        | 537923   | KES-MC-1-SUB-9-2,5     |
|   |  | 5 m          | 537924   | KES-MC-1-SUB-9-5       |
|   |  | 10 m         | 537925   | KES-MC-1-SUB-9-10      |
| <b>Supply cable for motor unit MTR-DCI and End position controller CMFL</b>       |  |              |          |                        |
|  | Supply cable   | 2.5 m        | 537931   | KPWR-MC-1-SUB-9HC-2,5  |
|   |  | 5 m          | 537932   | KPWR-MC-1-SUB-9HC-5    |
|   |  | 10 m         | 537933   | KPWR-MC-1-SUB-9HC-10   |
|  | Programming cable<br>For parameterisation and commissioning via the RS232 interface using FCT software | 2.5 m        | 537926   | KDI-MC-M8-SUB-9-2,5    |

| Ordering data   |   | Brief description | Cable length   | Part No.                        | Type |
|---|---|-------------------|----------------|---------------------------------|------|
| <b>Connection options from I/O interface to controller</b>  |   |                   |                |                                 |      |
|                                    | Connects the motor controller to the connection block   | 1.0               | <b>8001374</b> | <b>NEBC-S1G25-K-1.0-N-S1G25</b> |      |
|   |   | 2.0               | <b>8001375</b> | <b>NEBC-S1G25-K-2.0-N-S1G25</b> |      |
|   |   | 5.0               | <b>8001376</b> | <b>NEBC-S1G25-K-5.0-N-S1G25</b> |      |
| <b>Control cable</b>  |   |                   |                |                                 |      |
|                                    | Is connected to the motor controller. The other end comprises individual flying leads   | 3.2               | <b>8001373</b> | <b>NEBC-S1G25-K-3.2-N-LE25</b>  |      |
| <b>Connecting cable for control blocks</b>  |   |                   |                |                                 |      |
|                                    | For connecting to control block CPX-FEC<br>Prepared for combining with plug FBS-SUB-9-GS-1X9POL-B<br>Open end, Sub-D socket, 15-pin | 5                 | <b>539642</b>  | <b>FEC-KBG7</b>                 |      |
|                                    | For connecting to control block CPX-FEC<br>Sub-D plug, 15-pin<br>Sub-D socket, 15-pin   | 2.5               | <b>539643</b>  | <b>FEC-KBG8</b>                 |      |
|                                  | Programming cable<br>Sub-D plug, 15-pin<br>Sub-D socket, 15-pin   | 3                 | <b>533534</b>  | <b>FEDZ-PC</b>                  |      |
|                                  | Connecting cable, serial<br>Sub-D plug, 9-pin<br>Sub-D socket, 9-pin  | 3                 | <b>575299</b>  | <b>FEDZ-PC-9PIN</b>             |      |
| <b>Cable for compact vision system SBOC/SBOI</b> <span style="float: right;">Technical data → Internet: sboa</span> |   |                   |                |                                 |      |
|                                  | Ethernet diagnostic cable<br>Straight socket, M12x1, 4-pin, D-coded<br>RJ45 plug  | 3                 | <b>542139</b>  | <b>SBOA-K30E-M12S</b>           |      |
|                                  | For integration in a CPI system<br>Straight socket, M12x1, 5-pin<br>Angled plug, M9x0.5, 5-pin                                      | 2                 | <b>548823</b>  | <b>SBOA-K20CP-WS</b>            |      |
|                                  | For I/O expansion<br>Straight socket, M12x1, 5-pin<br>Straight socket, M9x0.5, 5-pin<br>Straight plug, M12x1, 4-pin                 | 2                 | <b>548824</b>  | <b>SBOA-K20CP-SUP</b>           |      |
| <b>Connecting cable for multi-axis controller CMXR-C1</b>   |   |                   |                |                                 |      |
|                                  | Connecting cable:<br>between multi-axis controller CMXR and teach pendant CDSA via interface housing CAMI-C                         | 5                 | <b>552104</b>  | <b>NESC-C-D1-5-C1</b>           |      |
|   |   | 10                | <b>552105</b>  | <b>NESC-C-D1-10-C1</b>          |      |
|   |   | 15                | <b>552106</b>  | <b>NESC-C-D1-15-C1</b>          |      |

## Function

CPX Maintenance Tool (CPX-FMT) combines service software with a connecting adapter. The service software is a tool for the design, parameterisation and online diagnostics of the CPX terminal. The USB-to-M12 adapter features built-in galvanic isolation (between CPX and PC) and enables a PC to be connected to the diagnostic interface of the CPX terminal.

- Adapter
- Software on CD-ROM



## Application

Only from Festo

The CPX-FMT software enables access to CPX valve terminals via Ethernet with the control block CPX-FEC and the bus nodes EtherNet/IP (FB 32) and PROFINET (FB 33, FB 34, FB 35, FB 41). The bus nodes or control block can be connected directly to the PC via a USB adapter from Festo. Similar to the CPX-MMI, diagnostic data such as

the error trace or module diagnostics can be read out and parameters can be modified in plain text. In contrast to the CPX-MMI, the data can be used directly on a PC. There is an option, for example, to send screenshots of a configuration or the current error trace directly via e-mail. In addition, CPX configurations can also be saved

and archived directly as a CPX-FMT project. Undocumented changes can subsequently be identified using the online/offline comparison function. On-site tests such as the actuation of valves or the emulation of sensor feedback (in both cases called “forcing”), for example, can be

performed without an existing controller infrastructure. It must be noted that with both the CPX-FMT and the CPX-MMI, only local parameters on the CPX valve terminal can be changed and saved. The configuration of the networks or controller software cannot be influenced.

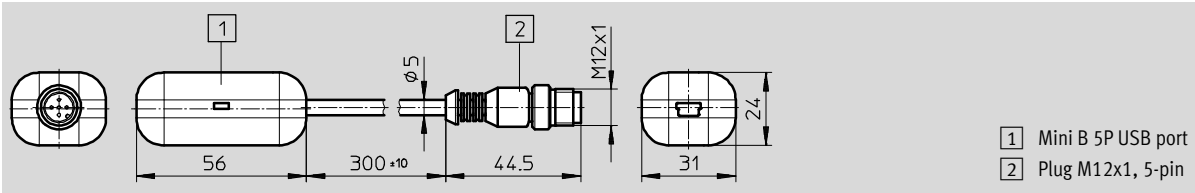
## General technical data

|   |  |  |
|---|--|--|
| Type                                    | NEFC-M12G5-0.3-U1G5  |  |
| System requirements                     | PC   | IBM-compatible                             |
|   | Drive  | CD-ROM                                     |
|   | Interfaces   | USB port (specification USB 1.1 or higher) |
|   | Operating system   | Microsoft Windows 2000 or XP               |
| Functional range                        | <ul style="list-style-type: none"> <li>• Configuration and parameterisation</li> <li>• Reading out of system, module, channel diagnostics and error trace</li> <li>• Saving of the configuration as a project</li> <li>• Integration of plug-ins/links to self-executing programs</li> </ul> |  |
| Scope of delivery                       | <ul style="list-style-type: none"> <li>• Adapter M12, 5-pin to mini USB socket</li> <li>• CD-ROM with installation program</li> </ul>  |  |
| Type of mounting                        | Screw-in   |  |
| Electrical connection                   | Plug M12x1, 5-pin  |  |
| Adapter cable composition               | 4 x 0.34 mm <sup>2</sup>   |  |
| Cable length                            | [m]  | 0.3  |
| Protection class to EN 60529            | IP20   |  |
| CE mark (see declaration of conformity) | To EU EMC Directive  |  |
| Ambient temperature                     | [°C]   | -5 ... +50                                 |
| Material                                | Housing  | ABS  |
|   | Cable sheath   | PUR  |
|   | Pin contact  | Gold-plated brass                          |
| Note on materials                       | RoHS-compliant   |  |

## Dimensions


Download CAD data → [www.festo.com](http://www.festo.com)

Adapter



2

## Ordering data

| Designation   | Part No.      | Type                       |
|---|---------------|----------------------------|
|  CPX Maintenance Tool (CPX-FMT), software and USB-to-M12 adapter | <b>547432</b> | <b>NEFC-M12G5-0.3-U1G5</b> |

## Connecting cable KV-M12

- Plug socket with cable for diagnostic interface (to terminal CPX)
- Pre-assembled at both ends
- Cable lengths: 1.5 m and 3.5 m
- 5-pin/4-wire
- Round plug



## General technical data

| Type   | KV-M12-M12-...                    |                    |
|--|-----------------------------------|--------------------|
| Type of mounting                                   | M12 union nut                     |                    |
| Mounting position                                  | Any                               |                    |
| Operating voltage range                            | [V AC]                            | 30                 |
|  | [V DC]                            | 36                 |
| Current-carrying capacity                          | [A]                               | 4                  |
| Cable diameter                                     | [mm]                              | 5                  |
| Protection class to EN 60 529                      | IP67 (assembled)                  |                    |
| Material of housing                                | Polyurethane                      |                    |
| Material of contacts                               | Socket                            | Gold-plated brass  |
|  | Plug                              | Gold-plated bronze |
| Material of union nut                              | Nickel-plated/chrome-plated brass |                    |
| Material of cable sheath                           | Polyurethane                      |                    |
| Material note                                      | RoHS compliant                    |                    |
| Ambient temperature                                | [°C]                              | -25 ... +70        |
| Ambient temperature of flexible cable installation | [°C]                              | -5 ... +70         |

## Ordering data

|  | Electrical connection                  | Constructional design [mm <sup>2</sup> ] | Product weight | Cable length | Type                  | Part No.       |
|--|--|--|----------------|--------------|-----------------------|----------------|
|  |  |  | [g]            | [m]          |                       |                |
|  | Straight plug – straight socket, 5-pin | 4x0.34                                   | 97             | 1.5          | <b>KV-M12-M12-1,5</b> | <b>529 044</b> |
|  | Straight plug – straight socket, 5-pin | 4x0.34                                   | 182            | 3.5          | <b>KV-M12-M12-3,5</b> | <b>530 901</b> |

# Connecting cables for control systems

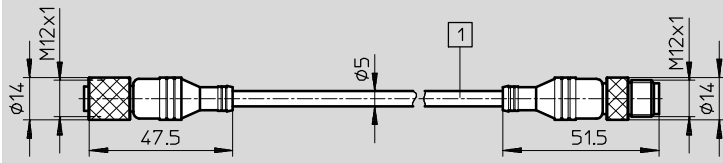
KV-M12, for Operator unit CPX-MMI-1 – Technical data



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

KV-M12-M12-...



1 Cable length of 1.5 m or 3.5 m

2

## Wiring allocation (socket/plug view)

KV-M12-M12-...

View – socket

Wiring allocation

View – plug

|              |   |          |   |              |   |          |        |   |      |   |        |              |   |       |   |              |              |   |       |   |              |        |   |        |   |        |  |
|--------------|---|----------|---|--------------|---|----------|--------|---|------|---|--------|--------------|---|-------|---|--------------|--------------|---|-------|---|--------------|--------|---|--------|---|--------|--|
|              | <table border="0"> <tr> <td>1 (+24V)</td> <td>↔</td> <td>Brown</td> <td>↔</td> <td>1 (+24V)</td> </tr> <tr> <td>3 (0V)</td> <td>↔</td> <td>Blue</td> <td>↔</td> <td>3 (0V)</td> </tr> <tr> <td>2 (RxD, MMI)</td> <td>↔</td> <td>White</td> <td>↔</td> <td>2 (TxD, CPX)</td> </tr> <tr> <td>4 (TxD, MMI)</td> <td>↔</td> <td>Black</td> <td>↔</td> <td>4 (RxD, CPX)</td> </tr> <tr> <td>5 (FE)</td> <td>↔</td> <td>Screen</td> <td>↔</td> <td>5 (FE)</td> </tr> </table> | 1 (+24V) | ↔ | Brown        | ↔ | 1 (+24V) | 3 (0V) | ↔ | Blue | ↔ | 3 (0V) | 2 (RxD, MMI) | ↔ | White | ↔ | 2 (TxD, CPX) | 4 (TxD, MMI) | ↔ | Black | ↔ | 4 (RxD, CPX) | 5 (FE) | ↔ | Screen | ↔ | 5 (FE) |  |
| 1 (+24V)     | ↔   | Brown    | ↔ | 1 (+24V)     |   |          |        |   |      |   |        |              |   |       |   |              |              |   |       |   |              |        |   |        |   |        |  |
| 3 (0V)       | ↔   | Blue     | ↔ | 3 (0V)       |   |          |        |   |      |   |        |              |   |       |   |              |              |   |       |   |              |        |   |        |   |        |  |
| 2 (RxD, MMI) | ↔   | White    | ↔ | 2 (TxD, CPX) |   |          |        |   |      |   |        |              |   |       |   |              |              |   |       |   |              |        |   |        |   |        |  |
| 4 (TxD, MMI) | ↔   | Black    | ↔ | 4 (RxD, CPX) |   |          |        |   |      |   |        |              |   |       |   |              |              |   |       |   |              |        |   |        |   |        |  |
| 5 (FE)       | ↔   | Screen   | ↔ | 5 (FE)       |   |          |        |   |      |   |        |              |   |       |   |              |              |   |       |   |              |        |   |        |   |        |  |



## Operator unit CPX-MMI-1

The operator unit is a small, convenient commissioning and service device for the CPX terminal. It provides data polling, configuration and diagnostic functions for CPX terminals. Its extremely flexible application range means that data can be read in or out at any location. IP65 compatibility makes it suitable for use in harsh industrial environments.

- Width 81 mm



## Application

### Functions

- Advance commissioning through the monitoring/forcing of inputs and outputs without fieldbus master/PLC
- Test function for parameter settings, for example fail-safe of the outputs or switch-on delay of the inputs
- Plain-text diagnostics of module and channel-oriented errors
- Condition monitoring: preselection/loading of counters, activation of the channels to be monitored
- Display of the last 40 error occurrences with timestamp
- Identification of sporadic causes of errors through display of the diagnostic history
- Password protection

### Connection

The operator unit is connected to the CPX bus nodes or control block, as appropriate, using a M12 connecting cable.

The voltage for the operator unit is supplied by the CPX component

### Communication

Once connected to the CPX terminal, the operator unit loads the available configuration for the I/O modules, valves, etc.

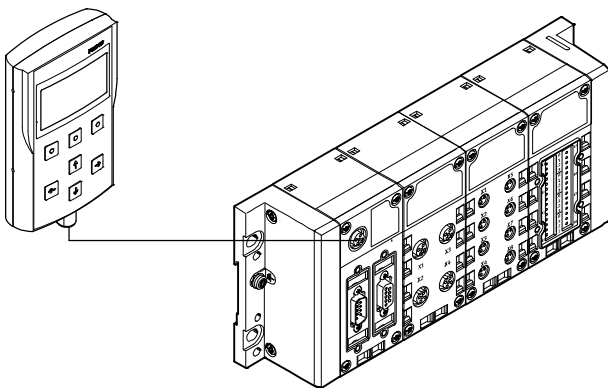
This ensures the availability of up-to-date texts, messages, menus and displays. Status information, diagnostic messages and parameter bits are then exchanged during operation.

### Assembly

A mounting bracket for the operator unit offers the option of wall or H-rail mounting.

The mounting bracket also has an option for temporary mounting using a hanging device.

## Connection



The operator unit is connected to the CPX terminal using a pre-assembled connecting cable.

# Connecting cables for control systems

Cables and plugs for operator units FED – Technical data

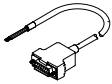

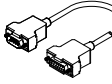
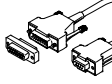
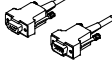
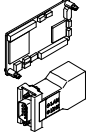
FESTO

## Cables and plugs for operator units FED



2

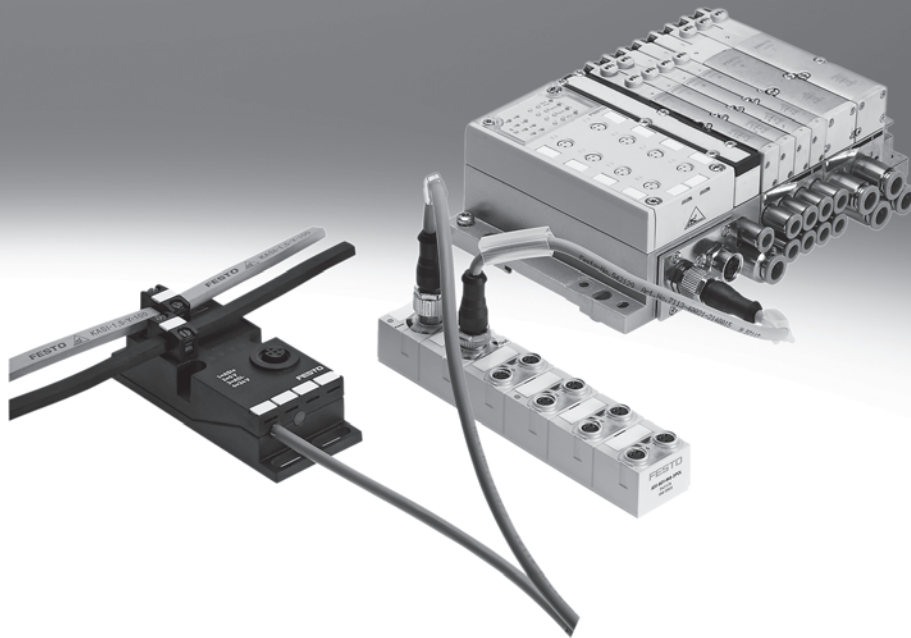
### Ordering data

|   | Description  | Electrical connection                      | Cable length [m] | Part No.      | Type                         |
|---|--|--|------------------|---------------|------------------------------|
| <b>Cables and plugs</b>   |  |  |                  |               |                              |
|    | For connecting to control block CPX-FEC<br>Prepared for combining<br>with plug FBS-SUB-9-GS-1X9POL-B | Open end<br>Sub-D socket, 15-pin           | 5                | <b>539642</b> | <b>FEC-KBG7</b>              |
|   | Suitable for control block CPX-FEC<br>For combining with cable FEC-KBG7                              | Sub-D plug, 9-pin                          | –                | <b>534497</b> | <b>FBS-SUB-9-GS-1X9POL-B</b> |
|  | For connecting to control block CPX-FEC  | Sub-D plug, 15-pin<br>Sub-D socket, 15-pin | 2.5              | <b>539643</b> | <b>FEC-KBG8</b>              |
|  | Programming cable  | Sub-D plug, 15-pin<br>Sub-D socket, 15-pin | 3                | <b>533534</b> | <b>FEDZ-PC</b>               |
|  | Connecting cable, serial   | Sub-D plug, 9-pin<br>Sub-D socket, 9-pin   | 3                | <b>575299</b> | <b>FEDZ-PC-9PIN</b>          |
| <b>Fieldbus interface</b>   |  |  |                  |               |                              |
|  | Ethernet TCP interface module<br>(CODESYS controller software)                                       | Sub-D adapter, 9-pin to RJ45               |                  | <b>543450</b> | <b>FEDZ-IET TCP</b>          |

## Ordering data

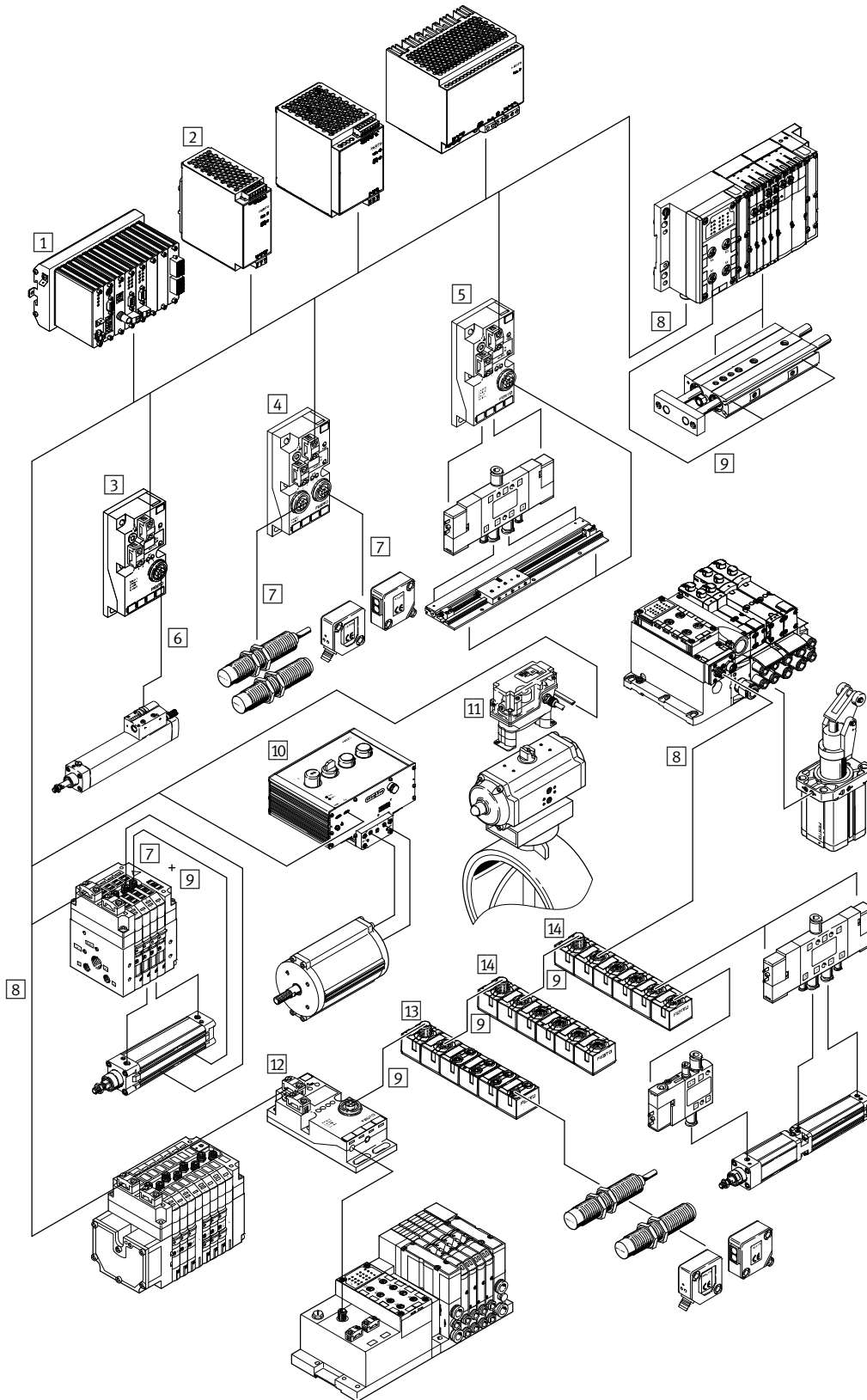
|                  | Description   | Part No.                        | Type                              |
|------------------|---|---------------------------------|-----------------------------------|
| Connecting cable |   | Technical data → Internet: nebs |                                   |
|                  | Cable for power supply and digital I/Os (M12, 12-pin on open end); length 5 m or 10 m           | <b>3058614</b>                  | <b>NEBS-M12G12-KS-5-LE12</b>      |
|                  |   | <b>2912452</b>                  | <b>NEBS-M12G12-KS-10-LE12</b>     |
|                  | Serial data cable (M12, 5-pin on open end); length 5 m or 10 m                                  | <b>8030962</b>                  | <b>NEBS-M12G5-KS-5-LE5</b>        |
|                  |   | <b>8030963</b>                  | <b>NEBS-M12G5-KS-10-LE5</b>       |
|                  | Cable for connecting the external lights SBAL (M12, 12-pin on M12, 12-pin); length 0.5 m or 2 m | <b>3056124</b>                  | <b>NEBS-M12G12-KS-0.5-SM12G12</b> |
|                  |   | <b>3058527</b>                  | <b>NEBS-M12G12-KS-2-SM12G12</b>   |
| Connecting cable |   | Technical data → Internet: nebc |                                   |
|                  | Ethernet cable (M12, 4-pin on RJ45); length 3 m or 10 m   | <b>8031121</b>                  | <b>NEBC-D12G4-KS-3-R3G4</b>       |
|                  |   | <b>8031122</b>                  | <b>NEBC-D12G4-KS-10-R3G4</b>      |

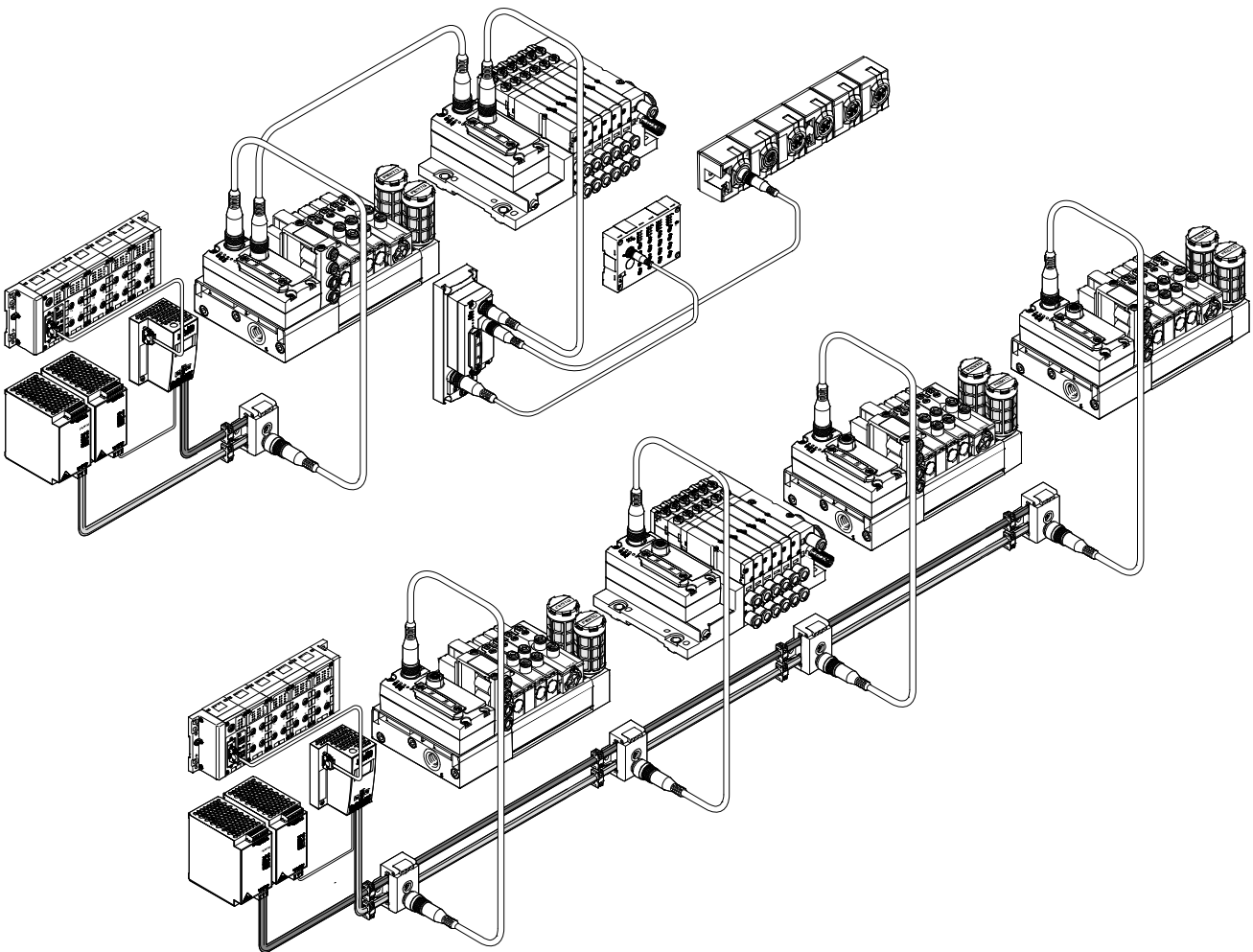




## AS-interface topology

3





|    | Type                               | → Page/Internet         |
|----|------------------------------------|-------------------------|
| 1  | Industrial PC with fieldbus master |                         |
| 2  | Power supply unit                  | SVG1/230VAC-ASI-SA      |
| 3  | AS-interface module                | ASI-EVA-2E2A-M12-8POL-Z |
| 4  | AS-interface module                | ASI-EVA-4E-M12-5POL     |
| 5  | AS-interface module                | ASI-EVA-2E2A, 2E1A      |
| 6  | Connecting cable                   | KM12-8GD8GS-2-PU        |
| 7  | Connecting cable                   | KM8-M8-GSGD-...         |
|    |                                    | NEBU-M8-...             |
| 8  | Flat cable                         | KASI-1,5-Y-100          |
|    | Cable socket                       | ASI-SD                  |
|    | Plug socket                        | FBSD-GD                 |
| 9  | Connecting cable                   | NEBU-M12G5-F-0.2-M12G4  |
|    |                                    | KM12-M12-GSGD           |
|    |                                    | KM12 M12-GSWD-...       |
|    |                                    | KM12-DUO-M8-GDGD        |
| 10 | Local controller                   | DLP-VSE-3-5/3-G-ASI     |
| 11 | Limit switch attachment            | DAPZ-SB-I-30DC-DSAM-RO  |
| 12 | Cable distributor                  | ASI-KVT-FKx2-M12        |
| 13 | AS-interface module                | ASI-8DI-M8-3POL         |
| 14 | AS-interface module                | ASI-4DI3DO-M12X2-5POL-Z |

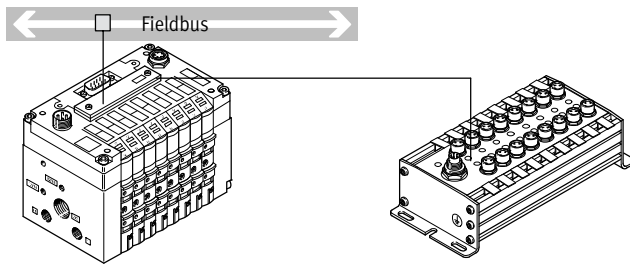
# Connecting cables for fieldbuses

KVI – Connection options for CP installation system

FESTO

## Fieldbus Direct with CP string extension

CPV valve terminal

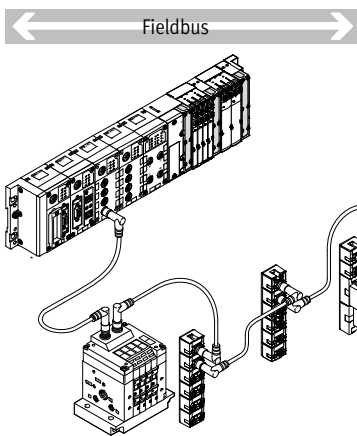


- 4 to 8 valve positions
- DeviceNet
- CANopen
- Profibus DP
- ABB CS31
- Interbus
- Moeller Suconet
- Festo fieldbus
- Beckhoff
- CC-Link
- 4 to 16 solenoid coils

More information  
→ Internet: cpv

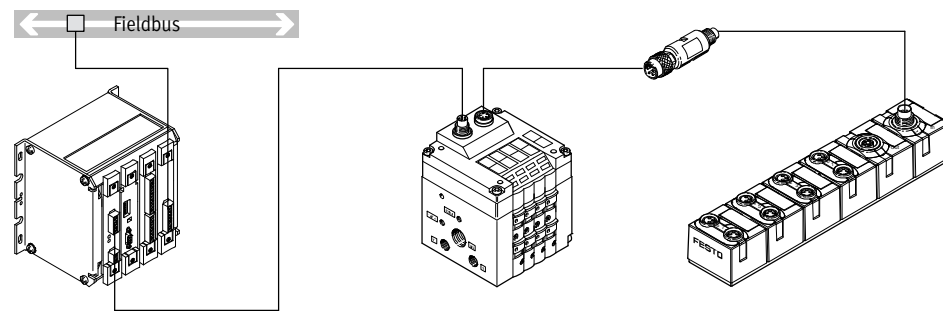
3

## CPX with CP interface



- Max. 4 installation strings per CP interface
- Max. 10 metre line length per string (radius)
- Max. 4 CP modules per string
- Max. 32 inputs and max. 32 outputs per string

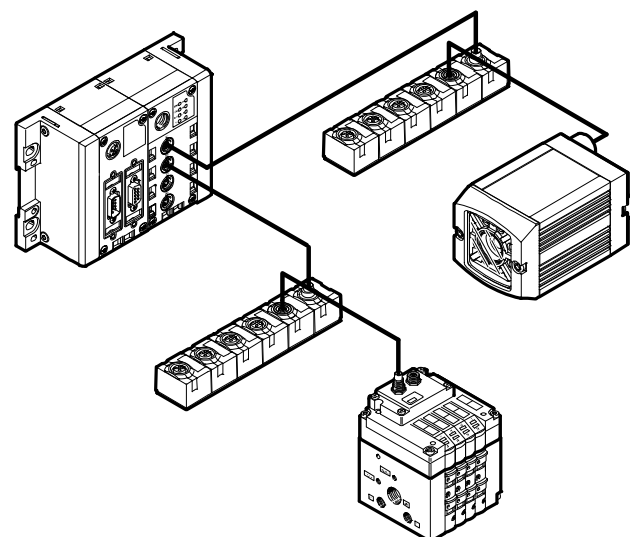
## Axis controller SPC200 with CP interface



- Max. 64 inputs and 64 outputs via fieldbus
- DeviceNet, Interbus or Profibus connection

More information  
→ Internet: spc200

## Compact Vision System SBOC-Q/SBOI-Q with CP interface



The Compact Vision System SBOx-Q can be integrated into a Festo CPI network. In this case it functions like a binary module with 16 inputs and outputs.

In combination with a CPX-CPI module and a CPX fieldbus, for example, the camera can be accessed via Profibus DP, Interbus, DeviceNet, CANopen and CC-Link.

- Address requirement: 16 digital inputs/outputs
- CPI connection

More information  
→ Internet: sboc-q, sboi-q



**Connecting cable**  
**KV-M12**


- Plug socket with cable for diagnostic interface (to terminal CPX)
- Pre-assembled at both ends
- Cable lengths: 1.5 m and 3.5 m
- 5-pin/4-wire
- Round plug



**General technical data**

| Type   | KV-M12-M12-...                    |                    |
|--|-----------------------------------|--------------------|
| Type of mounting                                   | M12 union nut                     |                    |
| Mounting position                                  | Any                               |                    |
| Operating voltage range                            | [V AC]                            | 30                 |
|  | [V DC]                            | 36                 |
| Current-carrying capacity                          | [A]                               | 4                  |
| Cable diameter                                     | [mm]                              | 5                  |
| Protection class to EN 60 529                      | IP67 (assembled)                  |                    |
| Material of housing                                | Polyurethane                      |                    |
| Material of contacts                               | Socket                            | Gold-plated brass  |
|  | Plug                              | Gold-plated bronze |
| Material of union nut                              | Nickel-plated/chrome-plated brass |                    |
| Material of cable sheath                           | Polyurethane                      |                    |
| Material note                                      | RoHS compliant                    |                    |
| Ambient temperature                                | [°C]                              | -25 ... +70        |
| Ambient temperature of flexible cable installation | [°C]                              | -5 ... +70         |

**Ordering data**

|   | Electrical connection                  | Constructional design [mm <sup>2</sup> ] | Product weight | Cable length | Type                  | Part No.       |
|---|--|--|----------------|--------------|-----------------------|----------------|
|   |  |  | [g]            | [m]          |                       |                |
|  | Straight plug – straight socket, 5-pin | 4x0.34                                   | 97             | 1.5          | <b>KV-M12-M12-1,5</b> | <b>529 044</b> |
|   | Straight plug – straight socket, 5-pin | 4x0.34                                   | 182            | 3.5          | <b>KV-M12-M12-3,5</b> | <b>530 901</b> |

# Connecting cables for fieldbuses

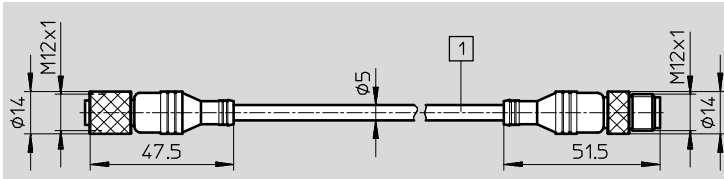
KV-M12, for diagnostic interface – Technical data



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

KV-M12-M12-...



1 Cable length of 1.5 m or 3.5 m

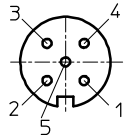
## Wiring allocation (socket/plug view)

KV-M12-M12-...

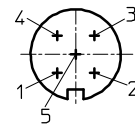
View – socket

Wiring allocation

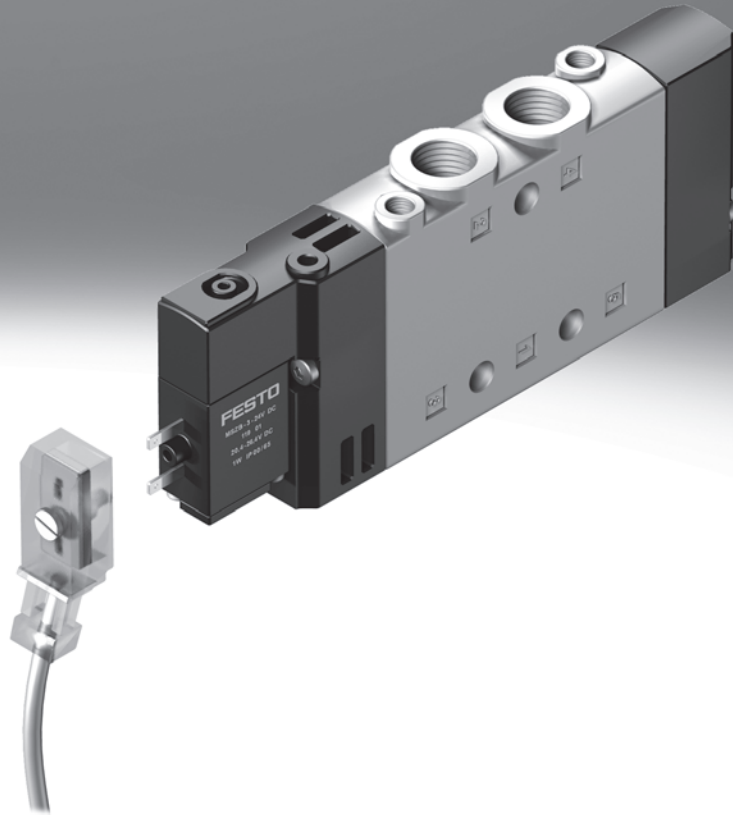
View – plug



|               |   |        |   |               |
|---------------|---|--------|---|---------------|
| 1 (+24V)      | ↔ | Brown  | ↔ | 1 (+24V)      |
| 3 (0V)        | ↔ | Blue   | ↔ | 3 (0V)        |
| 2 (Rx/D, MMI) | ↔ | White  | ↔ | 2 (Tx/D, CPX) |
| 4 (Tx/D, MMI) | ↔ | Black  | ↔ | 4 (Rx/D, CPX) |
| 5 (FE)        | ↔ | Screen | ↔ | 5 (FE)        |

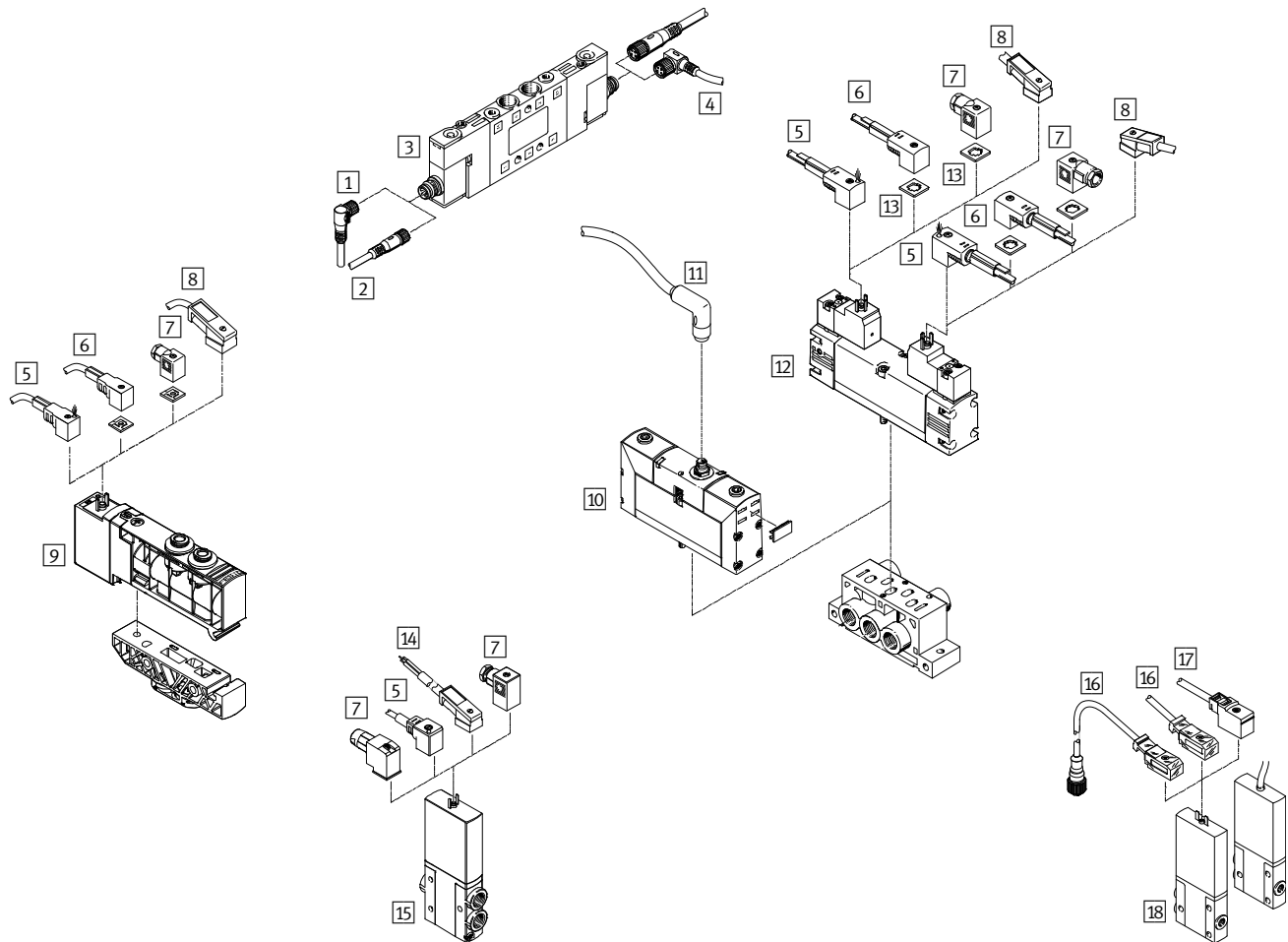


3



4

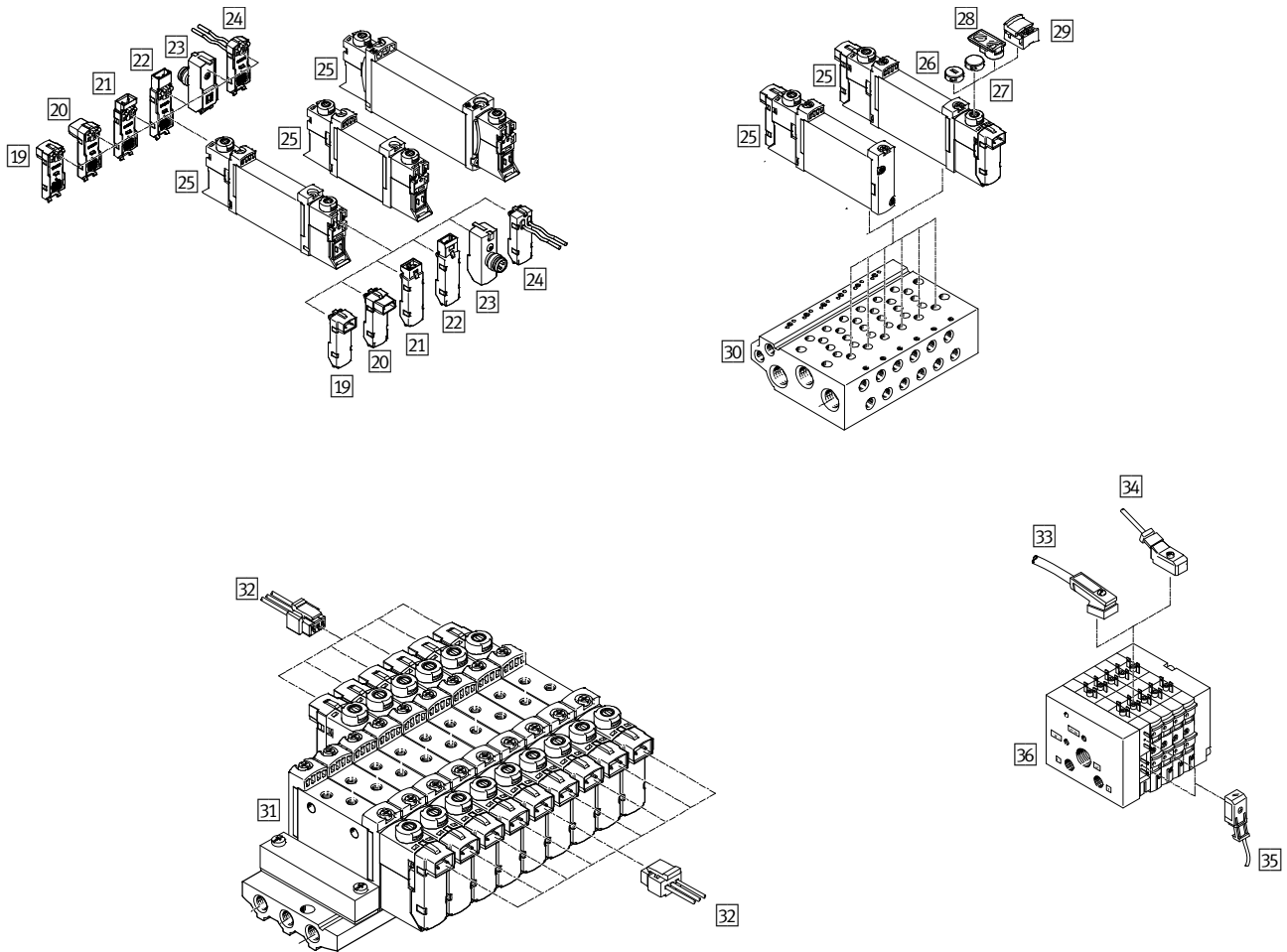
## Valves with individual electrical connection



4

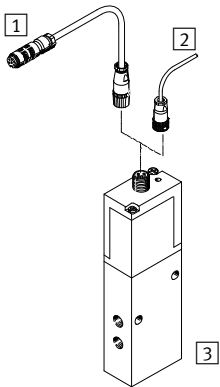
|       | Type                   | → Page/Internet   |
|-------|------------------------|-------------------|
| 1     | Connecting cable       | NEBV-M8W4L-...    |
| 2 + 4 | Connecting cable       | SIM-K-4-GD-...-PU |
|       |                        | SIM-K-4-...-WD-PU |
|       |                        | NEBU              |
| 3     | Solenoid valve         | CPE               |
| 5     | Connecting cable       | KMEB-1-24-...-LED |
| 6     | Connecting cable       | KMEB-1-230AC-...  |
| 7     | Plug socket            | MSSD-EB           |
| 8     | Connecting cable       | KMEB-2-24-2,5-LED |
| 9     | Solenoid valve         | VUVB              |
| 10    | Solenoid valve         | VSVA-...R-...     |
| 11    | Connecting cable       | NEBU              |
|       |                        | SIM               |
| 12    | Solenoid valve         | VSVA-...C-...     |
| 13    | Illuminating seal      | MEB-LD-...        |
| 14    | Plug socket with cable | KMEB-2            |
| 15    | Solenoid valve         | MHE4-...          |
| 16    | Plug socket with cable | KMYZ-3            |
| 17    | Plug socket with cable | KMYZ-4-...-B      |
| 18    | Solenoid valve         | MHE2-...          |

## Valves with individual electrical connection






|    |   | Type                           | → Page/Internet |
|----|---|--------------------------------|-----------------|
| 19 | E-box, bipolar/reduction of holding current         | VAVE-L1-1VH2-L                 | vave            |
| 20 | E-box, bipolar/reduction of holding current         | VAVE-L1-1VS2-L                 | vave            |
| 21 | E-box, bipolar/reduction of holding current         | VAVE-L1-1VH3-L                 | vave            |
| 22 | E-box, bipolar/reduction of holding current         | VAVE-L1-1VS3-L                 | vave            |
| 23 | E-box, bipolar/reduction of holding current         | VAVE-L1-1VR8-L                 | vave            |
|    |   | VAVE-L1-1VR1-L                 |                 |
| 24 | Elektrische Anschlussplatte, Funkenlöschung/bipolar | E-box, spark arresting/bipolar | vave            |
| 25 | Solenoid valve, individual valve / plug-in          | VTUG-10/14/18                  | vtug            |
| 26 | Cover cap, non-detenting                            | VMPA-HBT-B                     | vmpa-htb        |
| 27 | Cover cap, covered                                  | VMPA-HBV-B                     | vmpa-hbv        |
| 28 | Inscription label holder                            | ASLR-D                         | aslr            |
| 29 | Cover cap, detenting                                | VAMC-L1-CD                     | vamc-l1         |
| 30 | Manifold rails                                      | VABM-L1-10...-G18-...          | vabm            |
| 31 | Solenoid valve                                      | VUVG-L10, VUVG-S10             | vuvg            |
| 32 | Plug socket with cable                              | NEBV-H1G2-...-LE2              | 129             |
| 33 | Plug socket with cable                              | KMEB-2-24-M12-...-LED          | 108             |
| 34 | Connecting cable                                    | KMYZ-7-24-...-LED-PUR          | 123             |
| 35 | Connecting cable                                    | KRP-1-24-...                   | 125             |
| 36 | Valve terminal                                      | CPV10                          | cpv10           |

## Proportional directional control valves MPYE









|  | Type      | → Page/Internet |
|--|-----------|-----------------|
| 1 Connecting cable                       | KMPYE     | 134             |
| 2 Connecting cable                       | KVIA-MPYE | 160             |
| 3 Proportional directional control valve | MPYE      | mpye            |

| Version   | Type                           | Electrical connection                                | for solenoid coil                                      |                          |                            | → Page/<br>Internet |
|---|--------------------------------|--|--|--------------------------|----------------------------|---------------------|
|   |                                |  | MD/MH<br>MSG/MSW<br>MSN1<br>VACC-...-A1<br>VACN-...-A1 | MSFG/MSFW<br>VACF-...-B2 | VACS-...-C1<br>VACF-...-C1 |                     |
|  | <b>KMC</b>                     | Pin allocations<br>type A, to<br>EN 175301-803       | ■  | -                        | -                          | 102                 |
|  | <b>KMF</b>                     | Pin allocations<br>type B, to<br>industrial standard | -  | ■                        | -                          | 106                 |
|  | <b>KMEB-1</b><br><b>KMEB-2</b> | Pin allocations<br>type C, to<br>EN 175301-803       | -  | -                        | ■                          | 108                 |

# Connecting cables for valves

Selection aid

FESTO

| Version   | Type                              | Electrical connection                          | for standard valves  |            |            |      |      |             |            |            |                    |            |      |     |           |     |            | → Page/<br>Internet |            |    |     |
|---|-----------------------------------|--|----------------------|------------|------------|------|------|-------------|------------|------------|--------------------|------------|------|-----|-----------|-----|------------|---------------------|------------|----|-----|
|   |                                   |  | Namur (VDI/VDE 3845) |            |            |      |      | ISO 15407-1 |            |            | ISO 5599-1         |            |      |     | ISO 15218 |     |            |                     |            |    |     |
|   |                                   |  | VSNB                 | VSNC...-A1 | VSNC...-B2 | MN1H | NVF3 | MFH         | VSVA...-C1 | VSVA...-R2 | VSVA...-R3/-...-R5 | VSVA...-R5 | MN1H | MFH | MEBH      | MDH | VSCS...-C1 |                     | VSCS...-R3 | MD |     |
|    | <b>KMC</b>                        | Pin allocations type A, to EN 175301-803       | ■                    | ■          | -          | ■    | -    | -           | -          | -          | -                  | -          | -    | ■   | -         | -   | ■          | -                   | -          | ■  | 102 |
|    | <b>KMF</b>                        | Pin allocations type B, to industrial standard | -                    | -          | ■          | -    | ■    | ■           | -          | -          | -                  | -          | -    | -   | ■         | -   | -          | -                   | -          | -  | 106 |
|    | <b>KMEB-1</b><br><b>KMEB-2</b>    | Pin allocations type C, to EN 175301-803       | -                    | -          | -          | -    | -    | -           | ■          | -          | -                  | -          | -    | -   | -         | -   | ■          | -                   | -          | -  | 108 |
|    | <b>NEBU-M8</b><br><b>SIM-M8</b>   | M8x1, 4-pin                                    | -                    | -          | -          | -    | -    | -           | -          | ■          | -                  | -          | -    | -   | -         | -   | -          | -                   | -          | -  | 24  |
|   | <b>SIM-M12</b><br><b>KM12</b>     | M12x1, 4-pin                                   | -                    | -          | -          | -    | -    | -           | -          | -          | ■                  | ■          | -    | -   | ■         | ■   | -          | ■                   | -          | -  | 32  |
|  | <b>NEBU-M12</b><br><b>SIM-M12</b> | M12x1, 5-pin                                   | -                    | -          | -          | -    | -    | -           | -          | -          | ■                  | ■          | -    | -   | -         | -   | -          | -                   | -          | -  | 35  |

4













| Version | Type              | Electrical connection                       | for universal directional control valves |           |                 |                 |           |           |           |             |       |          |        |                  |                  |                   | → Page/<br>Internet |      |                  |                  |                     |                       |                      |   |   |     |     |
|---------|-------------------|---|--|-----------|-----------------|-----------------|-----------|-----------|-----------|-------------|-------|----------|--------|------------------|------------------|-------------------|---------------------|------|------------------|------------------|---------------------|-----------------------|----------------------|---|---|-----|-----|
|         |                   |   | VUVS...C1                                | VUVS...B2 | VUVG...H2/...H3 | VUVG...S2/...S3 | VUVG...R1 | VUVG...R8 | VUVB...C1 | CPV10/CPV14 | CPV18 | CPV...EX | CPV-SC | CPE10/CPE14-M1BH | CPE10/CPE14-M1CH | CPE18/CPE24-M...H |                     | VMPA | MFH (Tiger 2000) | MVH (Tiger 2000) | MFH (Tiger Classic) | MEBH (Midi-Pneumatik) | MEH (Midi-Pneumatik) |   |   |     |     |
|         | KMV               | Pin allocations type B, to EN 175301-803    | -  | -         | -               | -               | -         | -         | -         | -           | -     | -        | -      | -                | -                | -                 | -                   | -    | ■                | -                | -                   | -                     | -                    | - | - | 104 |     |
|         | KMF               | Pin allocations type B, industrial standard | -  | ■         | -               | -               | -         | -         | -         | -           | -     | -        | -      | -                | -                | -                 | -                   | -    | ■                | -                | ■                   | -                     | -                    | - | - | -   | 106 |
|         | KMEB-1<br>KMEB-2  | Pin allocations type C, to EN 175301-803    | ■  | -         | -               | -               | -         | -         | ■         | -           | ■     | -        | -      | -                | ■                | -                 | -                   | -    | -                | -                | -                   | ■                     | -                    | - | - | 108 |     |
|         | KME               | Pin allocations type C, industrial standard | -  | -         | -               | -               | -         | -         | -         | -           | -     | -        | -      | -                | -                | -                 | -                   | -    | -                | -                | -                   | -                     | -                    | - | ■ | 112 |     |
|         | KMYZ-3            | Pin allocations type ZC, metric screw       | -  | -         | -               | -               | -         | -         | -         | -           | -     | -        | ■      | -                | -                | -                 | -                   | -    | -                | -                | -                   | -                     | -                    | - | - | 116 |     |
|         | KMYZ-4-...-B      | Pin allocations type ZC, metric screw       | -  | -         | -               | -               | -         | -         | -         | -           | -     | -        | ■      | -                | -                | -                 | -                   | -    | -                | -                | -                   | -                     | -                    | - | - | 118 |     |
|         | KMYZ-9            | Pin allocations type ZC, metric screw       | -  | -         | -               | -               | -         | -         | -         | -           | -     | -        | ■      | -                | -                | -                 | -                   | -    | -                | -                | -                   | -                     | -                    | - | - | 120 |     |
|         | KMYZ-4-...-EX     | Pin allocations type ZB/ ZC, metric screw   | -  | -         | -               | -               | -         | -         | -         | -           | ■     | -        | -      | -                | -                | -                 | -                   | -    | -                | -                | -                   | -                     | -                    | - | - | 118 |     |
|         | KMYZ-7            | Pin allocations type ZC, self-tapping screw | -  | -         | -               | -               | -         | -         | ■         | -           | -     | -        | -      | -                | -                | -                 | -                   | -    | -                | -                | -                   | -                     | -                    | - | - | 123 |     |
|         | KRP               | Pin allocations type ZC, self-tapping screw | -  | -         | -               | -               | -         | -         | ■         | -           | -     | -        | -      | -                | -                | -                 | -                   | -    | -                | -                | -                   | -                     | -                    | - | - | 125 |     |
|         | NEBV-HS           | Pin allocations type S                      | -  | -         | -               | ■               | -         | -         | -         | -           | -     | -        | -      | -                | -                | -                 | -                   | -    | -                | -                | -                   | -                     | -                    | - | - | 126 |     |
|         | KMH               | Pin allocations type H                      | -  | -         | ■               | -               | -         | -         | -         | -           | -     | ■        | -      | -                | -                | -                 | -                   | -    | -                | -                | -                   | -                     | -                    | - | - | 128 |     |
|         | NEBV-H1           | Pin allocations type H                      | -  | -         | ■               | -               | -         | -         | -         | -           | -     | ■        | -      | -                | -                | -                 | -                   | -    | -                | -                | -                   | -                     | -                    | - | - | 129 |     |
|         | NEBU-M8<br>SIM-M8 | M8x1, 3-pin                                 | -  | -         | -               | -               | -         | ■         | -         | -           | -     | -        | -      | -                | -                | -                 | -                   | -    | -                | -                | -                   | -                     | -                    | - | - | 18  |     |
|         | NEBU-M8<br>SIM-M8 | M8x1, 4-pin                                 | -  | -         | -               | -               | ■         | -         | -         | -           | -     | -        | -      | ■                | -                | ■                 | -                   | -    | -                | -                | -                   | -                     | -                    | - | - | 24  |     |
|         | NEBV-M8...4L      | M8x1, 4-pin, switching status indication    | -  | -         | -               | -               | ■         | -         | -         | -           | -     | -        | -      | ■                | -                | ■                 | -                   | -    | -                | -                | -                   | -                     | -                    | - | - | 136 |     |

# Connecting cables for valves

Selection aid

FESTO

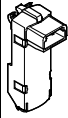
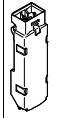
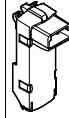
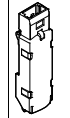
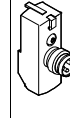
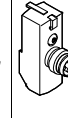
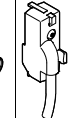
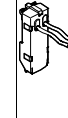
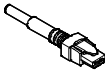
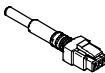

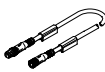

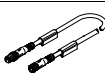
| Version   | Type                            | Electrical connection  | for application-specific valves |             |                 |                 |                 |                |                |                |      |                           | → Page/<br>Internet |     |
|---|---------------------------------|--|---------------------------------|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|------|---------------------------|---------------------|-----|
|   |                                 |  | VOFA...-C1-APP/-ANP             | VOVG-...-B2 | MHP1/MHA1...-HC | MHP1/MHA1...-TC | MHA1/MHP1...-PI | MHE2/MHP2/MHA2 | MHE3/MHP3/MHA3 | MHE4/MHP4/MHA4 | MHJ9 | MFH<br>(M5-Compactsystem) |                     |     |
|    | <b>KMF</b>                      | Pin allocations type B, industrial standard                      | -                               | -           | -               | -               | -               | -              | -              | -              | -    | -                         | ■                   | 106 |
|    | <b>KMEB-1</b><br><b>KMEB-2</b>  | Pin allocations type C, to EN 175301-803                         | ■                               | -           | -               | -               | -               | -              | -              | -              | -    | ■                         | -                   | 108 |
|    | <b>KMYZ-3</b>                   | Pin allocations type ZC, metric screw                            | -                               | -           | -               | -               | -               | -              | ■              | ■              | -    | -                         | -                   | 116 |
|    | <b>KMYZ-4...-B</b>              | Pin allocations type ZC, metric screw                            | -                               | -           | -               | -               | -               | -              | ■              | ■              | -    | -                         | -                   | 118 |
|   | <b>KMH</b>                      | Pin allocations type H   | -                               | ■           | ■               | ■               | -               | -              | -              | -              | -    | -                         | -                   | 128 |
|  | <b>NEBV-H1</b>                  | Pin allocations type H   | -                               | ■           | ■               | ■               | -               | -              | -              | -              | -    | -                         | -                   | 129 |
|  | <b>MHJ9-KMH</b>                 | Pin allocations type H, mit Elektronikwith electronic components | -                               | -           | -               | -               | -               | -              | -              | -              | -    | ■                         | -                   | 131 |
|  | <b>MHAP-PI</b>                  | Pin allocations type H, Plug-In                                  | -                               | -           | -               | -               | ■               | -              | -              | -              | -    | -                         | -                   | 133 |
|  | <b>NEBU-M8</b><br><b>SIM-M8</b> | M8x1, 3-pin  | ■                               | -           | -               | -               | -               | -              | -              | -              | -    | -                         | -                   | 18  |
|  | <b>NEBU-M8</b><br><b>SIM-M8</b> | M8x1, 4-pin  | -                               | -           | -               | -               | -               | -              | -              | -              | -    | -                         | ■                   | 24  |

| Version | Type                    | Electrical connection        | for proportional valve |             |             |             |      |      |       |      |             |      | → Page/<br>Internet |
|---------|-------------------------|------------------------------|------------------------|-------------|-------------|-------------|------|------|-------|------|-------------|------|---------------------|
|         |                         |                              | VPPX                   | VPPM-...-V1 | VPPM-...-LK | VPPM-...-A4 | VPWP | MPPE | MPPEs | VPPE | VPPE-...-E1 | MPYE |                     |
|         | NEDV                    | M8x1, 4-pin                  | -                      | -           | -           | -           | ■    | -    | -     | -    | -           | -    | 139                 |
|         | NEBP-...-M9W5           | M9x0.5 5-pin                 | -                      | -           | -           | -           | ■    | -    | -     | -    | -           | -    | 65                  |
|         | KVI-CP-3                | M9x0.5 5-pin                 | -                      | -           | -           | -           | ■    | -    | -     | -    | -           | -    | 158                 |
|         | SIM-M12<br>KM12         | M12x1, 4-pin                 | -                      | -           | -           | -           | -    | -    | -     | ■    | -           | -    | 32                  |
|         | KMPYE                   | M12x1, 4-pin                 | -                      | -           | -           | -           | -    | -    | -     | -    | -           | ■    | 134                 |
|         | KVIA-MPYE               | M12x1, 4-pin                 | -                      | -           | -           | -           | -    | -    | -     | -    | -           | ■    | 160                 |
|         | SIM-M12                 | M12x1, 5-pin                 | -                      | -           | -           | -           | -    | -    | -     | -    | ■           | -    | 35                  |
|         | NEBU-...-Q8N            | M12x1, 5-pin                 | -                      | ■           | -           | -           | -    | -    | -     | -    | -           | -    | 35                  |
|         | SIM-M12<br>NEBU-M12     | M12x1, 8-pin                 | ■                      | ■           | -           | ■           | -    | -    | -     | -    | -           | -    | 40                  |
|         | SIM-M12<br>NEBU-M12     | M12x1, 8-pin<br>M12x1,58-pin | -                      | ■           | ■           | ■           | -    | -    | -     | -    | -           | -    | 138                 |
|         | VAVE-P8                 | M12x1, 8-pin                 | ■                      | -           | -           | -           | -    | -    | -     | -    | -           | -    | 56                  |
|         | NEBV-M12<br>NEDU-...-V9 | M12x1, 8-pin                 | ■                      | ■           | -           | ■           | -    | -    | -     | -    | -           | -    | 217                 |
|         | KMPPE                   | M16x0.75, 8-pin              | -                      | -           | -           | -           | -    | ■    | ■     | -    | -           | -    | 135                 |
|         | KVIA-MPPE               | M16x0.75, 8-pin              | -                      | -           | -           | -           | -    | ■    | ■     | -    | -           | -    | 160                 |

# Connecting cables for valves

Selection aid

FESTO

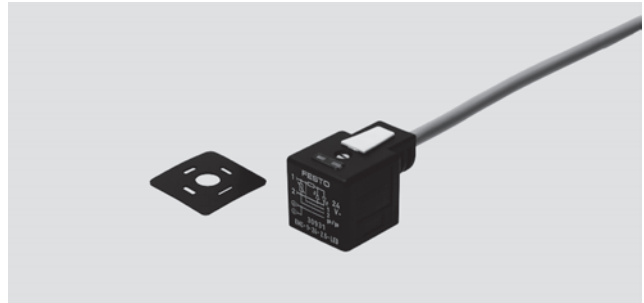
| Version   | Type                | Electrical connection         | E-box for VUVG-...P3  |   |   |  |   |   |   |   | → Page/<br>Internet |
|---|---------------------|-------------------------------|---|---|---|--|---|---|---|---|---------------------|
|   |                     |                               |  |  |  |  |  |  |  |  |                     |
|    | NEBV-HS             | Pin allocations type S, 2-pin | -   | -   | ■   | ■  | -   | -   | -   | -   | 126                 |
|    | NEBV-H1             | Pin allocations type H, 2-pin | ■   | ■   | -   | -  | -   | -   | -   | -   | 129                 |
|    | NEBU-M8...3-K       | M8x1, 3-pin                   | -   | -   | -   | -  | ■   | -   | -   | -   | 18                  |
|   | NEBU-M8G3-K...-M8G3 | M8x1, 3-pin                   | -   | -   | -   | -  | ■   | -   | -   | -   | 18                  |
|  | NEBU-M8G4-K         | M8x1, 4-pin                   | -   | -   | -   | -  | -   | ■   | -   | -   | 24                  |
|  | NEBU-M8G4-K...-M8G4 | M8x1, 4-pin                   | -   | -   | -   | -  | -   | ■   | -   | -   | 24                  |

| Version | Type                        | Electrical connection                          | for on-off valves         | for soft-start valves | for soft-start valves and exhaust valves | for vacuum generators |          |          |          |         |        |      |            |                  |                           | → Page/<br>Internet |   |     |
|---------|-----------------------------|--|---------------------------|-----------------------|--|-----------------------|----------|----------|----------|---------|--------|------|------------|------------------|---------------------------|---------------------|---|-----|
|         |                             |  | (Service units MS series) |                       |  |                       |          |          |          |         |        |      |            |                  |                           |                     |   |     |
|         |                             |  | MS4/MS6-EE                | MS9/MS12-EE           | MS4/MS6-DE                               | MS12-DE               | MS6-SV-C | MS6-SV-D | MS9-SV-C | VAD-MYB | VAD-ME | VN-P | VN-...M/-B | VADM/VADMI-45/70 | VADM/VADMI-95/140/200/300 |                     |   |     |
|         | <b>KMC</b>                  | Pin allocations type A, to EN 175301-803       | -                         | ■                     | -  | ■                     | -        | -        | -        | ■       | -      | -    | -          | -                | -                         | -                   | - | 102 |
|         | <b>KMEB</b>                 | Pin allocations type C, to EN 175301-803       | ■                         | -                     | ■  | -                     | ■        | ■        | -        | -       | -      | -    | -          | -                | -                         | ■                   | - | 108 |
|         | <b>KME</b>                  | Pin allocations type C, industrial standard    | -                         | -                     | -  | -                     | -        | -        | -        | -       | ■      | -    | -          | -                | -                         | -                   | - | 112 |
|         | <b>KMYZ-2</b>               | Pin allocations type ZB, self-tapping screw    | -                         | -                     | -  | -                     | -        | -        | -        | -       | ■      | -    | -          | -                | ■                         | -                   | - | 114 |
|         | <b>KMYZ-4</b>               | Pin allocations type ZB/ZC, self-tapping screw | -                         | -                     | -  | -                     | -        | -        | -        | -       | ■      | -    | -          | -                | ■                         | -                   | - | 118 |
|         | <b>KMH</b>                  | Pin allocations type H                         | -                         | -                     | -  | -                     | -        | -        | -        | -       | -      | -    | ■          | -                | -                         | -                   | - | 128 |
|         | <b>NEBV-H1</b>              | Pin allocations type H                         | -                         | -                     | -  | -                     | -        | -        | -        | -       | -      | -    | ■          | -                | -                         | -                   | - | 129 |
|         | <b>NEBU-M8<br/>SIM-M8</b>   | M8x1, 3-pin                                    | -                         | -                     | -  | -                     | -        | -        | -        | -       | -      | -    | ■          | -                | -                         | -                   | - | 18  |
|         | <b>NEBU-M12<br/>SIM-M12</b> | M12x1, 5-pin                                   | ■                         | -                     | ■  | -                     | ■        | ■        | -        | -       | -      | -    | -          | -                | -                         | -                   | - | 35  |



**Plug socket with cable KMC**

- For valves with D and N1 solenoid coils



## General technical data

|                              |  |
|------------------------------|--|
| Cable Ø [mm]                 | 6                                      |
| Cable composition            | 3 x 0.75 mm <sup>2</sup>               |
| Protective earth connection  | Yes                                    |
| Type of mounting             | On solenoid valve via M3 central screw |
| Mounting position            | Any                                    |
| Protection class to EN 60529 | IP67 (assembled)                       |

## Materials

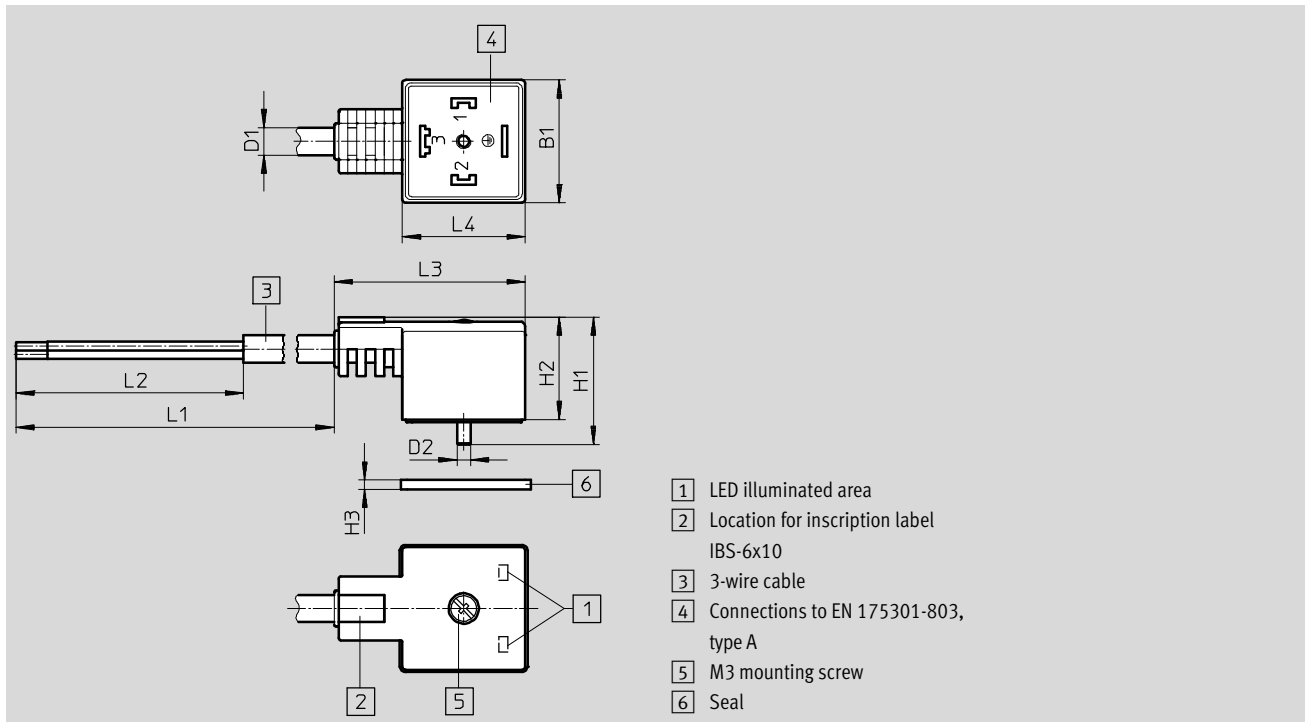
|              |         |
|--------------|---------|
| Housing      | PA, POM |
| Pin contact  | Bronze  |
| Cable sheath | PVC     |

## Operating and environmental conditions

|   | KMC-1-24    | KMC-1-230                   |
|---|-------------|-----------------------------|
| Ambient temperature [°C]                | -20 ... +80 | -20 ... +80                 |
| CE mark (see declaration of conformity) | -           | To EU Low Voltage Directive |
| Certification                           | -           | Germanischer Lloyd          |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

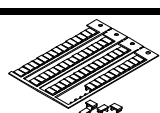


| Type          | B1 | D1<br>Ø | D2<br>Ø | H1 | H2   | H3  | L1  | L2 | L3 | L4 |
|---------------|----|---------|---------|----|------|-----|-----|----|----|----|
| KMC-1-...-2,5 | 27 | 6       | M3      | 28 | 22.5 | 1.5 | 2.5 | 50 | 42 | 27 |
| KMC-1-...-5   |    |         |         |    |      |     | 5   |    |    |    |
| KMC-1-...-10  |    |         |         |    |      |     | 10  |    |    |    |

### Ordering data

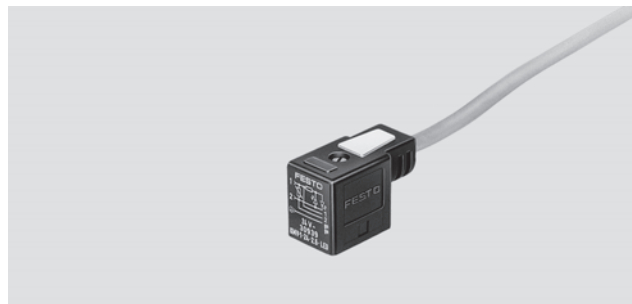
| Electrical connection | Nominal operating voltage [V] | Switching position display | Cable length [m] | Weight [g] | Part No.      | Type                      |
|-----------------------|-------------------------------|----------------------------|------------------|------------|---------------|---------------------------|
| Socket, type A        | 24 DC                         | LED                        | 2.5              | 110        | <b>30931</b>  | <b>KMC-1-24DC-2,5-LED</b> |
|                       |                               |                            | 5                | 315        | <b>30933</b>  | <b>KMC-1-24DC-5-LED</b>   |
|                       |                               |                            | 10               | 725        | <b>193459</b> | <b>KMC-1-24-10-LED</b>    |
|                       | 230 AC                        | -                          | 2.5              | 110        | <b>30932</b>  | <b>KMC-1-230AC-2,5</b>    |
|                       |                               |                            | 5                | 315        | <b>30934</b>  | <b>KMC-1-230AC-5</b>      |

### Ordering data – Accessories

|  | Part No.     | Type            |
|--|--------------|-----------------|
|  Inscription labels 6x10 mm, 64 pieces, in frames | <b>18576</b> | <b>IBS-6x10</b> |

**Plug socket with cable KMV**

- For valves with V solenoid coils



## General technical data

|                              |                                |
|------------------------------|--------------------------------|
| Cable Ø [mm]                 | 6                              |
| Cable composition            | 3 x 0.75 mm <sup>2</sup>       |
| Protective earth connection  | Yes                            |
| Reverse polarity protection  | For all electrical connections |
| Type of mounting             | Via M3 central screw           |
| Mounting position            | Any                            |
| Protection class to EN 60529 | IP67 (assembled)               |

## Materials

|              |        |
|--------------|--------|
| Housing      | PC     |
| Pin contact  | Bronze |
| Cable sheath | PVC    |

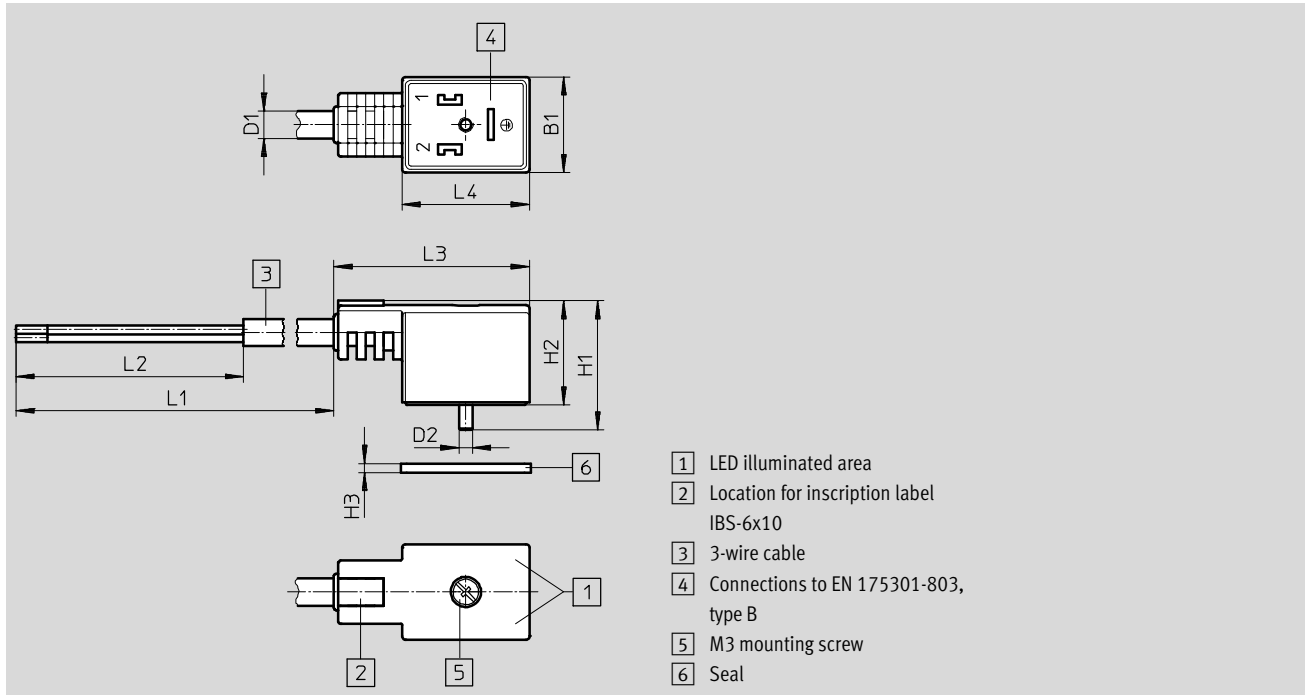
## Operating and environmental conditions

|   | KMV-1-24    | KMV-1-230                   |
|---|-------------|-----------------------------|
| Ambient temperature [°C]                | -20 ... +80 | -20 ... +80                 |
| CE mark (see declaration of conformity) | -           | To EU Low Voltage Directive |



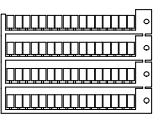
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



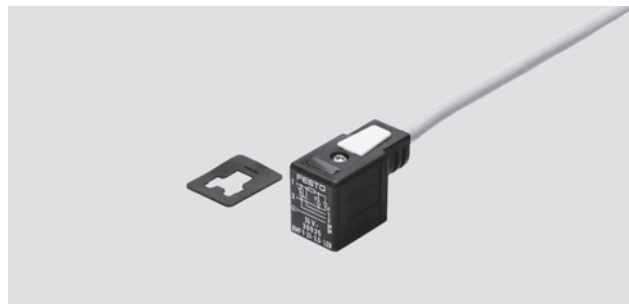
| Type          | B1 | D1<br>∅ | D2<br>∅ | H1   | H2 | H3 | L1  | L2 | L3   | L4 |
|---------------|----|---------|---------|------|----|----|-----|----|------|----|
| KMV-1-...-2,5 | 21 | 6       | M3      | 28.5 | 23 | 2  | 2.5 | 50 | 42.5 | 28 |
| KMV-1-...-5   |    |         |         |      |    |    | 5   |    |      |    |
| KMV-1-...-10  |    |         |         |      |    |    | 10  |    |      |    |

| Ordering data         |                               |                          |                  |                    |               |                           |
|-----------------------|-------------------------------|--------------------------|------------------|--------------------|---------------|---------------------------|
| Electrical connection | Nominal operating voltage [V] | Switching status display | Cable length [m] | Product weight [g] | Part No.      | Type                      |
| Socket, type B        | 24 DC                         | LED                      | 2.5              | 170                | <b>30939</b>  | <b>KMV-1-24DC-2,5-LED</b> |
|                       |                               |                          | 5                | 320                | <b>30941</b>  | <b>KMV-1-24DC-5-LED</b>   |
|                       |                               |                          | 10               | 620                | <b>193456</b> | <b>KMV-1-24-10-LED</b>    |
|                       | 230 AC                        | -                        | 2.5              | 170                | <b>30940</b>  | <b>KMV-1-230AC-2,5</b>    |
|                       |                               |                          | 5                | 320                | <b>30942</b>  | <b>KMV-1-230AC-5</b>      |

| Ordering data – Accessories  |              |                 |
|--|--------------|-----------------|
| Designation  | Part No.     | Type            |
|  Inscription labels 6x10 mm, 64 pieces, in frames | <b>18576</b> | <b>IBS-6x10</b> |

## Plug socket with cable KMF

- Plug socket with cable for valves with F solenoid coils
- Pre-assembled
- Cable lengths 2.5 to 10 m



## General technical data

| Type                                 | KMF-1-24                               | KMF-1-230 |
|--------------------------------------|--|-----------|
| Electrical connection                | Socket                                 |           |
| Switching position display           | LED                                    | –         |
| Nominal operating voltage [V]        | 24 DC                                  | 230 AC    |
| Cable composition [mm <sup>2</sup> ] | 3x0.75                                 |           |
| Cable diameter [mm]                  | 6                                      |           |
| Protective earth connection          | Yes                                    |           |
| Type of mounting                     | On solenoid valve via M3 central screw |           |
| Mounting position                    | Any                                    |           |
| Protection class to EN 60529         | IP67 (assembled)                       |           |

## Materials

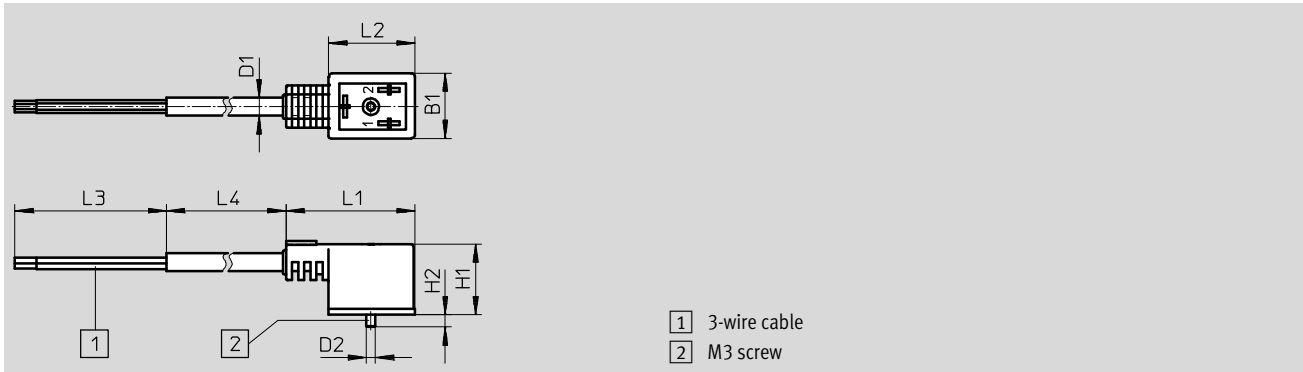
|              |        |
|--------------|--------|
| Housing      | PC     |
| Pin contact  | Bronze |
| Cable sheath | PVC    |

## Operating and environmental conditions

| Type  | KMF-1-24    | KMF-1-230                   |
|---|-------------|-----------------------------|
| Ambient temperature [°C]                      | –20 ... +80 | –20 ... +80                 |
| CE marking<br>(see declaration of conformity) | –           | To EU Low Voltage Directive |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



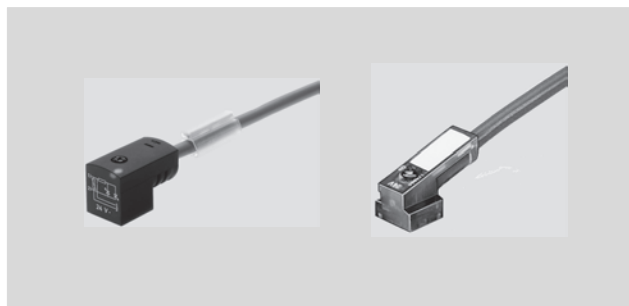
| Type          | B1 | D1 | D2 | H1 | H2 | L1 | L2 | L3 | L4     |
|---------------|----|----|----|----|----|----|----|----|--------|
| KMF-1-...-2,5 | 21 | 6  | M3 | 23 | 6  | 43 | 28 | 50 | 2,500  |
| KMF-1-...-5   |    |    |    |    |    |    |    |    | 5,000  |
| KMF-1-...-10  |    |    |    |    |    |    |    |    | 10,000 |

## Ordering data

| Electrical connection | Nominal operating voltage [V] | Product weight [g] | Length [m] | Part No.      | Type                      |
|-----------------------|-------------------------------|--------------------|------------|---------------|---------------------------|
| Socket                | 24 DC                         | 170                | 2.5        | <b>30935</b>  | <b>KMF-1-24DC-2,5-LED</b> |
|                       |                               | 320                | 5          | <b>30937</b>  | <b>KMF-1-24DC-5-LED</b>   |
|                       |                               | 460                | 10         | <b>193458</b> | <b>KMF-1-24-10-LED</b>    |
|                       | 230 AC                        | 170                | 2.5        | <b>30936</b>  | <b>KMF-1-230AC-2,5</b>    |
|                       |                               | 320                | 5          | <b>30938</b>  | <b>KMF-1-230AC-5</b>      |

## Connecting cable KMEB

- For valves with EB solenoid coil
- Pre-assembled
- Cable lengths 2.5 m, 5 m and 10 m
- 24 V DC:  
with LEDs and protective circuit
- Not suitable for energy chains
- KMEB-1 with PVC cable
- KMEB-2 with PUR cable
- KMEB-3 with PVC cable



## General technical data

| Type                         | KMEB-1                  | KMEB-2                   | KMEB-2-24-M12           | KMEB-3                         |
|------------------------------|-------------------------|--------------------------|-------------------------|--------------------------------|
| Electrical connection        | Angled socket           | Angled socket            | Angled socket           | Angled socket                  |
|                              | 3-pin                   | 4-pin                    | 5-pin                   | 2-pin                          |
|                              | Type C                  | Type C                   | Type C                  | Type C                         |
|                              | To EN 175301-803        | To EN 175301-803         | To EN 175301-803        | To EN 175301-803               |
| Reverse polarity protection  | –                       | –                        | –                       | For all electrical connections |
| Cable Ø [mm]                 | 5.2                     | 6.2                      | 4.6                     | 5.2                            |
| Cable composition            | 3 x 0.5 mm <sup>2</sup> | 3 x 0.75 mm <sup>2</sup> | 3 x 0.5 mm <sup>2</sup> | 2 x 0.75 mm <sup>2</sup>       |
| Protective earth connection  | Yes                     | Yes                      | Yes                     | No                             |
| Type of mounting             | M2.5 central screw      | M2.5 central screw       | M2.5 central screw      | M2.5 central screw             |
| Mounting position            | Any                     | Any                      | Any                     | Any                            |
| Cable properties             | –                       | –                        | –                       | Standard                       |
| Protection class to EN 60529 | IP65 (assembled)        | IP65 (assembled)         | IP65 (assembled)        | IP65 (assembled)               |

## Materials

| Type              | KMEB-1 | KMEB-2         | KMEB-2-24-M12 | KMEB-3               |
|-------------------|--------|----------------|---------------|----------------------|
| Housing           | PA     | PA, POM        | PA, POM       | PC                   |
| Pin contact       | Bronze | Bronze         | Bronze        | Silver-plated bronze |
| Cable sheath      | PVC    | PUR            | TPE-U (PU)    | PVC                  |
| Note on materials | –      | RoHS-compliant | –             | –                    |

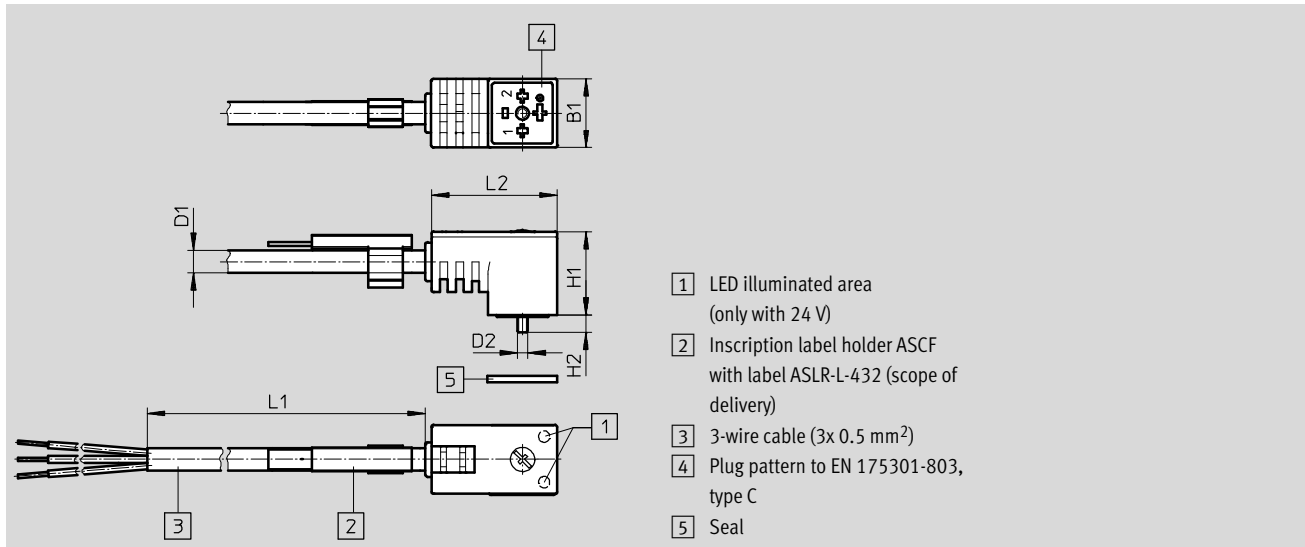
## Operating and environmental conditions

| Type                                    | KMEB-1-24   | KMEB-1-230                  | KMEB-2      | KMEB-2-24-M12 | KMEB-3                      |
|---|-------------|-----------------------------|-------------|---------------|-----------------------------|
| Ambient temperature [°C]                | –20 ... +80 | –20 ... +80                 | –20 ... +80 | –5 ... +50    | –20 ... +80                 |
| CE mark (see declaration of conformity) | –           | To EU Low Voltage Directive | –           | –             | To EU Low Voltage Directive |

## Dimensions

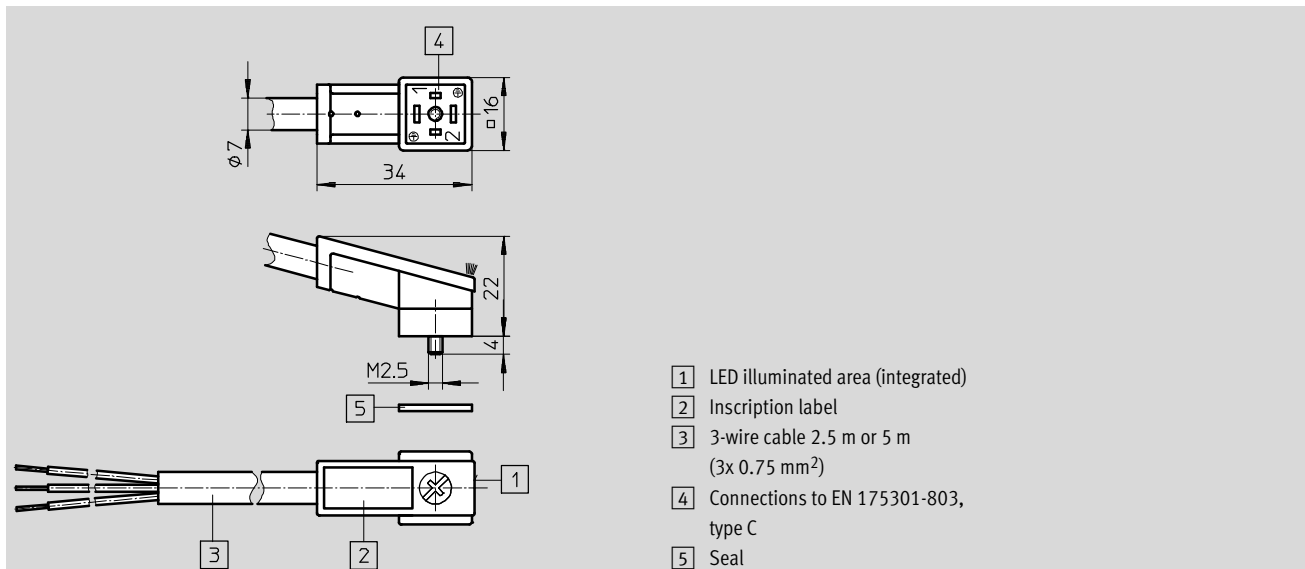
Download CAD data → [www.festo.com](http://www.festo.com)

### KMEB-1

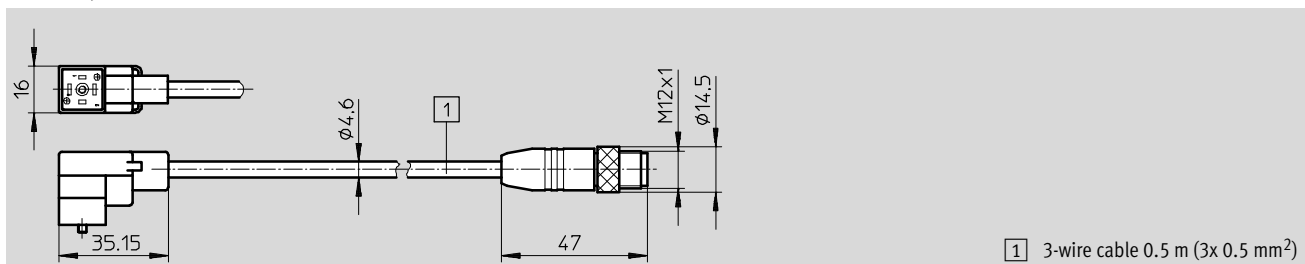


| Type           | D1  | D2  | L1     | L2   | H1   | H2 | B1 |
|----------------|-----|-----|--------|------|------|----|----|
| KMEB-1-...-2,5 | 5.2 | 2.5 | 2,500  | 29.1 | 19.3 | 4  | 16 |
| KMEB-1-...-5   | 5.2 | 2.5 | 5,000  | 29.1 | 19.3 | 4  | 16 |
| KMEB-1-...-10  | 5.2 | 2.5 | 10,000 | 29.1 | 19.3 | 4  | 16 |

### KMEB-2



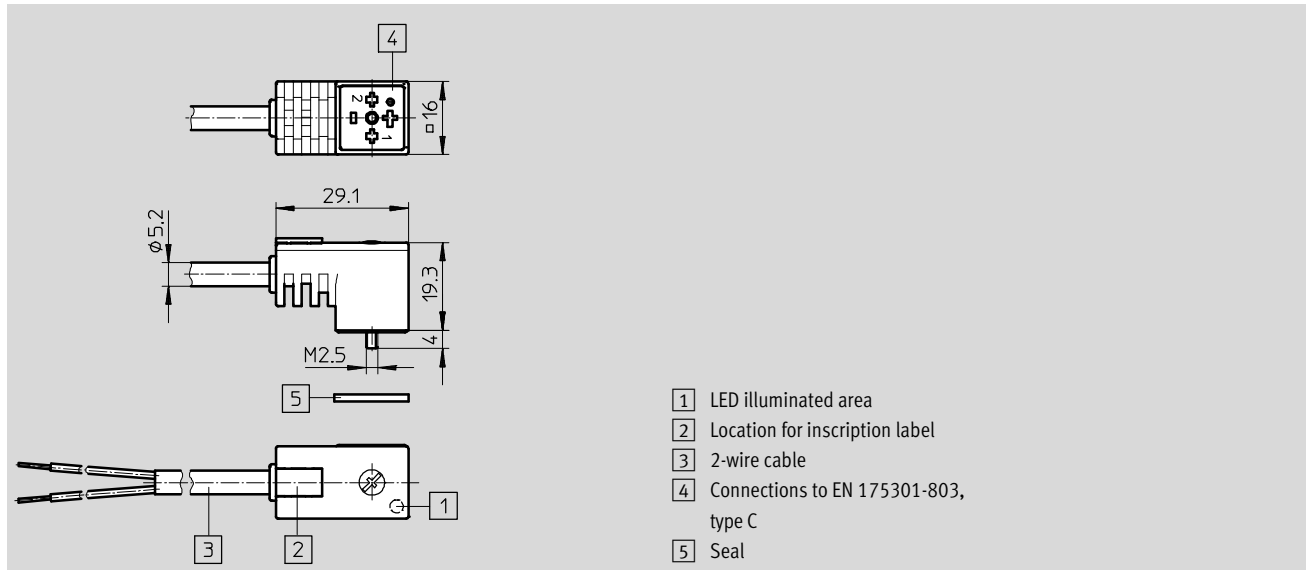
### KMEB-2-24-M12



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

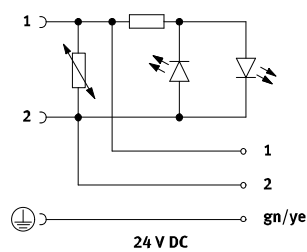
KMEB-3



4

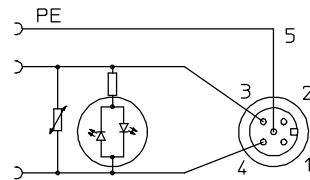
## Circuitry

KMEB-1/KMEB-3 with integrated signal status display

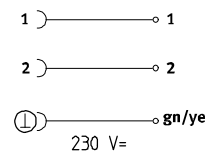


The 24 V DC version is reverse polarity protected and has a protective circuit for peak voltages of up to 100 V DC as well as an operating status indicator with yellow LED. (No gn/ye connection with KMEB-3.)

KMEB-2-24-M12

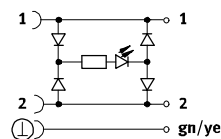


KMEB-1/KMEB-3 without integrated signal status display



For KMEB-3  
– No gn/ye connection  
– Operating voltage 24 V DC

KMEB-2



## Ordering data

|                      | Signal status display | Cable sheath material | Operating voltage [V] | Cable length [m] | Weight [g] | Part No.      | Type                         |
|----------------------|-----------------------|-----------------------|-----------------------|------------------|------------|---------------|------------------------------|
| <b>KMEB-1</b>        |                       |                       |                       |                  |            |               |                              |
|                      | LED                   | PVC                   | 24 DC                 | 2.5              | 125        | <b>151688</b> | <b>KMEB-1-24-2,5-LED</b>     |
|                      |                       |                       |                       | 5                | 230        | <b>151689</b> | <b>KMEB-1-24-5-LED</b>       |
|                      |                       |                       |                       | 10               | 460        | <b>193457</b> | <b>KMEB-1-24-10-LED</b>      |
|                      | –                     | PVC                   | 230 AC                | 2.5              | 125        | <b>151690</b> | <b>KMEB-1-230AC-2,5</b>      |
|                      |                       |                       |                       | 5                | 230        | <b>151691</b> | <b>KMEB-1-230AC-5</b>        |
|                      |                       |                       |                       |                  |            |               |                              |
| <b>KMEB-2</b>        |                       |                       |                       |                  |            |               |                              |
|                      | LED                   | PUR                   | 24 DC                 | 2.5              | 200        | <b>174844</b> | <b>KMEB-2-24-2,5-LED</b>     |
|                      |                       |                       |                       | 5                | 400        | <b>174845</b> | <b>KMEB-2-24-5-LED</b>       |
|                      | –                     | PUR                   | 230 AC                | 2.5              | 200        | <b>174846</b> | <b>KMEB-2-230-2,5</b>        |
|                      |                       |                       |                       | 5                | 400        | <b>174847</b> | <b>KMEB-2-230-5</b>          |
| <b>KMEB-2-24-M12</b> |                       |                       |                       |                  |            |               |                              |
|                      | LED                   | TPE-U (PU)            | 24 DC                 | 0.5              | 54         | <b>177677</b> | <b>KMEB-2-24-M12-0,5-LED</b> |
| <b>KMEB-3</b>        |                       |                       |                       |                  |            |               |                              |
|                      | LED                   | PVC                   | 24 DC                 | 2.5              | 120        | <b>547268</b> | <b>KMEB-3-24-2,5-LED</b>     |
|                      |                       |                       |                       | 5                | 230        | <b>547269</b> | <b>KMEB-3-24-5-LED</b>       |
|                      | –                     | PVC                   | 24 DC                 | 2.5              | 120        | <b>547270</b> | <b>KMEB-3-24-2,5</b>         |
|                      |                       |                       |                       | 5                | 230        | <b>547271</b> | <b>KMEB-3-24-5</b>           |

## Ordering data – Accessories

|  | Description                                      | Use    | Part No.     | Type            |
|--|--|--------|--------------|-----------------|
|  | Inscription labels 6x10 mm, 64 pieces, in frames | KMEB-3 | <b>18576</b> | <b>IBS-6x10</b> |
|  | Inscription labels 9x20 mm, 20 pieces, in frames | KMEB-2 | <b>18182</b> | <b>IBS-9x20</b> |

## Plug socket with cable KME

- Plug socket with cable for valves with E solenoid coils
- Pre-assembled
- Cable lengths 2.5 to 10 m



## General technical data

|                                  |   |           |
|----------------------------------|---|-----------|
| Electrical connection            | Angled socket, square design, 3-pin, type C (industrial type) |           |
|                                  | Open end, 2-wire  |           |
| Switching position display       | LED   |           |
| Protective earth connection      | Not present   |           |
| Nominal operating voltage        | [V DC]  | 24        |
| Acceptable current load          | [A]   | 4         |
| Cable composition                | [mm <sup>2</sup> ]  | 2x0.75    |
| Cable diameter                   | [mm]  | 5.2       |
| Cable diameter tolerance         | [mm]  | ±0.1      |
| Min. cable bending radius        | [mm]  | 52        |
| Cable properties                 | For static applications                                       |           |
| Type of mounting                 | On solenoid valve via central screw M3                        |           |
| Tightening torque of plug socket | [Nm]  | Max. 0.35 |
| Mounting position                | Any   |           |
| Degree of protection to EN 60529 | IP67 (assembled)  |           |

## Materials

|              |           |
|--------------|-----------|
| Housing      | TPE-U(PU) |
| Seals        | NBR       |
| Pin contact  | Bronze    |
| Cable sheath | PVC       |

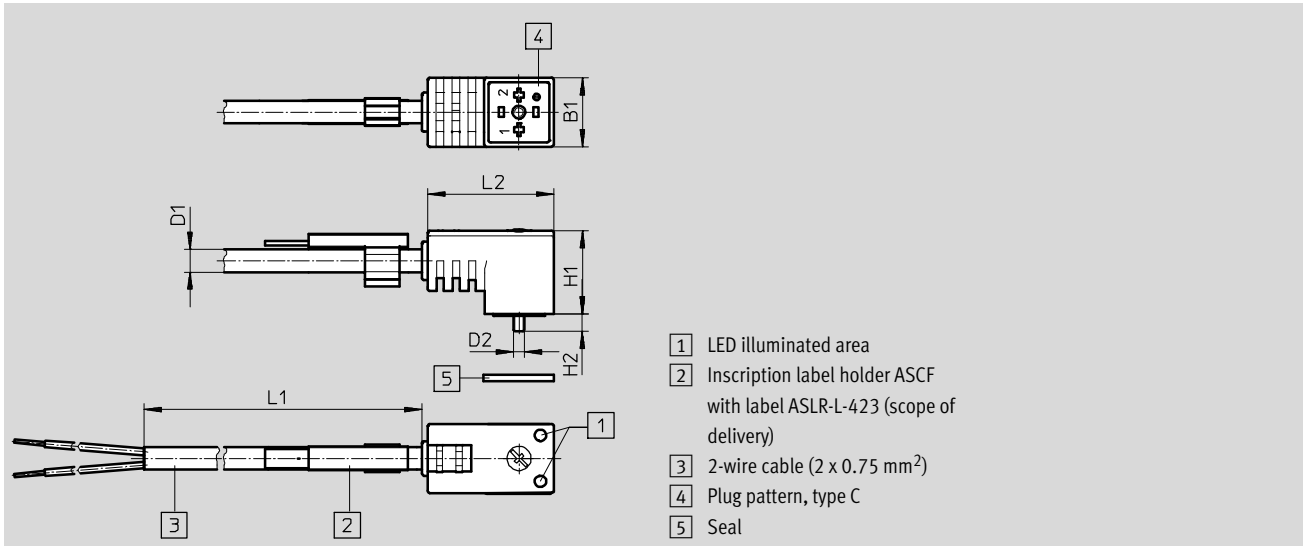
## Operating and environmental conditions

|                     |      |             |
|---------------------|------|-------------|
| Ambient temperature | [°C] | -20 ... +80 |
|---------------------|------|-------------|



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type               | B1 | D1  | D2 | H1   | H2 | L1    | L2   |
|--------------------|----|-----|----|------|----|-------|------|
| KME-1-24DC-2,5-LED | 16 | 5.2 | M3 | 19.3 | 4  | 2500  | 29.1 |
| KME-1-24DC-5-LED   |    |     |    |      |    | 5000  |      |
| KME-1-24-10-LED    |    |     |    |      |    | 10000 |      |

## Ordering data

| Electrical connection                       | Product weight [g] | Length [m] | Part No.      | Type                      |
|---|--------------------|------------|---------------|---------------------------|
| Angled socket, square design, 3-pin, type C | 135                | 2.5        | <b>30943</b>  | <b>KME-1-24DC-2,5-LED</b> |
|   | 280                | 5          | <b>30945</b>  | <b>KME-1-24DC-5-LED</b>   |
|   | 570                | 10         | <b>193455</b> | <b>KME-1-24-10-LED</b>    |

# Connecting cables for valves

KMYZ-2 – Technical data

FESTO

## Plug socket with cable KMYZ-2

- Plug socket with cable for valves with ZB solenoid coils
- Pre-assembled
- Cable lengths 0.5 to 10 m



## General technical data

| Type                                 | KMYZ-2-24                                | KMYZ-2-24-M8                        |
|--------------------------------------|--|-------------------------------------|
| Electrical connection                | Angled socket, 2-pin, square design      | Angled socket, 2-pin, square design |
|                                      | Open cable end                           | Straight plug, 3-pin, M8x1          |
| Switching position display           | LED                                      |                                     |
| Nominal operating voltage [V DC]     | 24                                       |                                     |
| Acceptable current load [A]          | 1 at 40 °C                               |                                     |
| Cable composition [mm <sup>2</sup> ] | 2x0.25                                   |                                     |
| Cable diameter [mm]                  | 3.4                                      |                                     |
| Protective earth connection          | No                                       |                                     |
| Type of mounting                     | On solenoid valve via self-tapping screw |                                     |
| Mounting position                    | Any                                      |                                     |
| Protection class to EN 60529         | IP65 (assembled)                         |                                     |

## Materials

|                   |                |
|-------------------|----------------|
| Housing           | PA             |
| Pin contact       | Bronze         |
| Cable sheath      | Polyurethane   |
| Note on materials | RoHS-compliant |

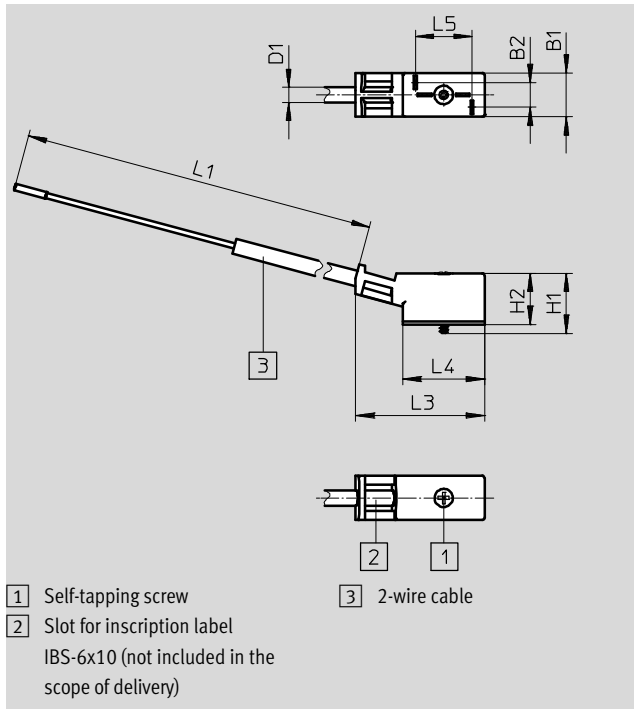
## Operating and environmental conditions

|                          |             |
|--------------------------|-------------|
| Ambient temperature [°C] | -10 ... +50 |
|--------------------------|-------------|

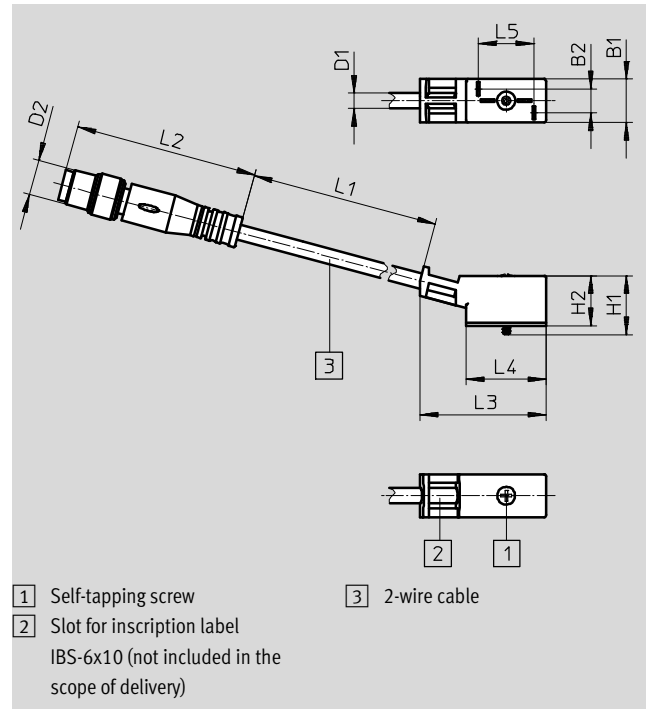
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

KMYZ-2-24



KMYZ-2-24-M8



- 1 Self-tapping screw
- 2 Slot for inscription label  
IBS-6x10 (not included in the scope of delivery)
- 3 2-wire cable

- 1 Self-tapping screw
- 2 Slot for inscription label  
IBS-6x10 (not included in the scope of delivery)
- 3 2-wire cable

| Type                 | B1 | B2 | D1  | D2 | H1 | H2 | L1     | L2 | L3 | L4 | L5 |
|----------------------|----|----|-----|----|----|----|--------|----|----|----|----|
| KMYZ-2-24-2,5-LED    | 10 | 5  | 3.4 | -  | 13 | 11 | 2,500  | -  | 28 | 18 | 13 |
| KMYZ-2-24-5-LED      |    |    |     |    |    |    | 5,000  |    |    |    |    |
| KMYZ-2-24-10-LED     |    |    |     |    |    |    | 10,000 |    |    |    |    |
| KMYZ-2-24-M8-0,5-LED | 10 | 5  | 3.4 | M8 | 13 | 11 | 500    | 41 | 28 | 18 | 13 |
| KMYZ-2-24-M8-2,5-LED |    |    |     |    |    |    | 2,500  |    |    |    |    |

## Ordering data

|  | Electrical connection      | Weight | Cable length | Part No. | Type                 |
|--|----------------------------|--------|--------------|----------|----------------------|
|  | Open cable end, 2-wire     | 50 g   | 2.5 m        | 34997    | KMYZ-2-24-2,5-LED    |
|  |                            | 90 g   | 5 m          | 34998    | KMYZ-2-24-5-LED      |
|  |                            | 170 g  | 10 m         | 193443   | KMYZ-2-24-10-LED     |
|  | Straight plug, 3-pin, M8x1 | 18 g   | 0.5 m        | 177676   | KMYZ-2-24-M8-0,5-LED |
|  |                            | 54 g   | 2.5 m        | 177678   | KMYZ-2-24-M8-2,5-LED |

## Ordering data – Accessories

|  | Description                                      | Part No. | Type     |
|--|--|----------|----------|
|  | Inscription labels 6x10 mm, 64 pieces, in frames | 18576    | IBS-6x10 |

# Connecting cables for valves

KMYZ-3 – Technical data

FESTO

## Plug socket with cable KMYZ-3

- Plug socket with cable for the fast-switching valves MH2/MH3 with ZC solenoid coils
- Pre-assembled
- Cable lengths 0.5 to 10 m



## General technical data

| Type                                 | KMYZ-3-24                              | KMYZ-3-24-M8                        |
|--------------------------------------|--|-------------------------------------|
| Electrical connection                | Angled socket, 2-pin, square design    | Angled socket, 2-pin, square design |
|                                      | Open cable end, 2-wire                 | Straight plug, 3-pin, M8x1          |
| Switching position display           | LED                                    |                                     |
| Nominal operating voltage [V DC]     | 24                                     |                                     |
| Cable composition [mm <sup>2</sup> ] | 2x0.25                                 |                                     |
| Cable diameter [mm]                  | 3.4                                    |                                     |
| Protective earth connection          | No                                     |                                     |
| Type of mounting                     | On solenoid valve via M2 central screw |                                     |
| Mounting position                    | Any                                    |                                     |
| Protection class to EN 60529         | IP65 (assembled)                       |                                     |

## Materials

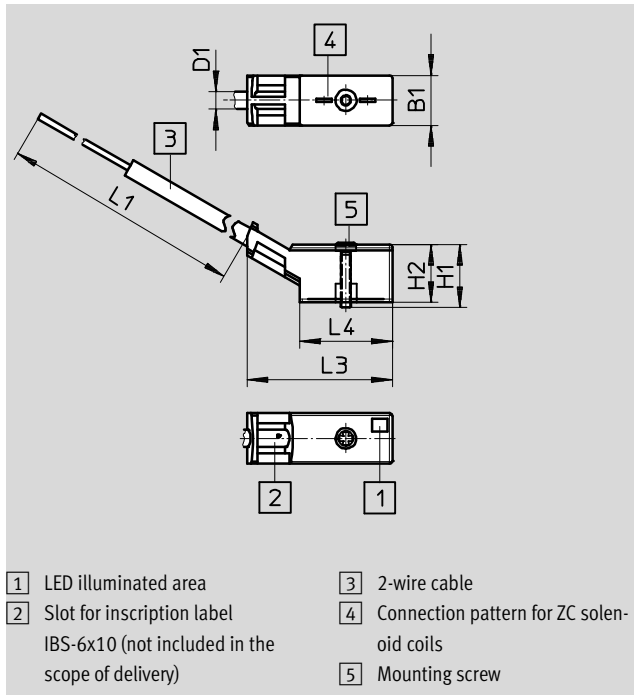
|                   |                |
|-------------------|----------------|
| Housing           | Polyamide      |
| Pin contact       | Bronze         |
| Cable sheath      | Polyurethane   |
| Note on materials | RoHS-compliant |

## Operating and environmental conditions

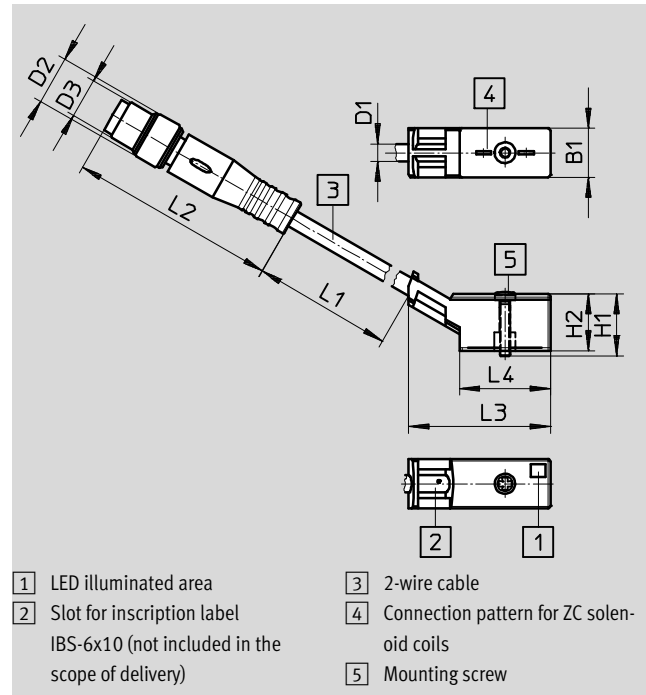
|                          |             |
|--------------------------|-------------|
| Ambient temperature [°C] | -10 ... +50 |
|--------------------------|-------------|

## Dimensions

KMYZ-3-24



KMYZ-3-24-M8



| Type                     | B1  | D1<br>· $\sigma$ | D2<br>· $\sigma$ | D3<br>· $\sigma$ | H1    | H2    | L1     | L2   | L3   | L4 |
|--------------------------|-----|------------------|------------------|------------------|-------|-------|--------|------|------|----|
| KMYZ-3-24-2,5-LED-PUR-B  | 9.7 | 3.4              | -                | -                | 12.25 | 12.15 | 500    | -    | 28.1 | 18 |
| KMYZ-3-24-5-LED-PUR-B    |     |                  |                  |                  |       |       | 2,500  |      |      |    |
| KMYZ-3-24-10-LED-PUR-B   |     |                  |                  |                  |       |       | 10,000 |      |      |    |
| KMYZ-3-24-M8-0,5-LED-PUR | 9.7 | 3.4              | 9.7              | M8X1             | 12.25 | 12.15 | 500    | 41.1 | 28.1 | 18 |
| KMYZ-3-24-M8-2,5-LED-PUR |     |                  |                  |                  |       |       | 2,500  |      |      |    |

## Ordering data

|  | Electrical connection      | Weight | Cable length | Part No.      | Type                            |
|--|----------------------------|--------|--------------|---------------|---------------------------------|
|  | Open cable end, 2-wire     | 50 g   | 2.5 m        | <b>193693</b> | <b>KMYZ-3-24-2,5-LED-PUR-B</b>  |
|  |                            | 90 g   | 5 m          | <b>193695</b> | <b>KMYZ-3-24-5-LED-PUR-B</b>    |
|  |                            | 170 g  | 10 m         | <b>196066</b> | <b>KMYZ-3-24-10-LED-PUR-B</b>   |
|  | Straight plug, M8x1, 3-pin | 18 g   | 0.5 m        | <b>525654</b> | <b>KMYZ-3-24-M8-0,5-LED-PUR</b> |
|  |                            | 54 g   | 2.5 m        | <b>525655</b> | <b>KMYZ-3-24-M8-2,5-LED-PUR</b> |

## Ordering data – Accessories

|  | Description                                      | Part No.     | Type            |
|--|--|--------------|-----------------|
|  | Inscription labels 6x10 mm, 64 pieces, in frames | <b>18576</b> | <b>IBS-6x10</b> |

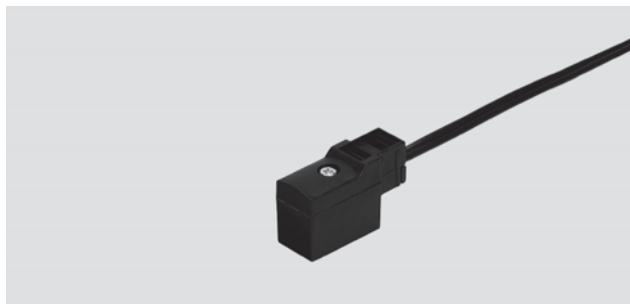
# Connecting cables for valves

KMYZ-4 – Technical data

FESTO

• Temperature range  
–10 ... +50 °C

- For valves with ZB and ZC solenoid coils
- Variant KMYZ-4-...-B for fast-switching valves MH2/MH3
- Variant KMYZ-4-...-B-EX for use with intrinsically safe CPV valve terminals



## General technical data

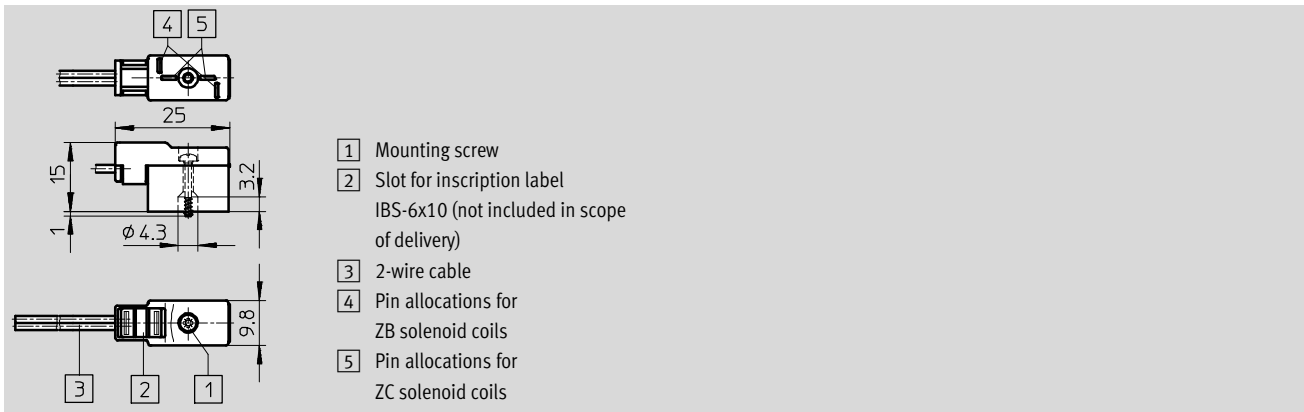
| Type                         | KMYZ-4-...-B                         | KMYZ-4                               | KMYZ-4-...-B-EX                      |
|------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Electrical connection        | Angled socket, square design<br>MSZC | Angled socket, square design<br>MSZB | Angled socket, square design<br>MSZB |
| Number of pins               | 2                                    |                                      |                                      |
| Cable design                 | [mm <sup>2</sup> ] 2x0.35            |                                      |                                      |
| Cable diameter               | [mm] 3.9                             |                                      |                                      |
| Type of mounting             | Central screw M2                     | Self-tapping central screw           | Central screw M2                     |
| Protection class to EN 60529 | IP40 (assembled)                     |                                      |                                      |
| Operating voltage range      | [V DC] 3 ... 36                      |                                      |                                      |
| Nominal operating voltage    | [V DC] 24                            |                                      |                                      |
| Mounting position            | Any                                  |                                      |                                      |
| Ambient temperature          | [°C] –10 ... +50                     |                                      |                                      |
| Material                     | Housing                              | PA                                   |                                      |
|                              | Cable sheath                         | PVC                                  |                                      |
|                              | Plug contacts                        | Bronze                               |                                      |
| Note on material             | Conforms to RoHS                     |                                      |                                      |
| Certification                | Germanischer Lloyd                   | –                                    | Germanischer Lloyd                   |

## Ordering data

|  | Description   | Product weight<br>[g] | Cable length<br>[m] | Part No.      | Type                   |
|--|---|-----------------------|---------------------|---------------|------------------------|
| <b>With central screw M2</b>   |   |                       |                     |               |                        |
|  | Plug socket with cable for valves with ZC solenoid coils        | 10                    | 0.5                 | <b>193690</b> | <b>KMYZ-4-24-0,5-B</b> |
|  |   | 32                    | 2.5                 | <b>193691</b> | <b>KMYZ-4-24-2,5-B</b> |
| <b>With self-tapping central screw</b>   |   |                       |                     |               |                        |
|  | Plug socket with cable for valves with ZB and ZC solenoid coils | 10                    | 0.5                 | <b>185519</b> | <b>KMYZ-4-24-0,5</b>   |
|  |   | 32                    | 2.5                 | <b>185520</b> | <b>KMYZ-4-24-2,5</b>   |
| <b>With central screw M2 for use with intrinsically safe CPV valve terminals</b> |   |                       |                     |               |                        |
|  | Plug socket with cable for CPV valves                           | 12                    | 0.5                 | <b>550324</b> | <b>KMYZ-4-0,5-B-EX</b> |
|  |   | 34.5                  | 2.5                 | <b>550481</b> | <b>KMYZ-4-2,5-B-EX</b> |
|  |   | 62.5                  | 5                   | <b>550482</b> | <b>KMYZ-4-5,0-B-EX</b> |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



# Connecting cables for valves

KMYZ-9 – Technical data

FESTO

## Plug socket with cable KMYZ-9

- Plug socket with cable for valves with ZC solenoid coils (CPE10/CPE14)
- Pre-assembled
- Cable lengths 0.2 to 10 m



## General technical data

| Type                                 | KMYZ-9-24-...-PUR-B                    | KMYZ-9-24-M8-...-LED-B         | KMYZ-9-24-AD-0,2-LED-B            | KMYZ-9-24-AD-0,2-B                |
|--------------------------------------|--|--------------------------------|-----------------------------------|-----------------------------------|
| Electrical connection                | Angled socket, 2-pin, square design    |                                |                                   |                                   |
|                                      | Open cable end, 2-wire                 | Straight plug, 3-pin, M8x1     | Angled plug, 2-pin, square design | Angled plug, 2-pin, square design |
| Switching position display           | LED                                    | LED                            | LED                               | –                                 |
| Additional functions                 | Reduction of retaining current         | Reduction of retaining current | Reduction of retaining current    | –                                 |
| Nominal operating voltage [V DC]     | 24                                     |                                |                                   |                                   |
| Cable composition [mm <sup>2</sup> ] | 2x0.25                                 |                                |                                   |                                   |
| Cable diameter [mm]                  | 3.4                                    |                                |                                   |                                   |
| Protective earth connection          | No                                     |                                |                                   |                                   |
| Type of mounting                     | On solenoid valve via M2 central screw |                                |                                   |                                   |
| Tightening torque [Nm]               | 0.25                                   |                                |                                   |                                   |
| Mounting position                    | Any                                    |                                |                                   |                                   |
| Protection class to EN 60529         | IP65 (assembled)                       |                                |                                   |                                   |

## Materials

|                   |                |
|-------------------|----------------|
| Housing           | Polyamide      |
| Pin contact       | Bronze         |
| Cable sheath      | TPE-U(PUR)     |
| Note on materials | RoHS-compliant |

## Operating and environmental conditions

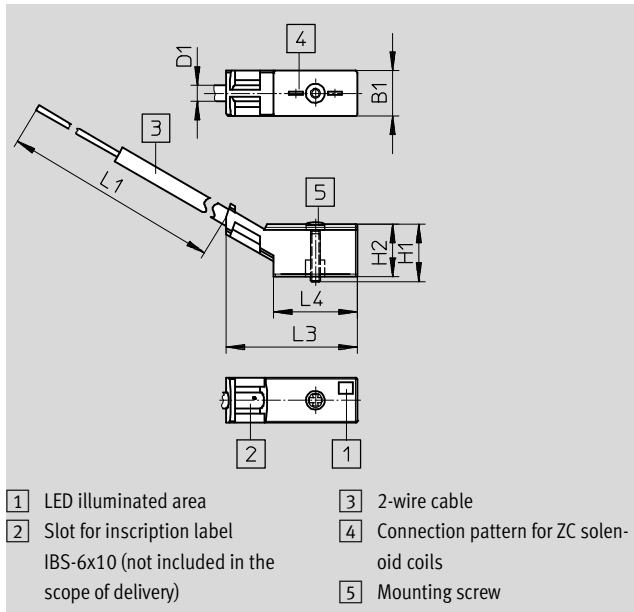
|  |                     |
|--|---------------------|
| Ambient temperature [°C]                   | –10 ... +50         |
| CE marking (see declaration of conformity) | To EU EMC Directive |



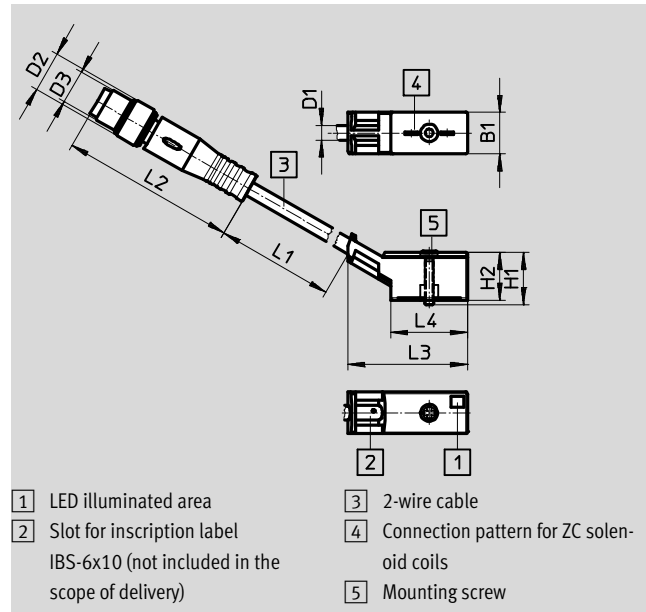
Download CAD data → [www.festo.com](http://www.festo.com)

## Dimensions

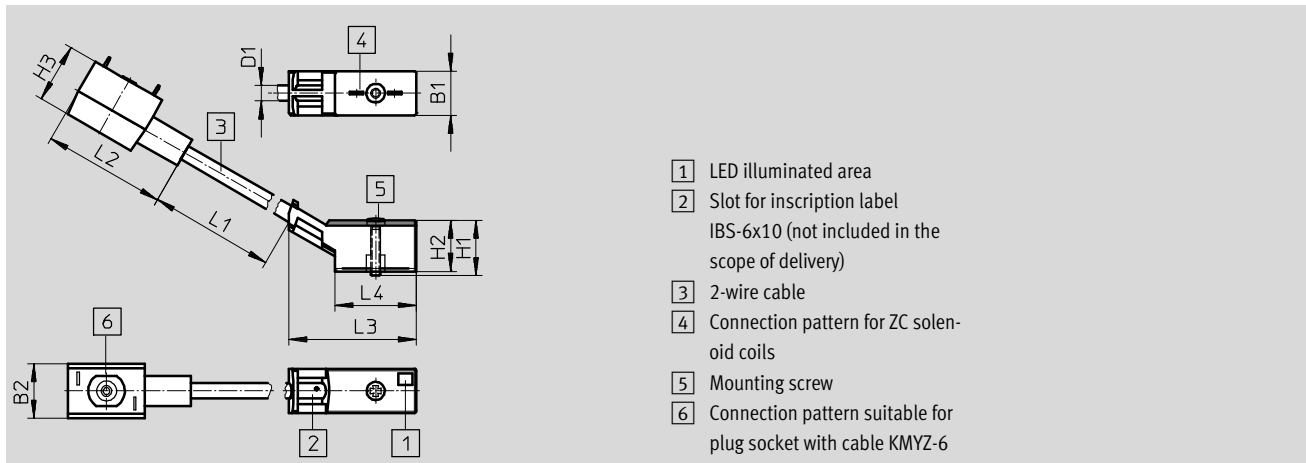
KMYZ-9-24



KMYZ-9-24-M8



KMYZ-9-24-AD



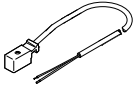
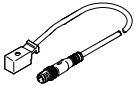
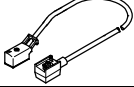
| Type                     | B1  | B2 | D1<br>-Ø- | D2<br>-Ø- | D3<br>-Ø- | H1    | H2    | H3 | L1     | L2   | L3   | L4 |
|--------------------------|-----|----|-----------|-----------|-----------|-------|-------|----|--------|------|------|----|
| KMYZ-9-24-2,5-LED-PUR-B  | 9.7 | -  | 3.4       | -         | -         | 12.25 | 12.15 | -  | 2,500  | -    | 28.1 | 18 |
| KMYZ-9-24-5-LED-PUR-B    |     |    |           |           |           |       |       |    | 5,000  |      |      |    |
| KMYZ-9-24-10-LED-PUR-B   |     |    |           |           |           |       |       |    | 10,000 |      |      |    |
| KMYZ-9-24-M8-0,5-LED-PUR | 9.7 | -  | 3.4       | 9.7       | M8X1      | 12.25 | 12.15 | -  | 500    | 41.1 | 28.1 | 18 |
| KMYZ-9-24-M8-2,5-LED-PUR |     |    |           |           |           |       |       |    | 2,500  |      |      |    |
| KMYZ-9-24-AD             | 9.7 | 12 | 3.4       | -         | -         | 12.25 | 12.15 | 13 | 200    | 27   | 28.1 | 18 |

# Connecting cables for valves

KMYZ-9 – Technical data

FESTO

## Ordering data

|   | Electrical connection             | Switching position display | Weight | Cable length | Part No.      | Type                           |
|---|-----------------------------------|----------------------------|--------|--------------|---------------|--------------------------------|
|  | Open cable end, 2-wire            | LED                        | 50 g   | 2.5 m        | <b>193687</b> | <b>KMYZ-9-24-2,5-LED-PUR-B</b> |
|   |                                   | LED                        | 90 g   | 5 m          | <b>193689</b> | <b>KMYZ-9-24-5-LED-PUR-B</b>   |
|   |                                   | LED                        | 170 g  | 10 m         | <b>196063</b> | <b>KMYZ-9-24-10-LED-PUR-B</b>  |
|  | Straight plug, M8x1, 3-pin        | LED                        | 18 g   | 0.5 m        | <b>196064</b> | <b>KMYZ-9-24-M8-0,5-LED-B</b>  |
|   |                                   | LED                        | 54 g   | 2.5 m        | <b>196065</b> | <b>KMYZ-9-24-M8-2,5-LED-B</b>  |
|  | Angled plug, square design, 2-pin | LED                        | 18 g   | 0.2 m        | <b>530942</b> | <b>KMYZ-9-24-AD-0,2-LED-B</b>  |
|   |                                   | –                          | 18 g   | 0.2 m        | <b>547449</b> | <b>KMYZ-9-24-AD-0,2-B</b>      |

## Ordering data – Accessories

|   | Description                                      | Part No.     | Type            |
|---|--|--------------|-----------------|
|  | Inscription labels 6x10 mm, 64 pieces, in frames | <b>18576</b> | <b>IBS-6x10</b> |

## Plug socket with cable KMYZ-7

- Plug socket with cable for connecting individual valves CPV/CPA10/14
- Pre-assembled
- Cable lengths 2.5 m, 5 m and 10 m
- With LEDs and protective circuit
- With integrated holding current reduction



## General technical data

|                                      |  |
|--------------------------------------|--|
| Electrical connection                | Angled socket, 2-pin, square design      |
|                                      | Open cable end, 2-wire                   |
| Switching position display           | LED                                      |
| Additional functions                 | Holding current reduction                |
| Nominal operating voltage [V DC]     | 24                                       |
| Cable composition [mm <sup>2</sup> ] | 2x0.25                                   |
| Cable diameter [mm]                  | 3.4                                      |
| Protective earth connection          | No                                       |
| Type of mounting                     | On solenoid valve via self-tapping screw |
| Tightening torque [Nm]               | 0.25                                     |
| Mounting position                    | Any                                      |
| Protection class to EN 60529         | IP65 (assembled)                         |

## Materials

|                   |                |
|-------------------|----------------|
| Housing           | Polyamide      |
| Pin contact       | Bronze         |
| Cable sheath      | TPE-U(PUR)     |
| Note on materials | RoHS-compliant |

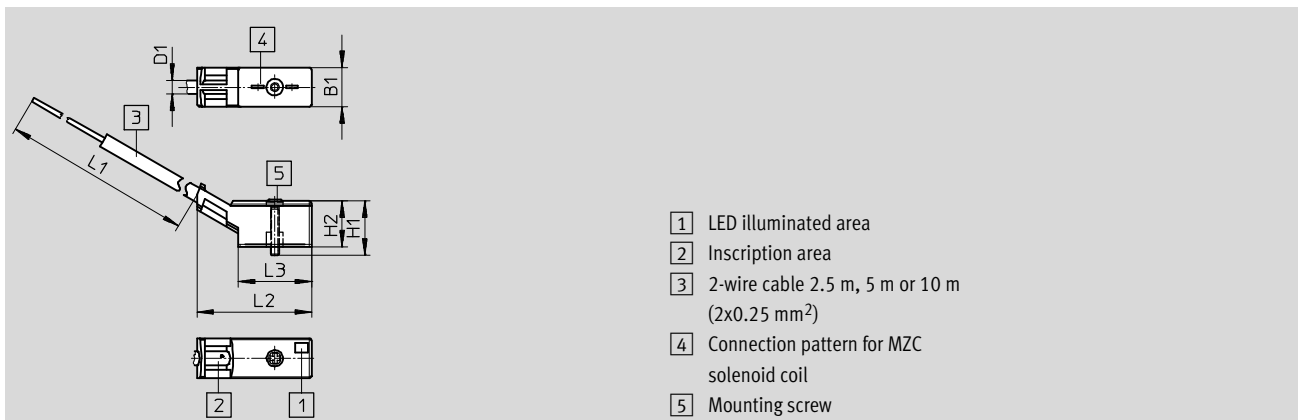
## Operating and environmental conditions

|  |                                   |
|--|-----------------------------------|
| Ambient temperature [°C]                   | -10 ... +50                       |
| CE marking (see declaration of conformity) | To EU EMC Directive <sup>1)</sup> |

1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: [www.festo.com](http://www.festo.com) → Support → User documentation.  
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



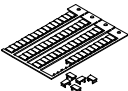
| Type                  | B1  | D1  | H1    | H2    | L1     | L2   | L3 |
|-----------------------|-----|-----|-------|-------|--------|------|----|
| KMYZ-7-24-2,5-LED-PUR | 9.7 | 3.4 | 13.25 | 12.15 | 2,500  | 28.1 | 18 |
| KMYZ-7-24-5-LED-PUR   | 9.7 | 3.4 | 13.25 | 12.15 | 5,000  | 28.1 | 18 |
| KMYZ-7-24-10-LED-PUR  | 9.7 | 3.4 | 13.25 | 12.15 | 10,000 | 28.1 | 18 |

4

## Ordering data

| Electrical connection               | Switching position display | Weight | Cable length | Part No.      | Type                         |
|-------------------------------------|----------------------------|--------|--------------|---------------|------------------------------|
| Angled socket, square design, 2-pin | LED                        | 50 g   | 2.5 m        | <b>193683</b> | <b>KMYZ-7-24-2,5-LED-PUR</b> |
| Open cable end, 2-wire              | LED                        | 90 g   | 5 m          | <b>193685</b> | <b>KMYZ-7-24-5-LED-PUR</b>   |
|                                     | LED                        | 170 g  | 10 m         | <b>196070</b> | <b>KMYZ-7-24-10-LED-PUR</b>  |

## Ordering data – Accessories

| Description  | Part No.     | Type            |
|--|--------------|-----------------|
|  Inscription labels 6x10 mm, 64 pieces, in frames | <b>18576</b> | <b>IBS-6x10</b> |

## Connecting cable KRP

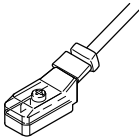
- Plug socket with cable for connecting relay plates, (valve terminal CPV10 and CPV14)
- Pre-assembled
- Cable lengths: 2.5 m and 5 m
- 2-pin plug socket
- Not suitable for chain link trunking



## General technical data

|                               |                                    |
|-------------------------------|------------------------------------|
| Type                          | KRP...                             |
| Electrical connection         | Angled socket, 2-pin               |
| Type of mounting              | Self-tapping central screw KB 18x9 |
| Mounting position             | Any                                |
| Operating voltage range [V]   | 20 ... 26 DC                       |
| Current-carrying capacity [A] | 1                                  |
| Cable diameter [mm]           | 3.5                                |
| Protection class to EN 60 529 | IP65 (assembled)                   |
| Material of housing           | Polyurethane                       |
| Material of contacts          | Bronze                             |
| Material of cable sheath      | Polyvinyl chloride                 |
| Ambient temperature [°C]      | -10 ... +50                        |

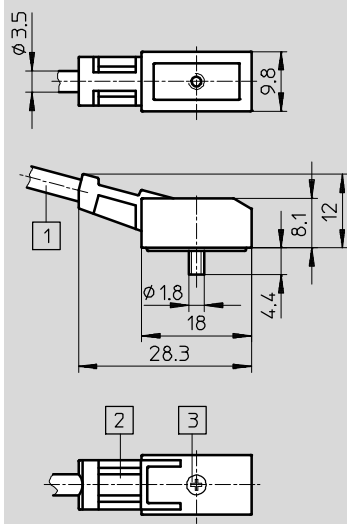
## Ordering data

|   | Constructional design<br>[mm <sup>2</sup> ] | Product weight<br>[g] | Cable length<br>[m] | Type                | Part No.       |
|---|---|-----------------------|---------------------|---------------------|----------------|
|  | 2x0.25                                      | 49                    | 2.5                 | <b>KRP-1-24-2,5</b> | <b>165 612</b> |
|   | 2x0.25                                      | 94                    | 5                   | <b>KRP-1-24-5</b>   | <b>165 613</b> |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

KRP...



- 1 2-core cable 2.5 m or 5 m (2x0.25 mm<sup>2</sup>)
- 2 Location for identification plate
- 3 Mounting screw

# Connecting cables for valves

NEBV-HSG2 – Technical data

FESTO

## Connecting cable NEBV-HSG2

- Connecting cable for VUVG valves
- Pre-assembled
- Cable lengths 0.5 to 5 m
- For connecting to electrical connection box VAVE-L1-...S



## General technical data

|                              |               |          |
|------------------------------|---------------|----------|
| Electrical connection        | Socket, 2-pin |          |
| Nominal operating voltage    | [V DC]        | 0 ... 30 |
| Wire insulation colour code  | Pin1          | Black    |
|                              | Pin2          | Red      |
| Type of mounting             | Clip          |          |
| Mounting position            | Any           |          |
| Protection class to EN 60529 | IP40          |          |

## Materials

| Type                | NEBV-HSG2-KN            | NEBV-HSG2-P                         |
|---------------------|-------------------------|-------------------------------------|
| Housing             | POM                     | POM                                 |
| Housing colour      | Black                   | Black                               |
| Pin contact         | Tin-plated copper alloy | Tin-plated copper alloy             |
| Cable sheath        | –                       | PUR                                 |
| Cable sheath colour | –                       | Grey                                |
| Insulating sheath   | PVC                     | PVC                                 |
| Cable properties    | –                       | Suitable for use with energy chains |
| Note on materials   | RoHS-compliant          | RoHS-compliant                      |

## Operating and environmental conditions

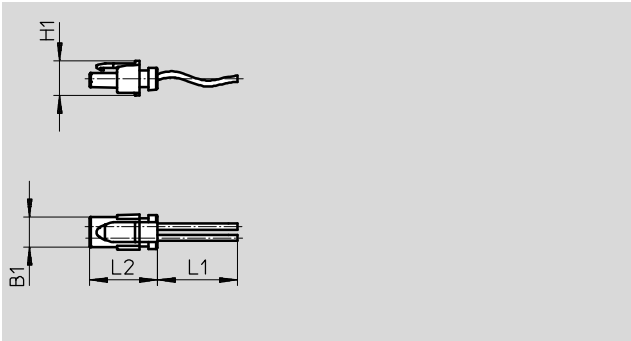
|                     |      |            |
|---------------------|------|------------|
| Ambient temperature | [°C] | –5 ... +60 |
|---------------------|------|------------|

## Circuitry (view of socket)

|  | Pin | Wire colour |
|--|-----|-------------|
|  | 1   | Black       |
|  | 2   | Red         |

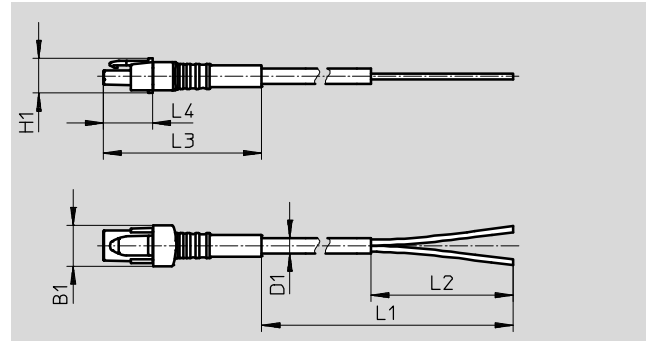
## Dimensions

NEBV-HSG2-KN



| Type                   | B1  | H1  | L1   | L2 |
|------------------------|-----|-----|------|----|
| NEBV-HSG2-KN-0.5-N-LE2 | 7.8 | 7.7 | 500  | 15 |
| NEBV-HSG2-KN-1-N-LE2   |     |     | 1000 |    |
| NEBV-HSG2-KN-2.5-N-LE2 |     |     | 2500 |    |
| NEBV-HSG2-KN-5-N-LE2   |     |     | 5000 |    |

NEBV-HSG2-P



| Type                  | B1 | D1  | H1  | L1   | L2 | L3   | L4 |
|-----------------------|----|-----|-----|------|----|------|----|
| NEBV-HSG2-P-0.5-N-LE2 | 9  | 3.4 | 7.7 | 500  | 50 | 35.2 | 11 |
| NEBV-HSG2-P-1-N-LE2   |    |     |     | 1000 |    |      |    |
| NEBV-HSG2-P-2.5-N-LE2 |    |     |     | 2500 |    |      |    |
| NEBV-HSG2-P-5-N-LE2   |    |     |     | 5000 |    |      |    |

## Ordering data

| Electrical connection  | Cable composition   | Product weight [g] | Length [m] | Part No. | Type                   |
|------------------------|---------------------|--------------------|------------|----------|------------------------|
| Straight socket, 2-pin | 2 individual cables | 4                  | 0.5        | 566662   | NEBV-HSG2-KN-0.5-N-LE2 |
|                        |                     | 7                  | 1          | 566663   | NEBV-HSG2-KN-1-N-LE2   |
|                        |                     | 17                 | 2.5        | 566664   | NEBV-HSG2-KN-2.5-N-LE2 |
|                        |                     | 31                 | 5          | 566665   | NEBV-HSG2-KN-5-N-LE2   |
|                        | 2-wire cable        | 8                  | 0.5        | 566666   | NEBV-HSG2-P-0.5-N-LE2  |
|                        |                     | 16                 | 1          | 566667   | NEBV-HSG2-P-1-N-LE2    |
|                        |                     | 35                 | 2.5        | 566668   | NEBV-HSG2-P-2.5-N-LE2  |
|                        |                     | 70                 | 5          | 566669   | NEBV-HSG2-P-5-N-LE2    |

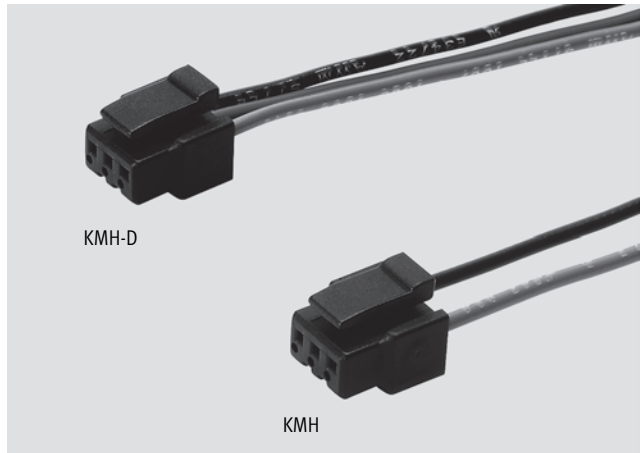
# Connecting cables for valves

KMH, for individual connection – Technical data

FESTO

## Plug socket with cable KMH

- Plug socket with cable for the horizontal connection of individual valves (type CPA-SC1)
- Pre-assembled
- Cable lengths 0.5 m, 1 m, 2.5 m or 5 m
- 3-pin plug socket
- Not suitable for chain link trunking
- KMH-D for 2 coils



## General technical data

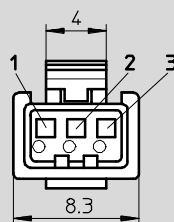
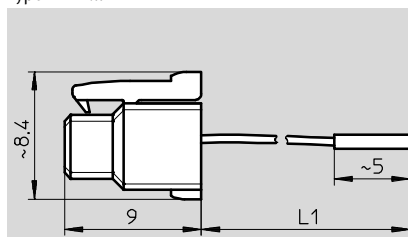
| Type                          | KMH...             |
|-------------------------------|--------------------|
| Electrical connection         | 3-pin plug socket  |
| Type of mounting              | Clip               |
| Mounting position             | Any                |
| Operating voltage [V]         | 60 DC              |
| Current-carrying capacity [A] | 3                  |
| Cable diameter [mm]           | 1.3                |
| Protection class to EN 60 529 | IP40               |
| Material of housing           | Polyacetal         |
| Material of contacts          | Tin-plated bronze  |
| Material of cable sheath      | Polyvinyl chloride |
| Ambient temperature [°C]      | -40 ... +105       |

## Ordering data

|  | Constructional design [mm <sup>2</sup> ] | Product weight [g] | Cable length (L1) [m] | Type             | Part No.       |
|--|--|--------------------|-----------------------|------------------|----------------|
|  | 2x0.14                                   | 4                  | 0.5                   | <b>KMH-0,5</b>   | <b>197 263</b> |
|  | 2x0.14                                   | 7                  | 1                     | <b>KMH-1</b>     | <b>197 264</b> |
|  | 2x0.14                                   | 17                 | 2.5                   | <b>KMH-2,5</b>   | <b>527 400</b> |
|  | 2x0.14                                   | 31                 | 5                     | <b>KMH-5</b>     | <b>527 401</b> |
|  | 3x0.14                                   | 6                  | 0.5                   | <b>KMH-D-0,5</b> | <b>527 396</b> |
|  | 3x0.14                                   | 11                 | 1                     | <b>KMH-D-1</b>   | <b>527 397</b> |
|  | 3x0.14                                   | 24                 | 2.5                   | <b>KMH-D-2,5</b> | <b>527 398</b> |
|  | 3x0.14                                   | 46                 | 5                     | <b>KMH-D-5</b>   | <b>527 399</b> |

## Dimensions

Type KMH...



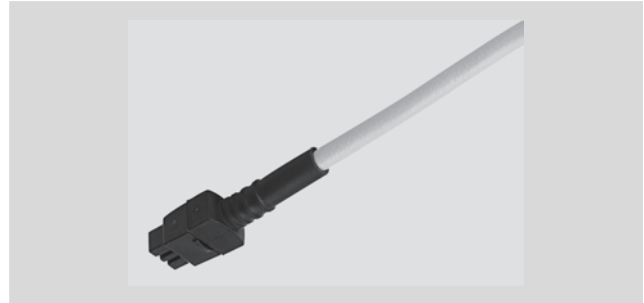
Download CAD data → [www.festo.com](http://www.festo.com)

- 1 Pin 1, core colour black
- 2 Pin 2, core colour blue
- 3 Pin 3, core colour red
- L1 Length according to type (0.5 m, 1 m, 2.5 m or 5 m)



## Connecting cable NEBV-H1G2

- Connecting cable for VUVG valves
- Pre-assembled
- Cable lengths 0.5 to 5 m
- For connecting to electrical connection box VAVE-L1-...H
- Suitable for valves with MH connection



## General technical data

|                                  |                        |
|----------------------------------|------------------------|
| Electrical connection            | Socket, 2-pin          |
| Nominal operating voltage [V DC] | 0 ... 30               |
| Wire insulation colour code      | Pin1 Red<br>Pin3 Black |
| Type of mounting                 | Clip                   |
| Mounting position                | Any                    |
| Protection class to EN 60529     | IP40                   |

## Materials

| Type                | NEBV-H1G2-KN            | NEBV-H1G2-P                         |
|---------------------|-------------------------|-------------------------------------|
| Housing             | POM                     | POM                                 |
| Housing colour      | Black                   | Black                               |
| Pin contact         | Tin-plated copper alloy | Tin-plated copper alloy             |
| Cable sheath        | –                       | PUR                                 |
| Cable sheath colour | –                       | Grey                                |
| Insulating sheath   | PVC                     | PVC                                 |
| Cable properties    | –                       | Suitable for use with energy chains |
| Note on materials   | RoHS-compliant          | RoHS-compliant                      |

## Operating and environmental conditions

|                          |            |
|--------------------------|------------|
| Ambient temperature [°C] | –5 ... +60 |
|--------------------------|------------|

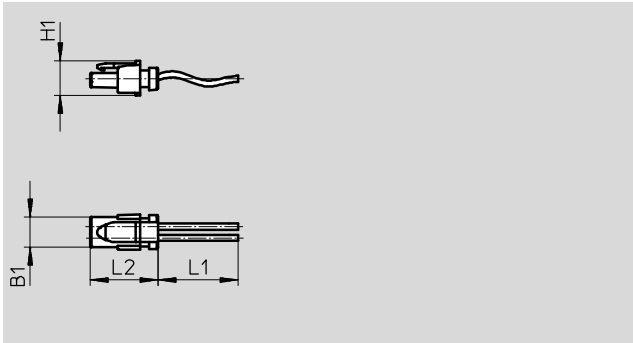
## Circuitry (view of socket)

|  | Pin | Wire colour |
|--|-----|-------------|
|  | 1   | Red         |
|  | 2   | –           |
|  | 3   | Black       |

## Dimensions

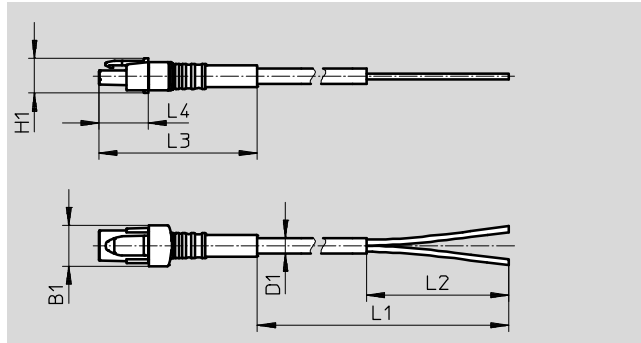
Download CAD data → [www.festo.com](http://www.festo.com)

NEBV-H1G2-KN



| Type                   | B1  | H1  | L1   | L2 |
|------------------------|-----|-----|------|----|
| NEBV-H1G2-KN-0.5-N-LE2 | 8.3 | 8.4 | 500  | 13 |
| NEBV-H1G2-KN-1-N-LE2   |     |     | 1000 |    |
| NEBV-H1G2-KN-2.5-N-LE2 |     |     | 2500 |    |
| NEBV-H1G2-KN-5-N-LE2   |     |     | 5000 |    |

NEBV-H1G2-P



| Type                  | B1 | D1  | H1  | L1   | L2 | L3   | L4 |
|-----------------------|----|-----|-----|------|----|------|----|
| NEBV-H1G2-P-0.5-N-LE2 | 9  | 3.4 | 8.4 | 500  | 50 | 33.2 | 9  |
| NEBV-H1G2-P-1-N-LE2   |    |     |     | 1000 |    |      |    |
| NEBV-H1G2-P-2.5-N-LE2 |    |     |     | 2500 |    |      |    |
| NEBV-H1G2-P-5-N-LE2   |    |     |     | 5000 |    |      |    |

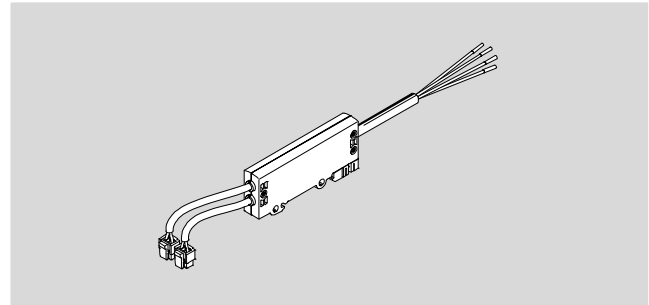
4

## Ordering data

| Electrical connection  | Cable composition   | Product weight [g] | Length [m] | Part No.      | Type                          |
|------------------------|---------------------|--------------------|------------|---------------|-------------------------------|
| Straight socket, 2-pin | 2 individual cables | 4                  | 0.5        | <b>566654</b> | <b>NEBV-H1G2-KN-0.5-N-LE2</b> |
|                        |                     | 7                  | 1          | <b>566655</b> | <b>NEBV-H1G2-KN-1-N-LE2</b>   |
|                        |                     | 17                 | 2.5        | <b>566656</b> | <b>NEBV-H1G2-KN-2.5-N-LE2</b> |
|                        |                     | 31                 | 5          | <b>566657</b> | <b>NEBV-H1G2-KN-5-N-LE2</b>   |
|                        | 2-wire cable        | 8                  | 0.5        | <b>566658</b> | <b>NEBV-H1G2-P-0.5-N-LE2</b>  |
|                        |                     | 16                 | 1          | <b>566659</b> | <b>NEBV-H1G2-P-1-N-LE2</b>    |
|                        |                     | 35                 | 2.5        | <b>566660</b> | <b>NEBV-H1G2-P-2.5-N-LE2</b>  |
|                        |                     | 70                 | 5          | <b>566661</b> | <b>NEBV-H1G2-P-5-N-LE2</b>    |

## Connecting cable MHJ9-KMH

- For MHJ9 valves
- With plug sockets KMH
- Cable lengths 0.5 and 2.5 m



## General technical data

| Type                                      | MHJ9-KMH-...-MF  | MHJ9-KMH-...-HF   |
|---|--|---|
| Electrical connection                     | 2x straight socket KMH, 2-pin<br>Cable, 4-wire                               |   |
| Operating voltage range [V DC]            | 12 ... 53  |   |
| Control signal voltage range [V DC]       | 3 ... 30   |   |
| Note on power consumption per channel [W] | Low-current phase 2<br>High-current phase 7                                  | Low-current phase 2.8<br>High-current phase 17.1                              |
| Notes on operation                        | Power supply unit must be able to supply at least 1.7 A without voltage dips | Power supply unit must be able to supply at least 1.85 A without voltage dips |
| Cable characteristics                     | For static applications  |   |
| Type of mounting                          | Via H-rail   |   |
| Mounting position                         | Any  |   |
| Protection class to EN 60529              | IP40   |   |

## Materials

|                   |                |
|-------------------|----------------|
| Housing           | POM            |
| Cable sheath      | PVC            |
| Note on materials | RoHS-compliant |

## Operating and environmental conditions

|   |                                   |
|---|-----------------------------------|
| Ambient temperature [°C]                      | -5 ... +50                        |
| CE marking<br>(see declaration of conformity) | To EU EMC Directive <sup>1)</sup> |

1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: [www.festo.com](http://www.festo.com) → Support → User documentation.  
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.  
Max. permissible cable length 2.5 m.

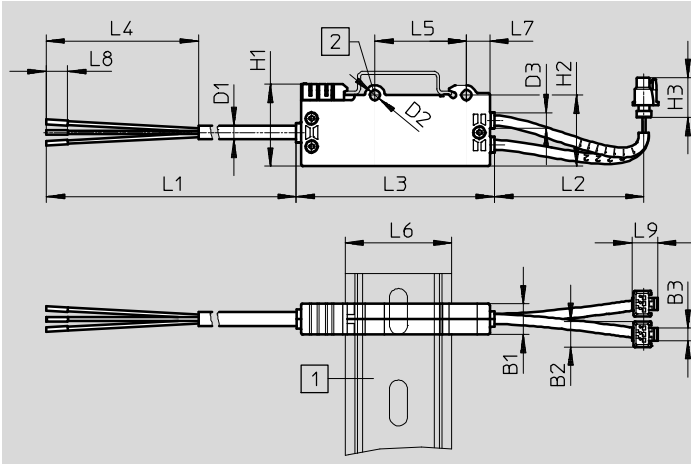
# Connecting cables for valves

MHJ9-KMH – Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



Wiring allocation:  
 BU = GND  
 BN = Operating voltage positive  
 BK = Trigger 1  
 WH = Trigger 2

- 1 H-rail
- 2 Hole for wall mounting

| Type         | B1 | B2 | B3 | D1 | D2  | D3  | H1 | H2 | H3 | L1    | L2  | L3 | L4 | L5 | L6 | L7 | L8 | L9 |
|--------------|----|----|----|----|-----|-----|----|----|----|-------|-----|----|----|----|----|----|----|----|
| MHJ9-KMH-0,5 | 10 | 8  | 4  | 5  | 3.4 | 3.3 | 27 | 23 | 13 | 500   | 200 | 65 | 50 | 30 | 35 | 8  | 7  | 8  |
| MHJ9-KMH-2,5 |    |    |    |    |     |     |    |    |    | 2,500 |     |    |    |    |    |    |    |    |

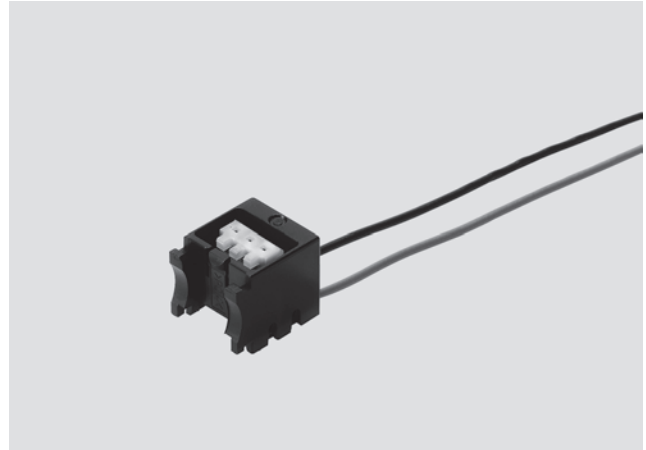
4

## Ordering data

|                         |  | Length | Weight | Part No.      | Type                   |
|-------------------------|--|--------|--------|---------------|------------------------|
| <b>Connecting cable</b> |  |        |        |               |                        |
|                         | With control electronics for 2 valves LF/LP, MF/LP and HF/LP | 0.5 m  | 40 g   | <b>553121</b> | <b>MHJ9-KMH-0,5-MF</b> |
|                         |  | 2.5 m  | 98 g   | <b>565519</b> | <b>MHJ9-KMH-2,5-MF</b> |
|                         | With control electronics for 2 valves HF                     | 0.5 m  | 40 g   | <b>562170</b> | <b>MHJ9-KMH-0,5-HF</b> |
|                         |  | 2.5 m  | 98 g   | <b>567505</b> | <b>MHJ9-KMH-2,5-HF</b> |
| <b>H-rail</b>           |  |        |        |               |                        |
|                         | H-rail to EN 60715, galvanised steel                         | 2 m    | 600 g  | <b>35430</b>  | <b>NRH-35-2000</b>     |

## Electrical plug base MHAP-PI

- Plug base with cable for connecting individual valves (type CPA-SC1, plug-in)
- Pre-assembled
- Cable lengths 0.5 m or 1 m
- 3-pin plug socket
- Not suitable for chain link trunking



## General technical data

| Type                          | MHAP-PI...        |
|-------------------------------|-------------------|
| Electrical connection         | 3-pin plug socket |
| Type of mounting              | Clip              |
| Mounting position             | Any               |
| Operating voltage [V]         | 60 DC             |
| Current-carrying capacity [A] | 3                 |
| Cable diameter [mm]           | 1                 |
| Protection class to EN 60 529 | IP40              |
| Material of housing           | Polyamide         |
| Material of contacts          | Tin-plated copper |
| Ambient temperature [°C]      | -20 ... +80       |
| Storage temperature [°C]      | -20 ... +50       |

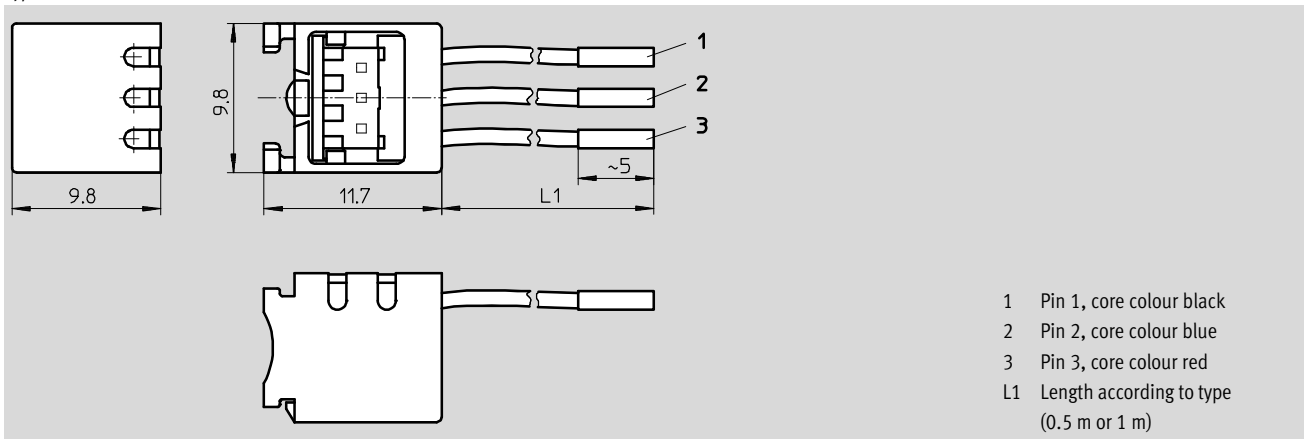
## Ordering data

|  | Constructional design [mm <sup>2</sup> ] | Product weight [g] | Cable length (L1) [m] | Type          | Part No. |
|--|--|--------------------|-----------------------|---------------|----------|
|  | 3x0.14                                   | 5                  | 0.5                   | MHAP-PI-D-0,5 | 529 116  |
|  | 3x0.14                                   | 8                  | 1                     | MHAP-PI-D-1   | 527 395  |
|  | 2x0.14                                   | 4                  | 0.5                   | MHAP-PI       | 197 260  |
|  | 2x0.14                                   | 6                  | 1                     | MHAP-PI-1     | 532 182  |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Type MHAP-PI...



- 1 Pin 1, core colour black
- 2 Pin 2, core colour blue
- 3 Pin 3, core colour red
- L1 Length according to type (0.5 m or 1 m)

# Connecting cables for valves


KMPYE, for proportional directional control valves MPYE – Technical data

FESTO

## Connecting cable KMPYE



### Ordering data

|   | Ordering data  | Cable length<br>[m] | Part No.      | Type           |
|---|--|---------------------|---------------|----------------|
|  | Straight socket, M12x1, A-coded, to EN 61076-2-101, screened | 5                   | <b>151909</b> | <b>KMPYE-5</b> |

## Plug socket with cable KMPPE

- Plug socket with cable for proportional pressure regulators MPPE and MPPES
- Pre-assembled
- Cable lengths 2.5 and 5 m



## General technical data

|                                      |                           |
|--------------------------------------|---------------------------|
| Electrical connection                | Angled socket, 8-pin, M16 |
| Nominal operating voltage [V DC]     | 24                        |
| Cable composition [mm <sup>2</sup> ] | 8x0.25                    |
| Cable diameter [mm]                  | 6.8                       |
| Type of mounting                     | M16x0.75 union nut        |
| Mounting position                    | Any                       |

## Materials

|              |        |
|--------------|--------|
| Pin contact  | Bronze |
| Cable sheath | PVC    |

## Operating and environmental conditions

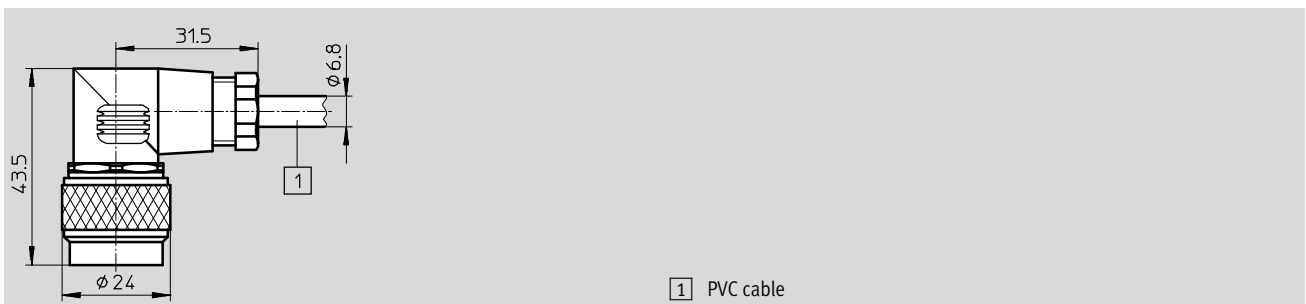
|                          |             |
|--------------------------|-------------|
| Ambient temperature [°C] | -30 ... +80 |
|--------------------------|-------------|

## Circuitry (socket view)

| Socket | Pin | Wire colour |
|--------|-----|-------------|
|        | 1   | White       |
|        | 2   | Brown       |
|        | 3   | Green       |
|        | 4   | Yellow      |
|        | 5   | Grey        |
|        | 6   | Pink        |
|        | 7   | Red         |
|        | 8   | Blue        |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



## Ordering data

| Electrical connection     | Product weight [g] | Length [m] | Part No.      | Type               |
|---------------------------|--------------------|------------|---------------|--------------------|
| Angled socket, 8-pin, M16 | 243                | 2.5        | <b>161879</b> | <b>KMPPE-B-2,5</b> |
|                           | 459                | 5          | <b>161878</b> | <b>KMPPE-B-5</b>   |

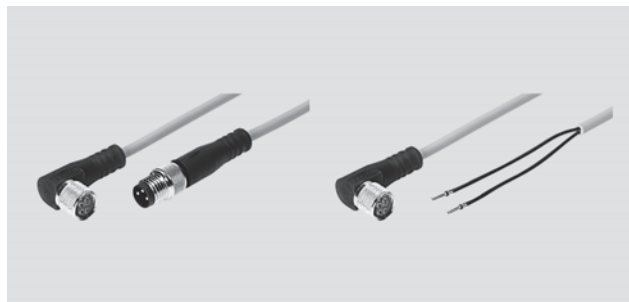
# Connecting cables for valves

NEBV-M8W4L – Technical data

FESTO

## Connecting cable NEBV-M8W4L

- For CPE10 and CPE14
- With round plug
- Cable lengths 2.5 to 10 m



## General technical data

| Type                                    | NEBV-M8W4L-...-LE2                          | NEBV-M8W4L-...-M8G3                                      |
|---|---|--|
| Electrical connection                   | Angled socket, M8x1, 4-pin<br>Cable, 2-wire | Angled socket, M8x1, 4-pin<br>Straight plug, M8x1, 3-pin |
| Operating voltage range [V DC]          | 20.4 ... 26.4                               |  |
| Acceptable current load [A]<br>at 40 °C | 3   |  |
| Switching status display                | Yellow LED                                  |  |
| Tightening torque [Nm]                  | 0.3   |  |
| Cable composition [mm <sup>2</sup> ]    | 2x0.25                                      |  |
| Cable diameter [mm]                     | 3.4   |  |
| Wire ends                               | Wire end sleeve                             | -  |
| Conforms to                             | EN 61076-2-101, ISO 20401                   |  |
| Cable characteristics                   | Suitable for use with energy chains         |  |
| Protection class to EN 60529            | IP65 and IP67 (assembled)                   |  |

## Materials

|                   |                   |
|-------------------|-------------------|
| Housing           | TPE-U (PU)        |
| Pin contacts      | Gold-plated brass |
| Insulating sheath | PVC               |
| Cable sheath      | Polyurethane      |
| Note on materials | RoHS-compliant    |

## Operating and environmental conditions

|                                |             |
|--------------------------------|-------------|
| Ambient temperature [°C]       | -10 ... +50 |
| Min. cable bending radius [mm] | 35          |

## Circuitry (socket/plug view)

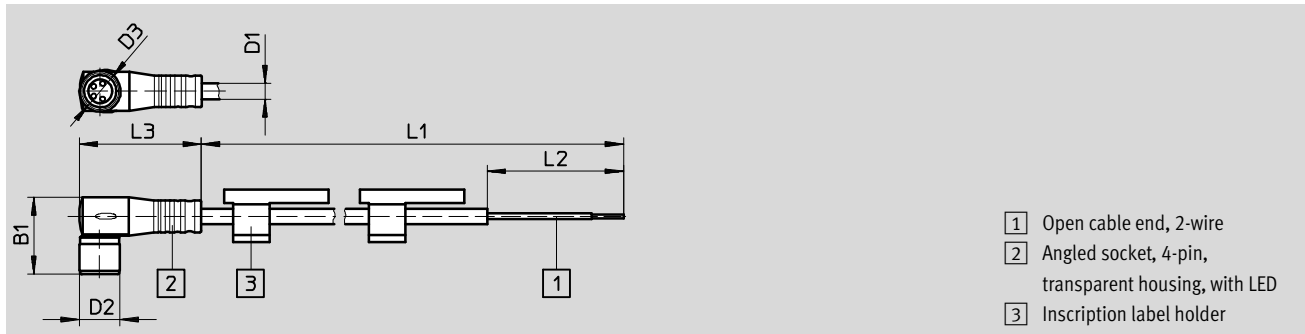
| Socket | Pin | Wire colour | Pin | Plug |
|--------|-----|-------------|-----|------|
|        | 1   | -           | 1   |      |
|        | 2   | -           | -   |      |
|        | 3   | Brown       | 3   |      |
|        | 4   | Blue        | 4   |      |
|        | 1   | -           | -   |      |
|        | 2   | -           | -   |      |
|        | 3   | Black       | -   |      |
|        | 4   | Black       | -   |      |



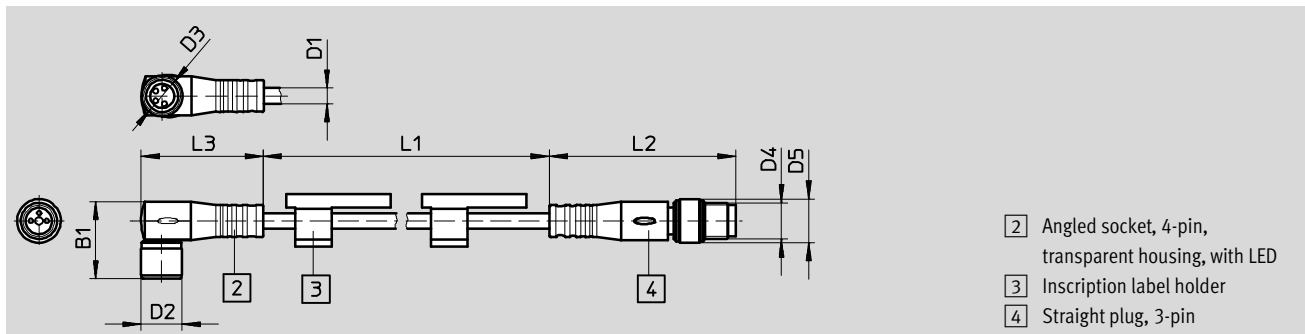
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

NEBV-M8W4L-...-LE2



NEBV-M8W4L-...-M8G3



|                       | B1 | D1  | D2 | D3   | D4   | D5  | L1     | L2   | L3   |
|-----------------------|----|-----|----|------|------|-----|--------|------|------|
| NEBV-M8W4L-E-2.5-LE2  | 17 | 3.4 | 9  | M8x1 | -    | -   | 2,500  | 50   | 26.9 |
| NEBV-M8W4L-E-5-LE2    |    |     |    |      |      |     | 5,000  |      |      |
| NEBV-M8W4L-E-10-LE2   |    |     |    |      |      |     | 10,000 |      |      |
| NEBV-M8W4L-E-2.5-M8G3 | 17 | 3.3 | 9  | M8x1 | M8x1 | 9.6 | 2,500  | 41.1 | 26.9 |
| NEBV-M8W4L-E-5-M8G3   |    |     |    |      |      |     | 5,000  |      |      |
| NEBV-M8W4L-E-10-M8G3  |    |     |    |      |      |     | 10,000 |      |      |

## Ordering data

|  | Description  | Product weight [g] | Cable length [m] | Part No. | Type                  |
|--|--|--------------------|------------------|----------|-----------------------|
|  | Angled socket, M8x1, 4-pin; cable, 2-wire              | 45                 | 2.5              | 562471   | NEBV-M8W4L-E-2.5-LE2  |
|  |  | 85                 | 5                | 562472   | NEBV-M8W4L-E-5-LE2    |
|  |  | 165                | 10               | 562473   | NEBV-M8W4L-E-10-LE2   |
|  | Angled socket, M8x1, 4-pin; straight plug, M8x1, 3-pin | 50                 | 2.5              | 562468   | NEBV-M8W4L-E-2.5-M8G3 |
|  |  | 90                 | 5                | 562469   | NEBV-M8W4L-E-5-M8G3   |
|  |  | 170                | 10               | 562470   | NEBV-M8W4L-E-10-M8G3  |

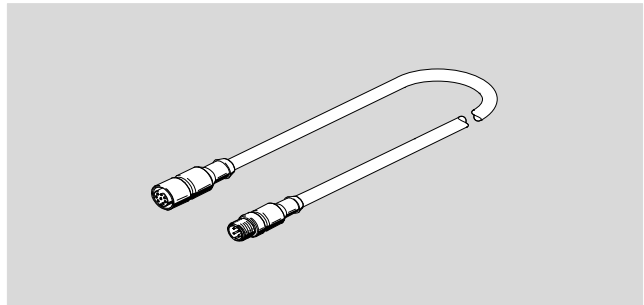
# Connecting cables for valves

NEBV-M12G8 – Accessories for Proportional pressure regulators VPPM



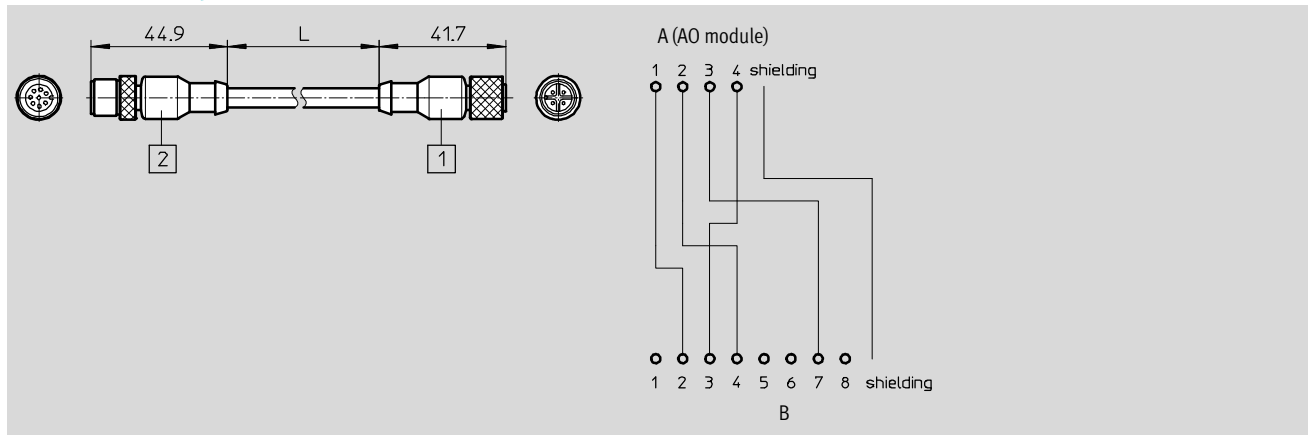
## Plug socket with cable NEBV-M12G8-K-...-M12G4

For connecting the VPPM with the analogue output modules of the controller CPX.



## Dimensions and pin allocation

Download CAD data → [www.festo.com](http://www.festo.com)



4

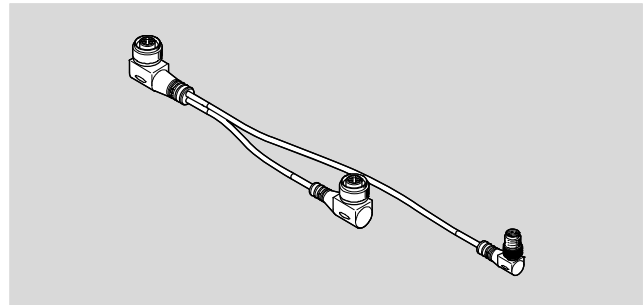
| Type                 | 2                                      | 1  | L1  |
|----------------------|--|--|-----|
| NEBV-M12G8-K-2-M12G4 | Straight socket, M12,<br>8-pin to VPPM | Straight plug, M12,<br>4-pin to CPX module | 2 m |
| NEBV-M12G8-K-5-M12G4 |  |  | 5 m |

| Ordering data    |   | Part No.                                    | Type                                |
|------------------|---|---|-------------------------------------|
| Connecting cable |   | Technical data → Internet: connecting cable |                                     |
|                  | Straight socket, 8-pin, M12                               | 2 m   | <b>525616</b> SIM-M12-8GD-2-PU      |
|                  |   | 5 m   | <b>525618</b> SIM-M12-8GD-5-PU      |
|                  |   | 10 m  | <b>570008</b> SIM-M12-8GD-10-PU     |
|                  | Angled socket, 8-pin, M12                                 | 2 m   | <b>542256</b> NEBU-M12W8-K-2-N-LE8  |
|                  |   | 5 m   | <b>542257</b> NEBU-M12W8-K-5-N-LE8  |
|                  |   | 10 m  | <b>570007</b> NEBU-M12W8-K-10-N-LE8 |
|                  | One straight socket, 8-pin, and one straight plug, 4-pin  | 2 m   | <b>553575</b> NEBV-M12G8-K-2-M12G4  |
|                  |   | 5 m   | <b>553576</b> NEBV-M12G8-K-5-M12G4  |
|                  | One straight socket, 8-pin, and two straight plugs, 4-pin | <b>547888</b>                               | NEBV-M12G8-KD-3-M12G4               |
| Setpoint module  |   | Technical data → Internet: mpz              |                                     |
|                  | Generation of 6+1 analogue setpoint values                | <b>546224</b>                               | MPZ-1-24DC-SGH-6-SW5                |

| Ordering data IO-Link |  | Part No.                                    | Type                                     |
|-----------------------|--|---|--|
| Connecting cable      |  | Technical data → Internet: connecting cable |  |
|                       | Straight socket, 5-pin, M12x1,<br>protection class IP65, IP68, IP69K | 5 m   | <b>574321</b> NEBU-M12G5-E-5-Q8N-M12G5   |
|                       |  | 7 m   | <b>574322</b> NEBU-M12G5-E-7.5-Q8N-M12G5 |
|                       |  | 10 m  | <b>574323</b> NEBU-M12G5-E-10-Q8N-M12G5  |

## Connecting cable NEDV-L2R1-V7

- Connecting cable for VPWP valves
- Pre-assembled
- 0.2 m cable length
- For connection to sub-base VAPB-S3



## General technical data

|                              |   |          |
|------------------------------|---|----------|
| Electrical connection        | 2x angled sockets, M12, 3-pin<br>One angled plug, M8, 4-pin |          |
| Based on standard            | EN 61076-2-101, EN 61076-2-104, EN 61984                    |          |
| Cable composition            | [mm <sup>2</sup> ]  | 2x0.14   |
| Cable diameter               | [mm]  | 2.9      |
| Cable length                 | [m]   | 0.2      |
| Operating voltage range      | [DC V]  | 0 ... 30 |
| Acceptable current load      | [A]   | 2        |
| Mounting position            | Any   |          |
| Protection class to EN 60529 | IP65  |          |

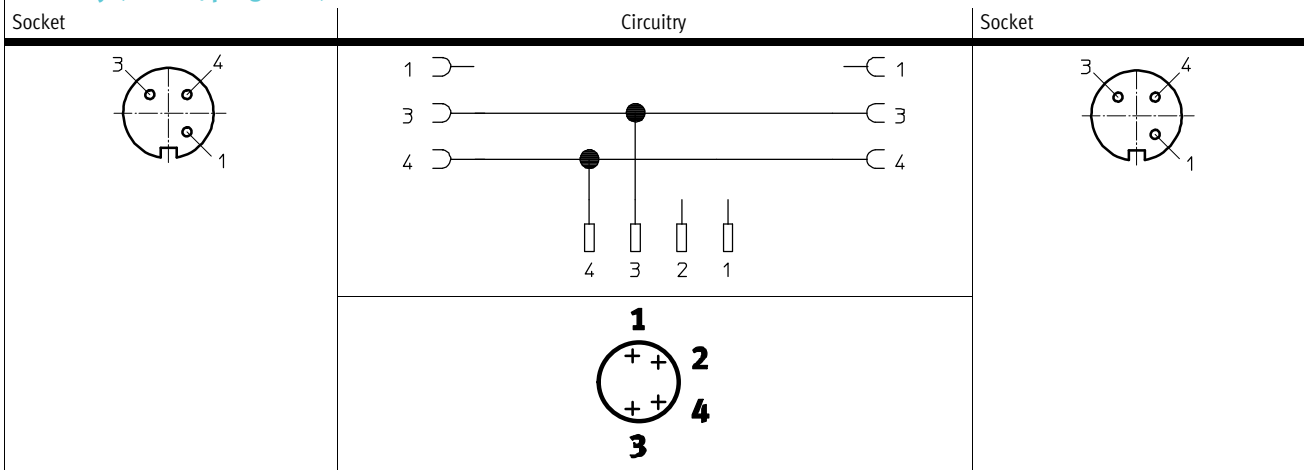
## Materials

|                   |                |
|-------------------|----------------|
| Cable sheath      | TPE-U (PUR)    |
| Note on materials | RoHS-compliant |

## Operating and environmental conditions

|                     |      |             |
|---------------------|------|-------------|
| Ambient temperature | [°C] | -25 ... +80 |
|---------------------|------|-------------|

## Circuitry (socket/plug view)



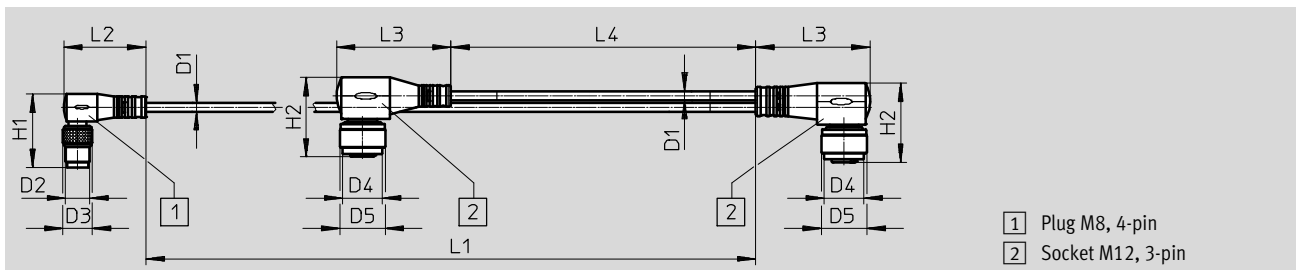
# Connecting cables for valves

NEDV-L2R1-V7 – Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

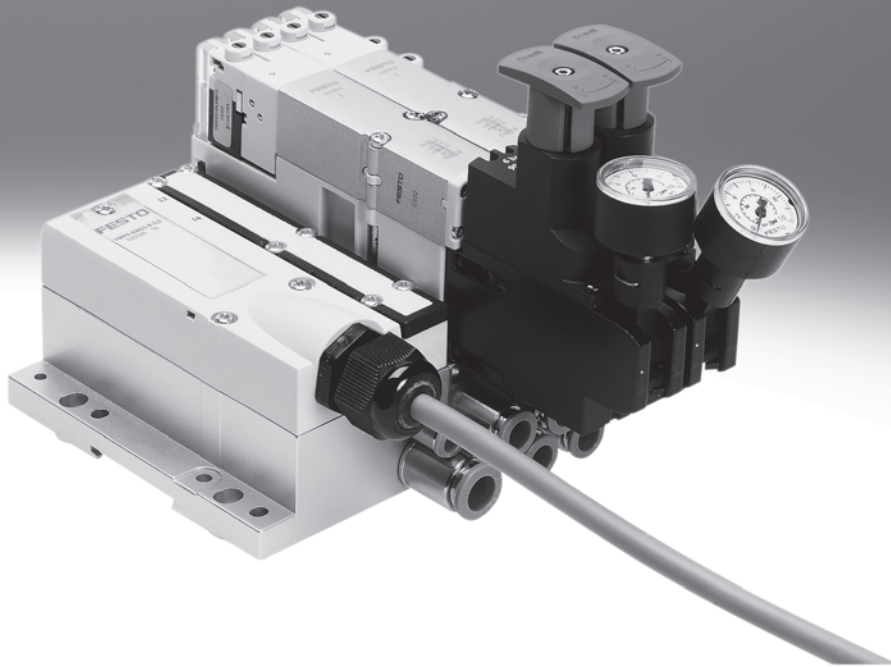


- 1 Plug M8, 4-pin
- 2 Socket M12, 3-pin

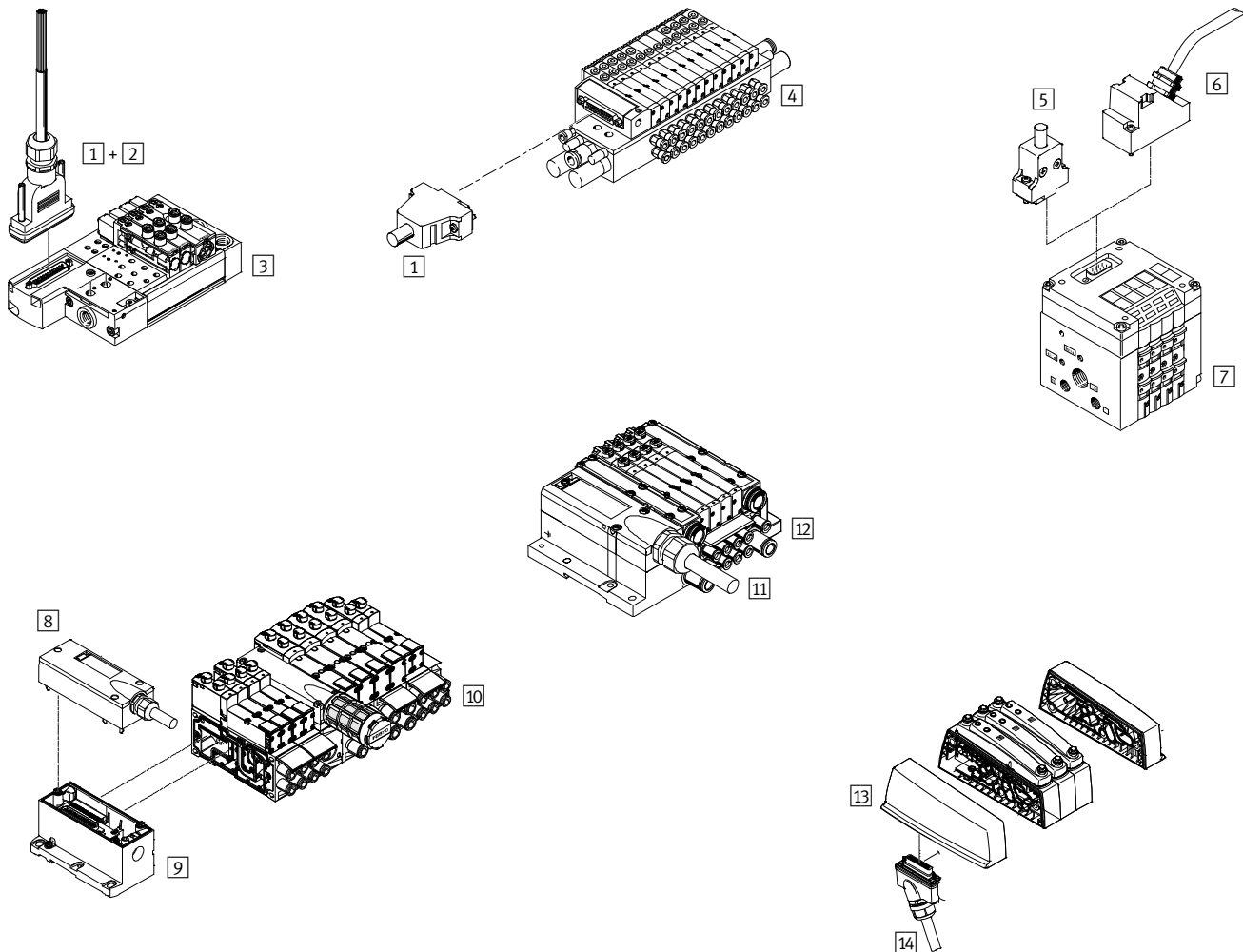
| Type                                    | D1<br>∅ | D2 | D3<br>∅ | D4  | D5<br>∅ | H1 | H2 | L1  | L2   | L3   | L4  |
|---|---------|----|---------|-----|---------|----|----|-----|------|------|-----|
| NEDV-L2R1-V7-M12W3-K-0.1L1-N-M8W4-0.2R1 | 2.9     | M8 | 9.6     | M12 | 15      | 24 | 26 | 200 | 26.9 | 37.5 | 100 |

## Ordering data

| Electrical connection   | Product weight<br>[g] | Length<br>[m] | Part No.       | Type   |
|---|-----------------------|---------------|----------------|--|
| <ul style="list-style-type: none"> <li>• 2x angled sockets, M12, 3-pin</li> <li>• One angled plug, M8, 4-pin</li> </ul> | 28                    | 0.2           | <b>2384165</b> | <b>NEDV-L2R1-V7-M12W3-K-0.1L1-N-M8W4-0.2R1</b> |



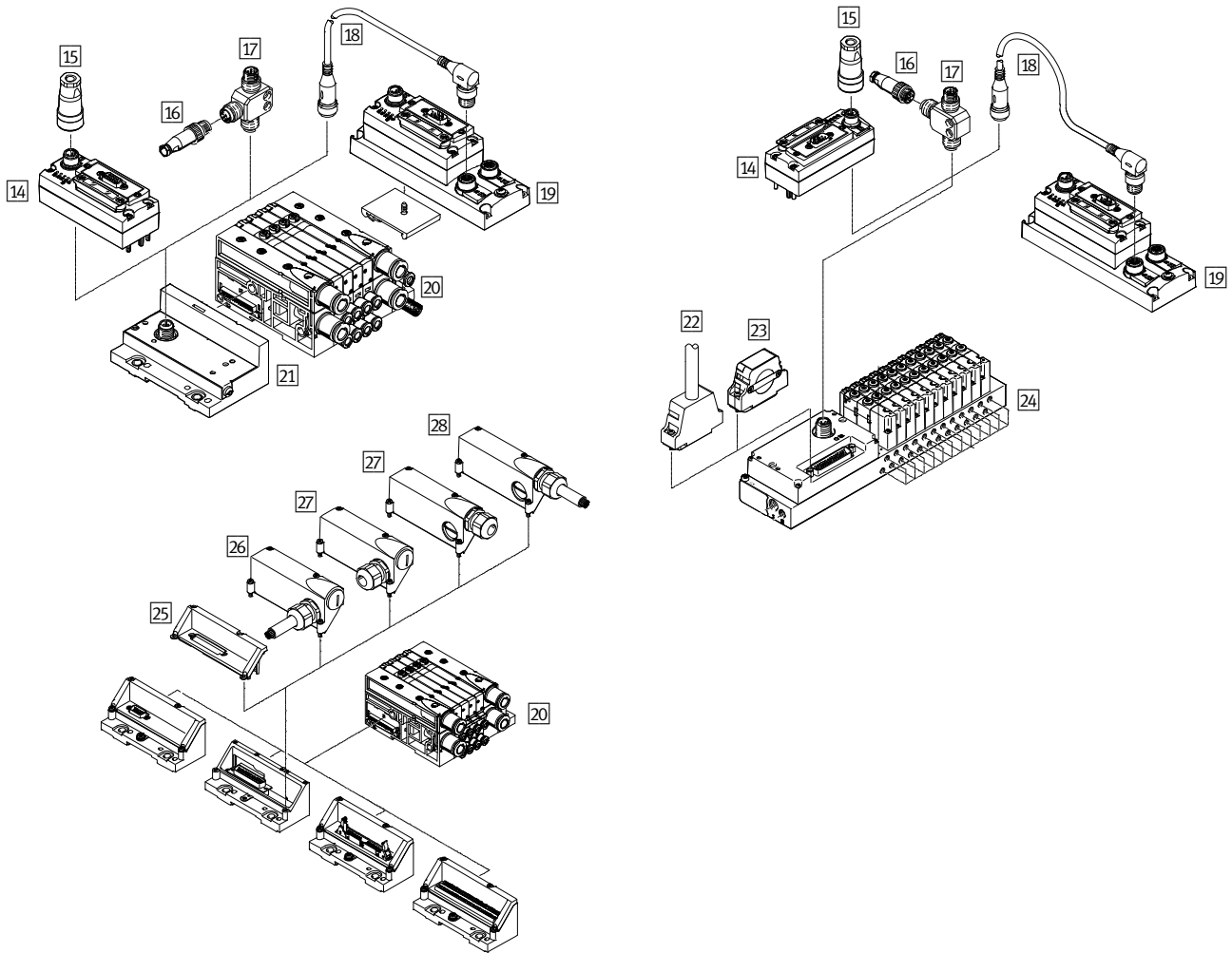
## Valve terminals with multi-pin plug connection



5

| Designation                           | Type  | → Page/Internet   |
|---------------------------------------|---|-------------------|
| 1 Connecting cable                    | KMP6-...                                      | 173               |
| 2 Connecting cable                    | NEBV-S1G25-K-2.5-N-LE15                       | 145               |
| 3 Valve terminal                      | VTUB  | vtub              |
| 4 Valve terminal                      | CPV-SC  | cpv-sc            |
| 5 Connecting cable                    | KMP3-...<br>KMP4-...<br>KMP6-...              | 169<br>171<br>173 |
| 6 Connecting cable                    | KEA-1-...                                     | 167               |
| Plug socket with cable                | KMYZ-4-...-B                                  | 118               |
| 7 Valve terminal                      | CPV   | cpv               |
| 8 Connecting cable                    | NEBV-S1W37                                    | 155               |
| 9 Multi-pin plug connection           |   | vtsa              |
| 10 Valve terminal                     | VTSA  | vtsa              |
| 11 Connecting cable for self-assembly | VMPA-KMS...<br>VMPA-KMS1-...<br>VMPA-KMS2-... | 163               |
| 12 Valve terminal                     | MPA-S   | mpa               |
| 13 Valve terminal                     | MPA-C   | mpa               |
| 14 Connecting cable                   | NEBV-C-S1WA                                   | 144               |

## Valve terminals with multi-pin plug connection and I-Port connection



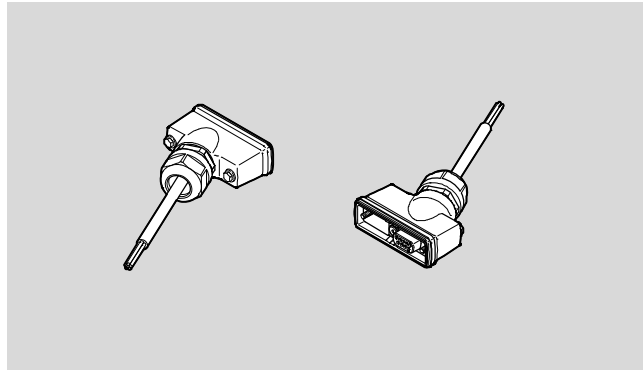
| Designation                                       | Type                        | → Page/Internet |
|---|-----------------------------|-----------------|
| 14 Bus node                                       | CTEU-CC                     | cteu            |
| 15 Plug socket                                    | FBSD-GD                     | 269             |
| 16 Plug socket                                    | SEA-M12                     | 237             |
| 17 T-adapter                                      | FB-TA-M12                   | 259             |
| 18 Connecting cable                               | NEBU-M12G5-E<br>NEBU-M12W5  | 35              |
| 19 Electrical subbase                             | CAPC-F1-E-M12               | capc            |
| 20 Valve terminal                                 | MPA-L                       | mpa-l           |
| 21 Electrical connection I-Port                   | VMPAL-EPL-IP032             | vmpal-epl       |
| 22 Connecting cable for multi-pin plug connection | KMP6-25P-12<br>NEBV-S1G44-K | 173<br>145      |
| 23 Plug socket                                    | NEFF-S1G44                  | 346             |
| 24 Valve terminal                                 | VTOC                        | vtoc            |
| 25 End plate                                      | VMPAL-EPL-SD                | vmpal-epl       |
| 26 Connecting cable                               | VMPAL-KM-S-SD25-IP67        | 165             |
| 27 Connecting cable                               | VMPAL-KM-SD                 | 165             |
| 28 Connecting cable                               | VMPAL-KM-V-SD25-IP67        | 165             |

# Connecting cables for valve terminals

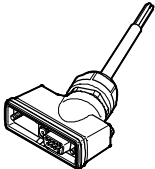
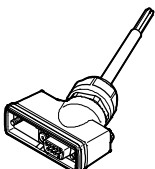
NEBC-C-S1WA – Technical data

**FESTO**

## Connecting cable NEBC-C-S1WA



### Ordering data

|   | Code                 | Description                                     | Part No. | Type   |
|---|----------------------|---|----------|--|
| <b>Connecting cable for I-Port interface/IO-Link</b>                                |                      |   |          |  |
|   | Connecting cable: FH | 9-pin socket, Sub-D, open cable end<br>5-wire   | 2.5 m    | <b>2376018</b> NEBC-C-S1WA9-F-2.5-N-B-LE5-PT-S10 |
|   | Connecting cable: FI |   | 5 m      | <b>2376019</b> NEBC-C-S1WA9-F-5-N-B-LE5-PT-S10   |
|   | Connecting cable: FJ |   | 10 m     | <b>2376020</b> NEBC-C-S1WA9-F-10-N-B-LE5-PT-S10  |
| <b>Connecting cable for multi-pin plug connection</b>                               |                      |   |          |  |
|  | Connecting cable: FA | 25-pin socket, Sub-D, open cable end<br>25-wire | 2.5 m    | <b>2265131</b> NEBV-C-S1WA25-F-2.5-N-LE25-S10    |
|   | Connecting cable: FB |   | 5 m      | <b>2265132</b> NEBV-C-S1WA25-F-5-N-LE25-S10      |
|   | Connecting cable: FC |   | 10 m     | <b>2265133</b> NEBV-C-S1WA25-F-10-N-LE25-S10     |
|   | Connecting cable: FD | 44-pin socket, Sub-D, open cable end<br>36-wire | 2.5 m    | <b>577376</b> NEBV-C-S1WA44-F-2.5-N-LE36-S10     |
|   | Connecting cable: FE |   | 5 m      | <b>577377</b> NEBV-C-S1WA44-F-5-N-LE36-S10       |
|   | Connecting cable: FG |   | 10 m     | <b>577378</b> NEBV-C-S1WA44-F-10-N-LE36-S10      |



**Connecting cable**  
**NEBV-S1G25**  
**NEBV-S1WA25**  
**NEBV-C-S1WA25**

- Connecting cable for multi-pin plug connection
- Pre-assembled
- Straight or angled socket
- Cable lengths 2.5 m, 5 m or 10 m
- 15 or 25 wires
- Sub-D, 25-pin



## General technical data

|                       |                      |
|-----------------------|----------------------|
| Electrical connection | Sub-D socket, 25-pin |
|                       | Open end             |
| Type of mounting      | 4-40UNC              |

## Technical data

| Type                                  |                    | NEBV-...-LE15 | NEBV-...-LE25 |
|---------------------------------------|--------------------|---------------|---------------|
| Cable composition                     | [mm <sup>2</sup> ] | 15 x 0.34     | 20 x 0.25     |
|                                       | [mm <sup>2</sup> ] | –             | 5 x 0.34      |
| Cable diameter                        | [mm]               | 9             | 10.5          |
| Cable characteristics                 |                    | Standard      | Standard      |
| Min. cable bending radius             | [mm]               | 90            | 105           |
| Max. tightening torque plug connector | [Nm]               | 0.2           | 0.2           |
| Nominal operating voltage             | [V DC]             | 24            | 24            |
| Degree of protection to EN 60529      |                    | IP65, IP67    | IP65, IP67    |

## Technical data

| Type                                  |                    | NEBV-...-LE25-S6        | NEBV-...-LE25-S9 | NEBV-...-LE25-S10 |
|---------------------------------------|--------------------|-------------------------|------------------|-------------------|
| Mounting position                     |                    | Any                     |                  |                   |
| Cable composition                     | [mm <sup>2</sup> ] | 25 x 0.34               |                  |                   |
| Cable diameter                        | [mm]               | 10.2                    |                  |                   |
| Cable diameter tolerance              | [mm]               | ±0.25                   |                  |                   |
| Cable characteristic                  |                    | For static applications |                  |                   |
| Min. cable bending radius             | [mm]               | 122                     |                  |                   |
| Max. tightening torque plug connector |                    | –                       | –                | 0.8               |
| Operating voltage range               | [V DC]             | 0 ... 30                |                  |                   |
| Acceptable current load at 40 °C      | [A]                | 2.6                     |                  |                   |
| Degree of protection to EN 60529      |                    | IP40                    | IP65, IP67       | IP65, IP67, IP69K |

# Connecting cables for valve terminals

NEBV-S1G25/NEBV-S1WA25/NEBV-C, Sub-D, 25-pin – Technical data

FESTO

## Materials

| Type              | NEBV-...-LE15  | NEBV-...-LE25 |
|-------------------|----------------|---------------|
| Housing           | PBT            |               |
| Union nut         | PA             |               |
| Seals             | TPE-O          |               |
| Cable sheath      | PVC            |               |
| Note on materials | RoHS-compliant |               |

| Type              | NEBV-...-LE25-S6   | NEBV-...-LE25-S9 | NEBV-...-LE25-S10 |
|-------------------|--------------------|------------------|-------------------|
| Housing           | Reinforced PC      | PA66-GF30        | Reinforced PC     |
| Seals             | –                  | –                | EPDM              |
| Pin contact       | Gold-plated bronze |                  |                   |
| Cable sheath      | PVC                |                  |                   |
| Note on materials | RoHS-compliant     |                  |                   |

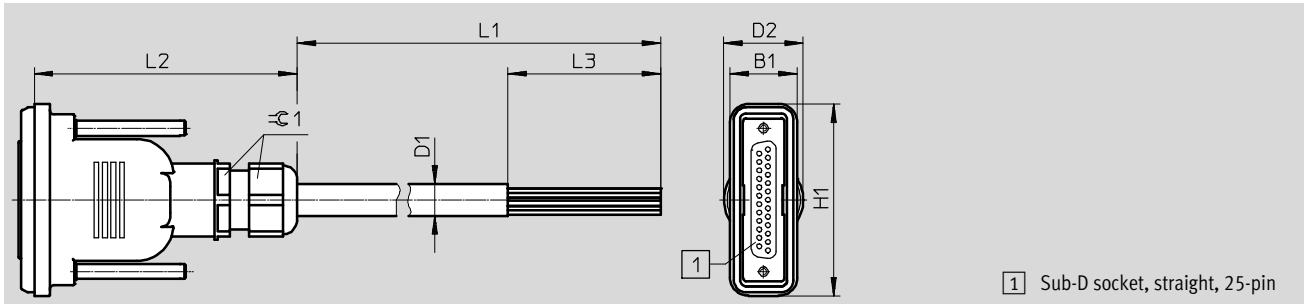
## Operating and environmental conditions

| Type  | NEBV-...-LE15 | NEBV-...-LE25 |
|---|---------------|---------------|
| Ambient temperature with flexible cable installation [°C] | –5 ... +50    | –5 ... +50    |

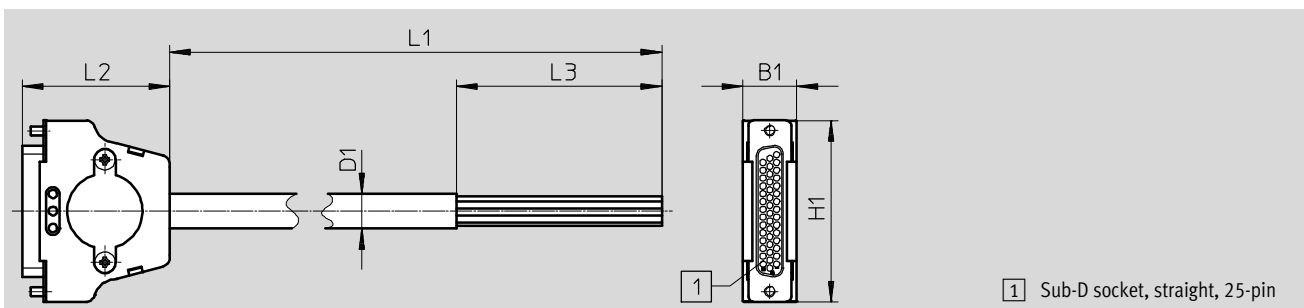
| Type                     | NEBV-...-LE25-S6 | NEBV-...-LE25-S9 | NEBV-...-LE25-S10 |
|--------------------------|------------------|------------------|-------------------|
| Ambient temperature [°C] | –20 ... +80      | –20 ... +80      | –                 |
| Storage temperature [°C] | –                | –                | –20 ... +40       |
| Degree of contamination  | 2                | 3                | 3                 |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type                    | B1 | D1<br>∅ | D2<br>∅ | H1   | L1     | L2     | L3 | ≅C1 |
|-------------------------|----|---------|---------|------|--------|--------|----|-----|
| NEBV-S1G25-K-2,5-N-LE15 | 22 | 9       | 26      | 62.8 | 2500   | 86±0.5 | 60 | 24  |
| NEBV-S1G25-K-5-N-LE15   |    |         |         |      | 5000   |        |    |     |
| NEBV-S1G25-K-10-N-LE15  |    |         |         |      | 10,000 |        |    |     |
| NEBV-S1G25-K-2.5-N-LE25 | 22 | 10.4    | 26      | 62.8 | 2500   | 86±0.5 | 50 | 24  |
| NEBV-S1G25-K-5-N-LE25   |    |         |         |      | 5000   |        |    |     |
| NEBV-S1G25-K-10-N-LE25  |    |         |         |      | 10,000 |        |    |     |



| Type                       | B1   | D1<br>∅ | H1 | L1     | L2   | L3 |
|----------------------------|------|---------|----|--------|------|----|
| NEBV-S1G25-K-2.5-N-LE25-S6 | 15.8 | 10.2    | 53 | 2500   | 43.1 | 60 |
| NEBV-S1G25-K-5-N-LE25-S6   |      |         |    | 5000   |      |    |
| NEBV-S1G25-K-10-N-LE25-S6  |      |         |    | 10,000 |      |    |

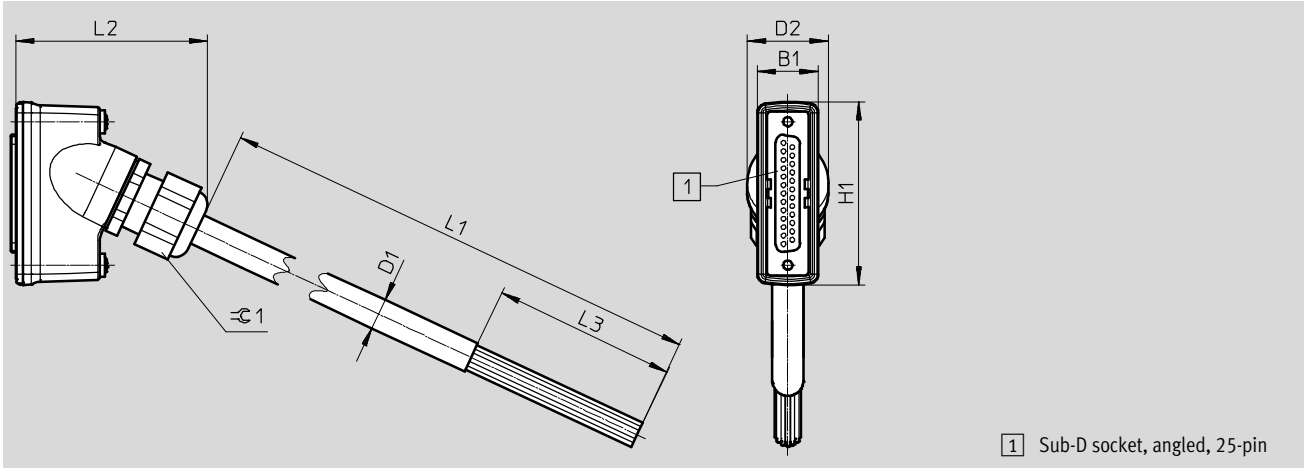
# Connecting cables for valve terminals

NEBV-S1G25/NEBV-S1WA25/NEBV-C, Sub-D, 25-pin – Technical data



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



1 Sub-D socket, angled, 25-pin

| Type                           | B1 | D1<br>∅ | D2<br>∅ | H1 | L1     | L2 | L3 | ⊕1 |
|--------------------------------|----|---------|---------|----|--------|----|----|----|
| NEBV-S1WA25-K-2.5-N-LE25-S9    | 20 | 10.2    | 26.5    | 60 | 2500   | 60 | 60 | 24 |
| NEBV-S1WA25-K-5-N-LE25-S9      |    |         |         |    | 5000   |    |    |    |
| NEBV-S1WA25-K-10-N-LE25-S9     |    |         |         |    | 10,000 |    |    |    |
| NEBV-C-S1WA25-F-2.5-N-LE25-S10 | 20 | 10.2    | 27      | 60 | 2500   | 60 | 60 | -  |
| NEBV-C-S1WA25-F-5-N-LE25-S10   |    |         |         |    | 5000   |    |    |    |
| NEBV-C-S1WA25-F-10-N-LE25-S10  |    |         |         |    | 10,000 |    |    |    |

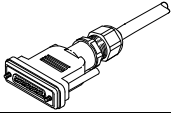
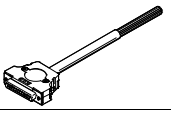
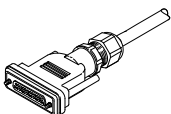
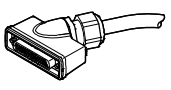
5

## Circuitry (socket view)

|  | Open end, 15-wire |                           | Open end, 25-wire |                           |
|--|-------------------|---------------------------|-------------------|---------------------------|
|  | Pin               | Wire colour <sup>1)</sup> | Pin               | Wire colour <sup>1)</sup> |
|  | 1                 | WH                        | 1                 | WH                        |
|  | 2                 | BN                        | 2                 | BN                        |
|  | 3                 | GN                        | 3                 | GN                        |
|  | 4                 | YE                        | 4                 | YE                        |
|  | 5                 | GY                        | 5                 | GY                        |
|  | 6                 | PK                        | 6                 | PK                        |
|  | 7                 | BU                        | 7                 | BU                        |
|  | 8                 | RD                        | 8                 | RD                        |
|  | 9                 | BK                        | 9                 | BK                        |
|  | 10                | VT                        | 10                | VT                        |
|  | 11                | GY PK                     | 11                | GY PK                     |
|  | 12                | RD BU                     | 12                | RD BU                     |
|  | 13                | -                         | 13                | GN WH                     |
|  | 14                | -                         | 14                | BN GN                     |
|  | 15                | -                         | 15                | YE WH                     |
|  | 16                | -                         | 16                | BN YE                     |
|  | 17                | -                         | 17                | GY WH                     |
|  | 18                | -                         | 18                | BN GY                     |
|  | 19                | -                         | 19                | WH PK                     |
|  | 20                | -                         | 20                | BN PK                     |
|  | 21                | -                         | 21                | BU WH                     |
|  | 22                | -                         | 22                | BN BU                     |
|  | 23                | GN WH                     | 23                | RD WH                     |
|  | 24                | BN GN                     | 24                | BN RD                     |
|  | 25                | YE WH                     | 25                | BK WH                     |

1) To IEC 757

## Ordering data

|  | Cable composition [mm <sup>2</sup> ] | Degree of protection | Weight [g] | Cable length [m] | Part No.       | Type                                  |
|--|--------------------------------------|----------------------|------------|------------------|----------------|---------------------------------------|
| <b>Straight socket – open end, 15-wire</b>   |                                      |                      |            |                  |                |                                       |
|   | 15 x 0.34                            | IP65, IP67           | 370        | 2.5              | <b>538222</b>  | <b>NEBV-S1G25-K-2.5-N-LE15</b>        |
|  |                                      |                      | 670        | 5                | <b>538223</b>  | <b>NEBV-S1G25-K-5-N-LE15</b>          |
|  |                                      |                      | 1270       | 10               | <b>538224</b>  | <b>NEBV-S1G25-K-10-N-LE15</b>         |
| <b>Straight socket – open end, 25-wire</b>   |                                      |                      |            |                  |                |                                       |
|   | 25 x 0.34                            | IP40                 | 429        | 2.5              | <b>575417</b>  | <b>NEBV-S1G25-K-2.5-N-LE25-S6</b>     |
|  |                                      |                      | 777        | 5                | <b>575418</b>  | <b>NEBV-S1G25-K-5-N-LE25-S6</b>       |
|  |                                      |                      | 1572       | 10               | <b>575419</b>  | <b>NEBV-S1G25-K-10-N-LE25-S6</b>      |
|   | 20 x 0.25<br>5 x 0.34                | IP65, IP67           | 490        | 2.5              | <b>538225</b>  | <b>NEBV-S1G25-K-2.5-N-LE25</b>        |
|  |                                      |                      | 910        | 5                | <b>538226</b>  | <b>NEBV-S1G25-K-5-N-LE25</b>          |
|  |                                      |                      | 1750       | 10               | <b>538227</b>  | <b>NEBV-S1G25-K-10-N-LE25</b>         |
| <b>Angled socket – open end, 25-wire</b>   |                                      |                      |            |                  |                |                                       |
|  | 25 x 0.34                            | IP65, IP67           | 500        | 2.5              | <b>575423</b>  | <b>NEBV-S1WA25-K-2.5-N-LE25-S9</b>    |
|  |                                      |                      | 900        | 5                | <b>575424</b>  | <b>NEBV-S1WA25-K-5-N-LE25-S9</b>      |
|  |                                      |                      | 1800       | 10               | <b>575425</b>  | <b>NEBV-S1WA25-K-10-N-LE25-S9</b>     |
|  |                                      | IP65, IP67,<br>IP69K | 500        | 2.5              | <b>2265131</b> | <b>NEBV-C-S1WA25-F-2.5-N-LE25-S10</b> |
|  |                                      |                      | 900        | 5                | <b>2265132</b> | <b>NEBV-C-S1WA25-F-5-N-LE25-S10</b>   |
|  |                                      |                      | 1800       | 10               | <b>2265133</b> | <b>NEBV-C-S1WA25-F-10-N-LE25-S10</b>  |

# Connecting cables for valve terminals

NEBV-S1G44/NEBV-WA44/NEBV-C, Sub-D, 44-pin – Technical data

FESTO

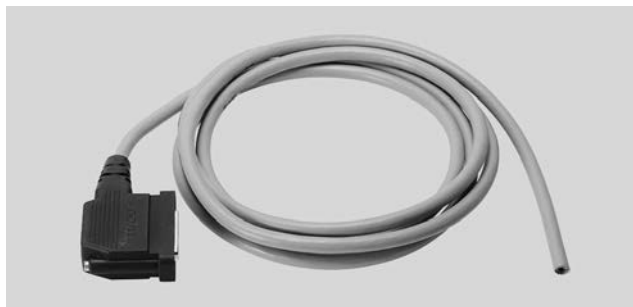
## Connecting cable

NEBV-S1G44

NEBV-S1WA44

NEBV-C-S1WA44

- Connecting cable for multi-pin plug connection
- Pre-assembled
- Straight or angled socket
- Cable lengths 2.5 m, 5 m or 10 m
- 36, 40 or 44 wires
- Sub-D, 44-pin



## General technical data

|                                  |                         |
|----------------------------------|-------------------------|
| Electrical connection            | Sub-D socket, 44-pin    |
|                                  | Open end                |
| Type of mounting                 | 4-40UNC                 |
| Mounting position                | Any                     |
| Cable characteristics            | For static applications |
| Operating voltage range          | [V DC] 0 ... 30         |
| Acceptable current load at 40 °C | [A] 0.86                |

## Technical data

| Type                             |                    | NEBV-...-LE39 | NEBV-...-S6 | NEBV-...-S10      | NEBV-...-S9 |
|----------------------------------|--------------------|---------------|-------------|-------------------|-------------|
| Cable composition                | [mm <sup>2</sup> ] | 40 x 0.14     | 44 x 0.14   | 36 x 0.14         | 44 x 0.14   |
| Cable diameter                   | [mm]               | 9.6           | 10.2        | 9.6               | 10.2        |
| Cable diameter tolerance         | [mm]               | ±0.5          | ±0.3        | ±0.3              | ±0.3        |
| Min. cable bending radius        | [mm]               | 95            | 122         | 115               | 122         |
| Tightening torque                |                    | –             | –           | 0.8               | –           |
| Degree of protection to EN 60529 |                    | IP65, IP67    | IP40        | IP65, IP67, IP69K | IP65, IP67  |

## Materials

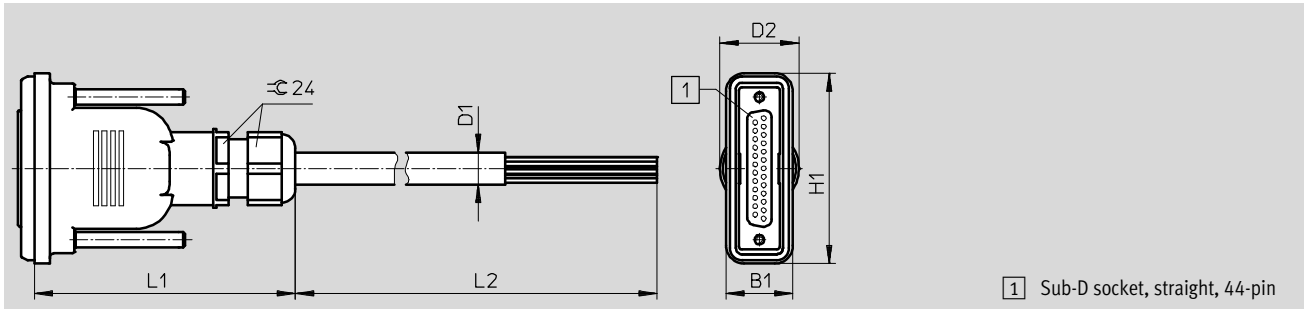
| Type              |  | NEBV-...-LE39      | NEBV-...-S6   | NEBV-...-S10    | NEBV-...-S9 |
|-------------------|--|--------------------|---------------|-----------------|-------------|
| Housing           |  | PBT                | Reinforced PC | Reinforced PA   | PA66-GF30   |
| Seals             |  | –                  | –             | EPDM            | –           |
| Screws            |  | –                  | –             | Stainless steel | –           |
| Pin contact       |  | Gold-plated bronze |               |                 |             |
| Cable sheath      |  | PVC                |               |                 |             |
| Note on materials |  | RoHS-compliant     |               |                 |             |

## Operating and environmental conditions

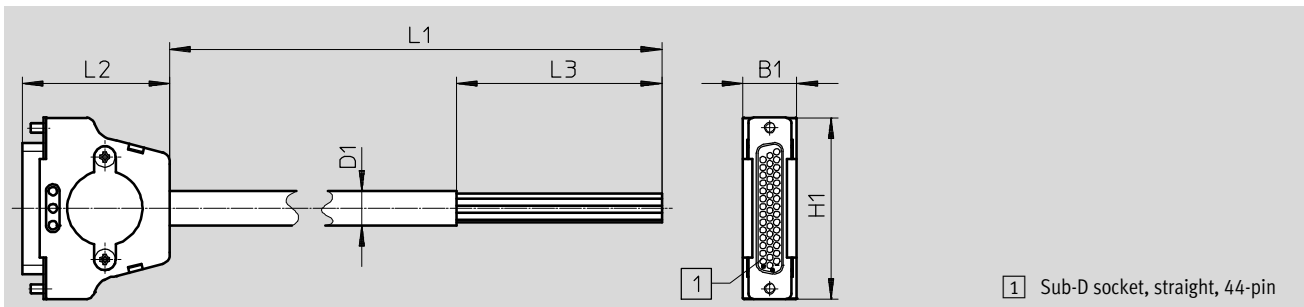
| Type                    |      | NEBV-...-LE39 | NEBV-...-S6 | NEBV-...-S10 | NEBV-...-S9 |
|-------------------------|------|---------------|-------------|--------------|-------------|
| Ambient temperature     | [°C] | –5 ... +60    | –5 ... +80  | –            | –5 ... +80  |
| Storage temperature     | [°C] | –             | –           | –20 ... +40  | –           |
| Degree of contamination |      | –             | –           | 3            | 3           |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type                    | B1 | D1 Ø | D2 Ø | H1   | L1   | L2     |
|-------------------------|----|------|------|------|------|--------|
| NEBV-S1G44-K-2.5-N-LE39 | 22 | 9.6  | 26   | 62.8 | 85±5 | 2500   |
| NEBV-S1G44-K-5-N-LE39   |    |      |      |      |      | 5000   |
| NEBV-S1G44-K-10-N-LE39  |    |      |      |      |      | 10,000 |



| Type                       | B1   | D1 Ø | H1 | L1     | L2   | L3 |
|----------------------------|------|------|----|--------|------|----|
| NEBV-S1G44-K-2.5-N-LE44-S6 | 15.8 | 10.2 | 53 | 2500   | 43.1 | 60 |
| NEBV-S1G44-K-5-N-LE44-S6   |      |      |    | 5000   |      |    |
| NEBV-S1G44-K-10-N-LE44-S6  |      |      |    | 10,000 |      |    |

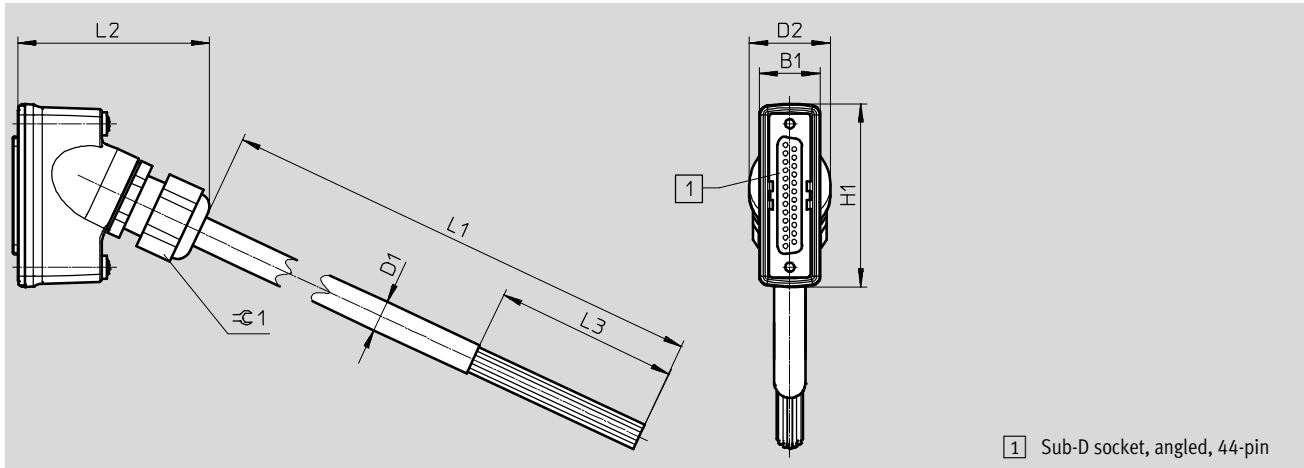
# Connecting cables for valve terminals

NEBV-S1G44/NEBV-WA44/NEBV-C, Sub-D, 44-pin – Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

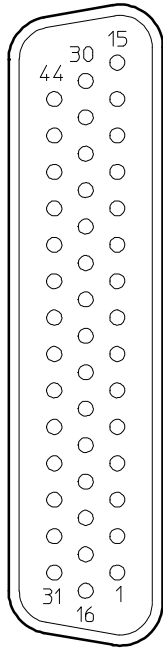


1 Sub-D socket, angled, 44-pin

| Type                           | B1 | D1 Ø | D2 Ø | H1 | L1     | L2 | L3 | ∠1 |
|--------------------------------|----|------|------|----|--------|----|----|----|
| NEBV-C-S1WA44-F-2.5-N-LE36-S10 | 20 | 9.6  | 27   | 60 | 2500   | 60 | 60 | -  |
| NEBV-C-S1WA44-F-5-N-LE36-S10   |    |      |      |    | 5000   |    |    |    |
| NEBV-C-S1WA44-F-10-N-LE36-S10  |    |      |      |    | 10,000 |    |    |    |
| NEBV-S1WA44-K-2.5-N-LE44-S9    | 20 | 10.2 | 26.5 | 60 | 2500   | 60 | 60 | 24 |
| NEBV-S1WA44-K-5-N-LE44-S9      |    |      |      |    | 5000   |    |    |    |
| NEBV-S1WA44-K-10-N-LE44-S9     |    |      |      |    | 10,000 |    |    |    |



## Circuitry (socket view)



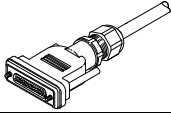
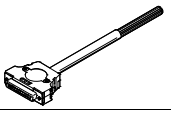
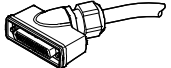
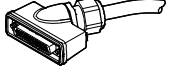
| Open end, 36-wire <sup>1)</sup> |                           | Open end, 40-wire |                           | Open end, 44-wire |                           |
|---------------------------------|---------------------------|-------------------|---------------------------|-------------------|---------------------------|
| Pin                             | Wire colour <sup>1)</sup> | Pin               | Wire colour <sup>1)</sup> | Pin               | Wire colour <sup>1)</sup> |
| 1                               | WH                        | 1                 | WH                        | 1                 | WH                        |
| 2                               | BN                        | 2                 | BN                        | 2                 | BN                        |
| 3                               | GN                        | 3                 | GN                        | 3                 | GN                        |
| 4                               | YE                        | 4                 | YE                        | 4                 | YE                        |
| 5                               | GY                        | 5                 | GY                        | 5                 | GY                        |
| 6                               | PK                        | 6                 | PK                        | 6                 | PK                        |
| 7                               | BU                        | 7                 | BU                        | 7                 | BU                        |
| 8                               | RD                        | 8                 | RD                        | 8                 | RD                        |
| 9                               | BK                        | 9                 | BK                        | 9                 | BK                        |
| 10                              | VT                        | 10                | VT                        | 10                | VT                        |
| 11                              | GY PK                     | 11                | GY PK                     | 11                | GY PK                     |
| 12                              | RD BU                     | 12                | RD BU                     | 12                | RD BU                     |
| 13                              | WH GN                     | 13                | WH GN                     | 13                | WH GN                     |
| 14                              | BN GN                     | 14                | BN GN                     | 14                | BN GN                     |
| 15                              | WH YE                     | 15                | WH YE                     | 15                | WH YE                     |
| 16                              | YE BN                     | 16                | YE BN                     | 16                | YE BN                     |
| 17                              | WH GY                     | 17                | WH GY                     | 17                | WH GY                     |
| 18                              | GY BN                     | 18                | GY BN                     | 18                | GY BN                     |
| 19                              | WH PK                     | 19                | WH PK                     | 19                | WH PK                     |
| 20                              | PK BN                     | 20                | PK BN                     | 20                | PK BN                     |
| 21                              | WH BU                     | 21                | WH BU                     | 21                | WH BU                     |
| 22                              | BN BU                     | 22                | BN BU                     | 22                | BN BU                     |
| 23                              | WH RD                     | 23                | WH RD                     | 23                | WH RD                     |
| 24                              | BN RD                     | 24                | BN RD                     | 24                | BN RD                     |
| 25                              | WH BK                     | 25                | WH BK                     | 25                | WH BK                     |
| 26                              | BN BK                     | 26                | BN BK                     | 26                | BN BK                     |
| 27                              | GY GN                     | 27                | GY GN                     | 27                | GY GN                     |
| 28                              | YE GY                     | 28                | YE GY                     | 28                | YE GY                     |
| 29                              | PK GN                     | 29                | PK GN                     | 29                | PK GN                     |
| 30                              | YE PK                     | 30                | YE PK                     | 30                | YE PK                     |
| 31                              | GN BU                     | 31                | GN BU                     | 31                | GN BU                     |
| 32                              | YE BU                     | 32                | YE BU                     | 32                | YE BU                     |
| 33                              | –                         | 33                | GN RD                     | 33                | GN RD                     |
| 34                              | –                         | 34                | YE RD                     | 34                | YE RD                     |
| 35                              | –                         | 35                | GN BK                     | 35                | GN BK                     |
| 36                              | –                         | 36                | –                         | 36                | YE BK                     |
| 37                              | –                         | 37                | –                         | 37                | GY BU                     |
| 38                              | –                         | 38                | –                         | 38                | PK BU                     |
| 39                              | –                         | 39                | –                         | 39                | GY RD                     |
| 40                              | –                         | 40                | –                         | 40                | PK RD                     |
| 41                              | GN RD                     | 41                | YE BK                     | 41                | GY BK                     |
| 42                              | YE RD                     | 42                | GY BU                     | 42                | PK BK                     |
| 43                              | GN BK                     | 43                | PK BU                     | 43                | BU BK                     |
| 44                              | YE BK                     | 44                | GY RD                     | 44                | RD BK                     |

1) To IEC 757

# Connecting cables for valve terminals

NEBV-S1G44/NEBV-WA44/NEBV-C, Sub-D, 44-pin – Technical data

FESTO

| Ordering data  |                                      |                      |            |                  |               |                                       |
|--|--------------------------------------|----------------------|------------|------------------|---------------|---------------------------------------|
|  | Cable composition [mm <sup>2</sup> ] | Degree of protection | Weight [g] | Cable length [m] | Part No.      | Type                                  |
| Straight socket – open end, 40-wire  |                                      |                      |            |                  |               |                                       |
|   | 40 x 0.14                            | IP65, IP67           | 389        | 2.5              | <b>565289</b> | <b>NEBV-S1G44-K-2.5-N-LE39</b>        |
|  |                                      |                      | 737        | 5                | <b>565290</b> | <b>NEBV-S1G44-K-5-N-LE39</b>          |
|  |                                      |                      | 1432       | 10               | <b>565291</b> | <b>NEBV-S1G44-K-10-N-LE39</b>         |
| Straight socket – open end, 44-wire  |                                      |                      |            |                  |               |                                       |
|   | 44 x 0.14                            | IP40                 | 432        | 2.5              | <b>575113</b> | <b>NEBV-S1G44-K-2.5-N-LE44-S6</b>     |
|  |                                      |                      | 814        | 5                | <b>575114</b> | <b>NEBV-S1G44-K-5-N-LE44-S6</b>       |
|  |                                      |                      | 1600       | 10               | <b>575115</b> | <b>NEBV-S1G44-K-10-N-LE44-S6</b>      |
| Angled socket – open end, 36-wire  |                                      |                      |            |                  |               |                                       |
|   | 36 x 0.14                            | IP65, IP67, IP69K    | 460        | 2.5              | <b>577376</b> | <b>NEBV-C-S1WA44-F-2.5-N-LE36-S10</b> |
|  |                                      |                      | 860        | 5                | <b>577377</b> | <b>NEBV-C-S1WA44-F-5-N-LE36-S10</b>   |
|  |                                      |                      | 1660       | 10               | <b>577378</b> | <b>NEBV-C-S1WA44-F-10-N-LE36-S10</b>  |
| Angled socket – open end, 44-wire  |                                      |                      |            |                  |               |                                       |
|  | 44 x 0.14                            | IP65, IP67           | 460        | 2.5              | <b>575420</b> | <b>NEBV-S1WA44-K-2.5-N-LE44-S9</b>    |
|  |                                      |                      | 860        | 5                | <b>575421</b> | <b>NEBV-S1WA44-K-5-N-LE44-S9</b>      |
|  |                                      |                      | 1660       | 10               | <b>575422</b> | <b>NEBV-S1WA44-K-10-N-LE44-S9</b>     |

**Connecting cable  
NEBV-S1W37**

- Connecting cable for multi-pin plug connection
- Pre-assembled
- Cable lengths 2.5 m, 5 m or 10 m
- 10-wire, 26-wire, 27-wire or 37-wire
- Sub-D, 37-pin



## General technical data

|  |                       |
|--|-----------------------|
| Electrical connection                              | Socket, 37-pin, Sub-D |
| Nominal operating voltage [V DC]                   | 24                    |
| Operating voltage range [V DC]                     | 21.6 ... 26.4         |
| Conductor nominal cross section [mm <sup>2</sup> ] | 0.34                  |
| Cable characteristics                              | Standard              |
| Degree of protection                               | IP65<br>NEMA4         |

## Materials

| Type         | NEBV-S1W37-E-...     | NEBV-S1W37-K-...     | NEBV-S1W37-KM-... |
|--------------|----------------------|----------------------|-------------------|
| Housing      | PA                   | PA                   | PA                |
| Cable sheath | TPE-U (polyurethane) | TPE-U (polyurethane) | PVC               |

## Operating and environmental conditions

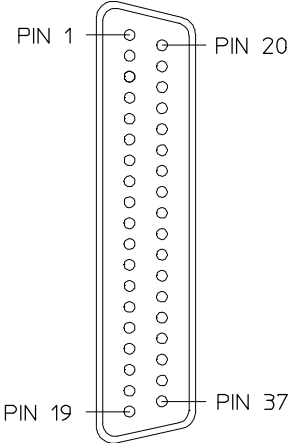
|                          |            |
|--------------------------|------------|
| Ambient temperature [°C] | -5 ... +50 |
|--------------------------|------------|

# Connecting cables for valve terminals

NEBV-S1W37, Sub-D, 37-pin – Technical data

FESTO

## Circuitry (socket view)

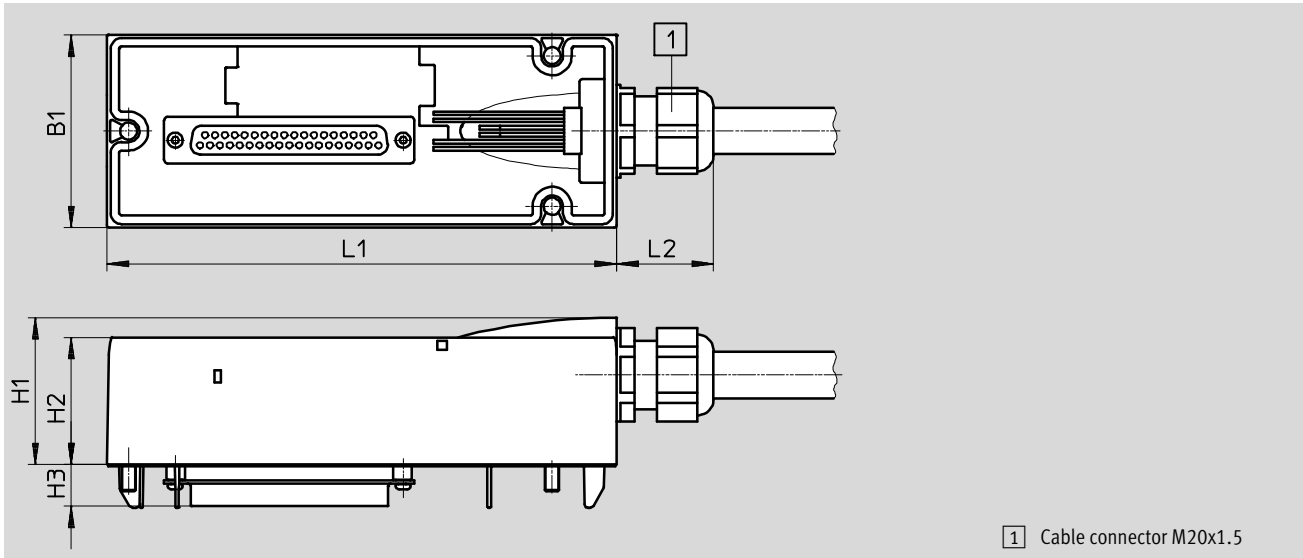


| NEBV-S1W37-...-LE10 |                           | NEBV-S1W37-...-LE26 |                           | NEBV-S1W37-...-LE27 |                           | NEBV-S1W37-...-LE37 |                           |
|---------------------|---------------------------|---------------------|---------------------------|---------------------|---------------------------|---------------------|---------------------------|
| Pin                 | Wire colour <sup>1)</sup> | Pin                 | Wire colour <sup>1)</sup> | Pin                 | Wire colour <sup>1)</sup> | Pin                 | Wire colour <sup>1)</sup> |
| 1                   | WH                        | 1                   | WH                        | 1                   | WH                        | 1                   | WH                        |
| 2                   | BN                        | 2                   | BN                        | 2                   | BN                        | 2                   | BN                        |
| 3                   | GN                        | 3                   | GN                        | 3                   | GN                        | 3                   | GN                        |
| 4                   | YE                        | 4                   | YE                        | 4                   | YE                        | 4                   | YE                        |
| 5                   | GY                        | 5                   | GY                        | 5                   | GY                        | 5                   | GY                        |
| 6                   | PK                        | 6                   | PK                        | 6                   | PK                        | 6                   | PK                        |
| 7                   | BU                        | 7                   | BU                        | 7                   | BU                        | 7                   | BU                        |
| 8                   | RD                        | 8                   | RD                        | 8                   | RD                        | 8                   | RD                        |
| 9                   | –                         | 9                   | GY PK                     | 9                   | GY PK                     | 9                   | GY PK                     |
| 10                  | –                         | 10                  | RD BU                     | 10                  | RD BU                     | 10                  | RD BU                     |
| 11                  | –                         | 11                  | WH GN                     | 11                  | WH GN                     | 11                  | WH GN                     |
| 12                  | –                         | 12                  | BN GN                     | 12                  | BN GN                     | 12                  | BN GN                     |
| 13                  | –                         | 13                  | WH YE                     | 13                  | WH YE                     | 13                  | WH YE                     |
| 14                  | –                         | 14                  | YE BN                     | 14                  | YE BN                     | 14                  | YE BN                     |
| 15                  | –                         | 15                  | WH GY                     | 15                  | WH GY                     | 15                  | WH GY                     |
| 16                  | –                         | 16                  | GY BN                     | 16                  | GY BN                     | 16                  | GY BN                     |
| 17                  | –                         | 17                  | WH PK                     | 17                  | WH PK                     | 17                  | WH PK                     |
| 18                  | –                         | 18                  | PK BN                     | 18                  | PK BN                     | 18                  | PK BN                     |
| 19                  | –                         | 19                  | WH BU                     | 19                  | WH BU                     | 19                  | WH BU                     |
| 20                  | –                         | 20                  | BN BU                     | 20                  | BN BU                     | 20                  | BN BU                     |
| 21                  | –                         | 21                  | WH RD                     | 21                  | WH RD                     | 21                  | WH RD                     |
| 22                  | –                         | 22                  | BN RD                     | 22                  | BN RD                     | 22                  | BN RD                     |
| 23                  | –                         | 23                  | –                         | 23                  | GY GN                     | 23                  | GY GN                     |
| 24                  | –                         | 24                  | –                         | 24                  | –                         | 24                  | YE GY                     |
| 25                  | –                         | 25                  | –                         | 25                  | –                         | 25                  | PK GN                     |
| 26                  | –                         | 26                  | –                         | 26                  | –                         | 26                  | YE PK                     |
| 27                  | –                         | 27                  | –                         | 27                  | –                         | 27                  | GN BU                     |
| 28                  | –                         | 28                  | –                         | 28                  | –                         | 28                  | YE BU                     |
| 29                  | –                         | 29                  | –                         | 29                  | –                         | 29                  | GN RD                     |
| 30                  | –                         | 30                  | –                         | 30                  | –                         | 30                  | YE RD                     |
| 31                  | –                         | 31                  | –                         | 31                  | –                         | 31                  | GN BK                     |
| 32                  | –                         | 32                  | –                         | 32                  | –                         | 32                  | GY BU                     |
| 33                  | –                         | 33                  | –                         | 33                  | –                         | 33                  | YE BK                     |
| 34                  | –                         | 34                  | WH BK                     | 34                  | WH BK                     | 34                  | WH BK                     |
| 35                  | –                         | 35                  | BN BK                     | 35                  | BN BK                     | 35                  | BN BK                     |
| 36                  | BK                        | 36                  | BK                        | 36                  | BK                        | 36                  | BK                        |
| 37                  | VT                        | 37                  | VT                        | 37                  | VT                        | 37                  | VT                        |

1) To IEC 757

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



1 Cable connector M20x1.5

| Type           | B1 | H1 | H2 | H3   | L1  | L2 |
|----------------|----|----|----|------|-----|----|
| NEBV-S1W37-... | 54 | 41 | 36 | 11.6 | 142 | 27 |

## Ordering data

|  | Electrical connection | Cable composition [mm <sup>2</sup> ] | Cable Ø [mm] | Cable length [m] | Product weight [g] | Part No.      | Type                          |
|--|-----------------------|--------------------------------------|--------------|------------------|--------------------|---------------|-------------------------------|
| <b>Cable sheath TPE-U (polyurethane)</b> |                       |                                      |              |                  |                    |               |                               |
|  | Socket, 37-pin, Sub-D | 10x0.34                              | 7.7          | 2.5              | 383                | <b>539240</b> | <b>NEBV-S1W37-E-2.5-LE10</b>  |
|  |                       |                                      |              | 5                | 570                | <b>539241</b> | <b>NEBV-S1W37-E-5-LE10</b>    |
|  |                       |                                      |              | 10               | 954                | <b>539242</b> | <b>NEBV-S1W37-E-10-LE10</b>   |
|  |                       | 26x0.34                              | 11.5         | 2.5              | 649                | <b>539243</b> | <b>NEBV-S1W37-E-2.5-LE26</b>  |
|  |                       |                                      |              | 5                | 1101               | <b>539244</b> | <b>NEBV-S1W37-E-5-LE26</b>    |
|  |                       |                                      |              | 10               | 2010               | <b>539245</b> | <b>NEBV-S1W37-E-10-LE26</b>   |
|  |                       | 37x0.34                              | 13           | 2.5              | 820                | <b>539246</b> | <b>NEBV-S1W37-K-2.5-LE37</b>  |
|  |                       |                                      |              | 5                | 1422               | <b>539247</b> | <b>NEBV-S1W37-K-5-LE37</b>    |
|  |                       |                                      |              | 10               | 2619               | <b>539248</b> | <b>NEBV-S1W37-K-10-LE37</b>   |
| <b>Cable sheath PVC</b>                  |                       |                                      |              |                  |                    |               |                               |
|  | Socket, 37-pin, Sub-D | 10x0.34                              | 7.7          | 2.5              | 388                | <b>543271</b> | <b>NEBV-S1W37-KM-2.5-LE10</b> |
|  |                       |                                      |              | 5                | 592                | <b>543272</b> | <b>NEBV-S1W37-KM-5-LE10</b>   |
|  |                       |                                      |              | 10               | 997                | <b>543273</b> | <b>NEBV-S1W37-KM-10-LE10</b>  |
|  |                       | 27x0.34                              | 11.5         | 2.5              | 749                | <b>543274</b> | <b>NEBV-S1W37-KM-2.5-LE27</b> |
|  |                       |                                      |              | 5                | 1285               | <b>543275</b> | <b>NEBV-S1W37-KM-5-LE27</b>   |
|  |                       |                                      |              | 10               | 2371               | <b>543276</b> | <b>NEBV-S1W37-KM-10-LE27</b>  |
|  |                       | 37x0.34                              | 13           | 2.5              | 903                | <b>543277</b> | <b>NEBV-S1W37-KM-2.5-LE37</b> |
|  |                       |                                      |              | 5                | 1610               | <b>543278</b> | <b>NEBV-S1W37-KM-5-LE37</b>   |
|  |                       |                                      |              | 10               | 2955               | <b>543279</b> | <b>NEBV-S1W37-KM-10-LE37</b>  |

# Connecting cables for valve terminals

KVI-CP, for fieldbus connection – Technical data

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## Connecting cable KVI-CP

- Connecting cable for fieldbus connection (CP bus valve terminal CPV, type 03 and CPI installation system)
- Pre-assembled at both ends
- Cable lengths 0.25 m, 0.5 m, 2 m, 5 m or 8 m
- 5-pin
- Round plug



## General technical data

|                                      |                         |
|--------------------------------------|-------------------------|
| Type of mounting                     | M9 union nut            |
| Mounting position                    | Any                     |
| Operating voltage range [V DC]       | 60                      |
| Acceptable current load [A]          | 1.6                     |
| Cable composition [mm <sup>2</sup> ] | 2x0.24, 2x0.34 and 0.49 |
| Cable diameter [mm]                  | 5.5                     |
| Protection class to EN 60529         | IP65/67 (assembled)     |

## Materials

|                     |                                   |
|---------------------|-----------------------------------|
| Housing             | Polyurethane, nickel-plated brass |
| Contacts            | Gold-plated bronze/brass          |
| Cable sheath        | Polyurethane                      |
| Cable sheath colour | Light grey                        |
| Note on materials   | RoHS-compliant                    |

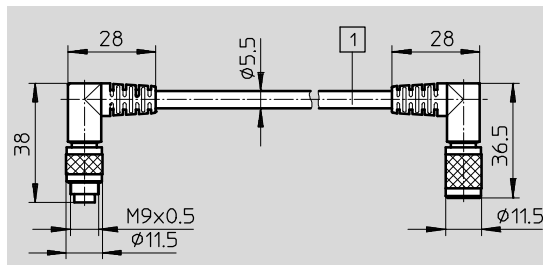
## Operating and environmental conditions

|  |             |
|--|-------------|
| Ambient temperature for flexible cable installation [°C] | -5 ... +80  |
| Ambient temperature [°C]                                 | -20 ... +80 |

## Dimensions

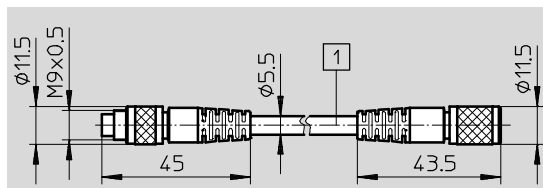
Download CAD data → [www.festo.com](http://www.festo.com)

KVI-CP-3-WSWD-...



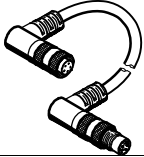

- 1 Cable length 0.25 m, 0.5 m, 2 m, 5 m or 8 m

KVI-CP-3-GSGD-...



- 1 Cable length 2 m, 5 m or 8 m

## Ordering data

|   | Electrical connection           | Weight [g] | Cable length [m] | Part No.      | Type                       |
|---|---------------------------------|------------|------------------|---------------|----------------------------|
|  | Angled plug - angled socket     | 34         | 0.25             | <b>540327</b> | <b>KVI-CP-3-WS-WD-0,25</b> |
|   |                                 | 45         | 0.5              | <b>540328</b> | <b>KVI-CP-3-WS-WD-0,5</b>  |
|   |                                 | 116        | 2                | <b>540329</b> | <b>KVI-CP-3-WS-WD-2</b>    |
|   |                                 | 256        | 5                | <b>540330</b> | <b>KVI-CP-3-WS-WD-5</b>    |
|   |                                 | 399        | 8                | <b>540331</b> | <b>KVI-CP-3-WS-WD-8</b>    |
|  | Straight plug - straight socket | 114        | 2                | <b>540332</b> | <b>KVI-CP-3-GS-GD-2</b>    |
|   |                                 | 255        | 5                | <b>540333</b> | <b>KVI-CP-3-GS-GD-5</b>    |
|   |                                 | 397        | 8                | <b>540334</b> | <b>KVI-CP-3-GS-GD-8</b>    |

# Connecting cables for valve terminals

KVIA, for inputs/outputs – Technical data

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## Connecting cable KVIA


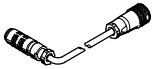
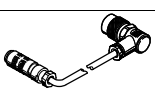
- Plug socket with cable for inputs/ outputs (valve terminal type 03/04, analogue connections)
- Pre-assembled at both ends
- Cable lengths 5 m or 10 m
- 4-pin/5-pin
- Round plug
- Suitable for chain link trunking



## General technical data

| Type                          | KVIA...                          |             |
|-------------------------------|----------------------------------|-------------|
| Type of mounting              | M16/M12 union nut                |             |
| Mounting position             | Any                              |             |
| Operating voltage range       | [V]                              | 250 AC      |
| Current-carrying capacity     | [A]                              | 1           |
| Protection class to EN 60 529 | IP65 (assembled)                 |             |
| Material of housing           | Polybuteneterephthalate          |             |
| Material of contacts          | Silver-plated/gold-plated bronze |             |
| Material of cable sheath      | Polyvinyl chloride               |             |
| Ambient temperature           | [°C]                             | -30 ... +80 |

## Ordering data

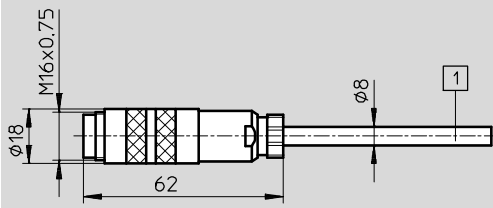
|   | Suitable for chain link trunking | Electrical connection            | Constructional design [mm <sup>2</sup> ] | Cable diameter [mm] | Product weight [g] | Cable length [m] | Type                | Part No.       |
|---|----------------------------------|----------------------------------|--|---------------------|--------------------|------------------|---------------------|----------------|
|  | ■                                | Straight plug                    | 6x0.25                                   | 8                   | 306                | 5                | <b>KVIA-5</b>       | <b>163 960</b> |
|   | ■                                | Straight plug                    | 6x0.25                                   | 8                   | 567                | 10               | <b>KVIA-10</b>      | <b>163 961</b> |
|  | ■                                | Straight plug<br>Straight socket | 4x0.25                                   | 6.2                 | 297                | 5                | <b>KVIA-MPYE-5</b>  | <b>161 984</b> |
|   | ■                                | Straight plug<br>Straight socket | 4x0.25                                   | 6.2                 | 530                | 10               | <b>KVIA-MPYE-10</b> | <b>161 985</b> |
|  | ■                                | Straight plug<br>Angled socket   | 6x0.25                                   | 8                   | 352                | 5                | <b>KVIA-MPPE-5</b>  | <b>163 882</b> |
|   | ■                                | Straight plug<br>Angled socket   | 6x0.25                                   | 8                   | 828                | 10               | <b>KVIA-MPPE-10</b> | <b>163 883</b> |



## Dimensions

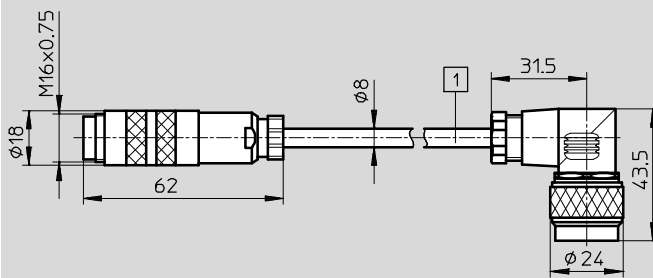
Download CAD data → [www.festo.com](http://www.festo.com)

KVIA-5 and KVIA-10



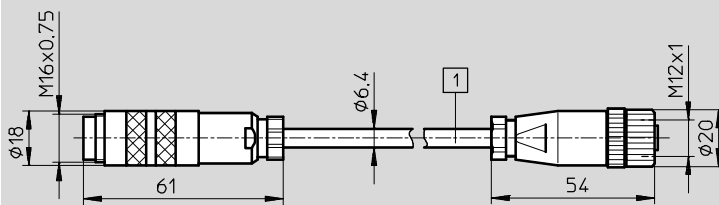
1 Cable length 5 m or 10 m

Type KVIA-MPPE...



1 Cable length 5 m or 10 m

Type KVIA-MPYE...



1 Cable length 5 m or 10 m

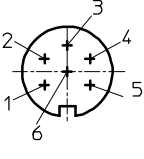
# Connecting cables for valve terminals

KVIA, for inputs/outputs – Technical data

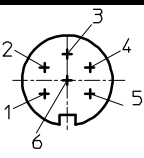
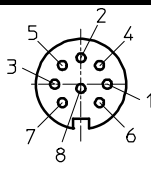
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## Wiring allocation (socket/plug view)

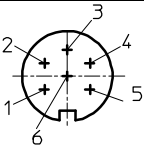
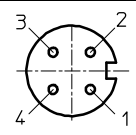
KVIA-5 and KVIA-10

| Plug  | Pin     | Core colour |
|---|---------|-------------|
|  | 1       | Grey        |
|   | 2       | Pink        |
|   | 3       | Green       |
|   | 4       | Yellow      |
|   | 5       | Brown       |
|   | 6       | White       |
|   | Housing | Screen      |

Type KVIA-MPPE-...

| Plug  | Pin     | Core colour | Pin | Socket  |
|---|---------|-------------|-----|---|
|  | 1       | Grey        | 6   |  |
|   | 2       | Pink        | 8   |   |
|   | 3       | Green       | 4   |   |
|   | 4       | Yellow      | 2   |   |
|   | 5       | Brown       | 7   |   |
|   | 6       | White       | 3   |   |
|   | Housing | Screen      | -   |   |

Type KVIA-MPPE-...

| Plug  | Pin     | Core colour | Pin | Socket  |
|---|---------|-------------|-----|---|
|  | 1       | -           | -   |  |
|   | 2       | -           | -   |   |
|   | 3       | Green       | 3   |   |
|   | 4       | Yellow      | 4   |   |
|   | 5       | Brown       | 1   |   |
|   | 6       | White       | 2   |   |
|   | Housing | Screen      | -   |   |

5

**Connecting cable**  
**VMPA-KMS**

- Plug socket with cable for multi-pin connection (to valve terminal type 32 MPA)
- Pre-assembled
- Cable lengths 2.5 m, 5 m or 10 m
- For 8 or 24 solenoid coils
- Sub-D
- VMPA-KMS2 as a design suitable for chain link trunking



**General technical data**

| Type  | VMPA...                         |
|---|---------------------------------|
| Type of mounting  | 3 M3x22 screws                  |
| Mounting position                                       | Any                             |
| Operating voltage range [V DC]                          | 24                              |
| Current-carrying capacity [A]                           | 3                               |
| Protection class to EN 60 529                           | IP65 (assembled)                |
| Material of housing                                     | Fibreglass reinforced polyamide |
| Material of contacts                                    | Gold-plated copper base alloy   |
| Material of seal  | Polyurethane                    |
| Ambient temperature [°C]                                | -30 ... +80                     |
| Ambient temperature of flexible cable installation [°C] | -5 ... +70                      |

**Ordering data**

|  | Electrical connection | Cable composition [mm <sup>2</sup> ] | Material of cable sheath | Cable diameter [mm] | Cable length [m] | Type                        | Part No.       |
|--|-----------------------|--------------------------------------|--------------------------|---------------------|------------------|-----------------------------|----------------|
|  | 25-pin Sub-D socket   | 10x0.34                              | Polyvinyl chloride       | 6.9                 | 2.5              | <b>VMPA-KMS1-8-2,5</b>      | <b>533 195</b> |
|  |                       | 10x0.34                              | Polyvinyl chloride       | 6.9                 | 5                | <b>VMPA-KMS1-8-5</b>        | <b>533 196</b> |
|  |                       | 10x0.34                              | Polyvinyl chloride       | 6.9                 | 10               | <b>VMPA-KMS1-8-10</b>       | <b>533 197</b> |
|  |                       | 25x0.34                              | Polyvinyl chloride       | 11.4                | 2.5              | <b>VMPA-KMS1-24-2,5</b>     | <b>533 192</b> |
|  |                       | 25x0.34                              | Polyvinyl chloride       | 11.4                | 5                | <b>VMPA-KMS1-24-5</b>       | <b>533 193</b> |
|  |                       | 25x0.34                              | Polyvinyl chloride       | 11.4                | 10               | <b>VMPA-KMS1-24-10</b>      | <b>533 194</b> |
|  | 25-pin Sub-D socket   | 10x0.25                              | Polyurethane             | 7.7                 | 2.5              | <b>VMPA-KMS2-8-2,5-PUR</b>  | <b>533 504</b> |
|  |                       | 10x0.25                              | Polyurethane             | 7.7                 | 5                | <b>VMPA-KMS2-8-5-PUR</b>    | <b>533 505</b> |
|  |                       | 10x0.25                              | Polyurethane             | 7.7                 | 10               | <b>VMPA-KMS2-8-10-PUR</b>   | <b>533 506</b> |
|  |                       | 25x0.25                              | Polyurethane             | 10.8                | 2.5              | <b>VMPA-KMS2-24-2,5-PUR</b> | <b>533 501</b> |
|  |                       | 25x0.25                              | Polyurethane             | 10.8                | 5                | <b>VMPA-KMS2-24-5-PUR</b>   | <b>533 502</b> |
|  |                       | 25x0.25                              | Polyurethane             | 10.8                | 10               | <b>VMPA-KMS2-24-10-PUR</b>  | <b>533 503</b> |

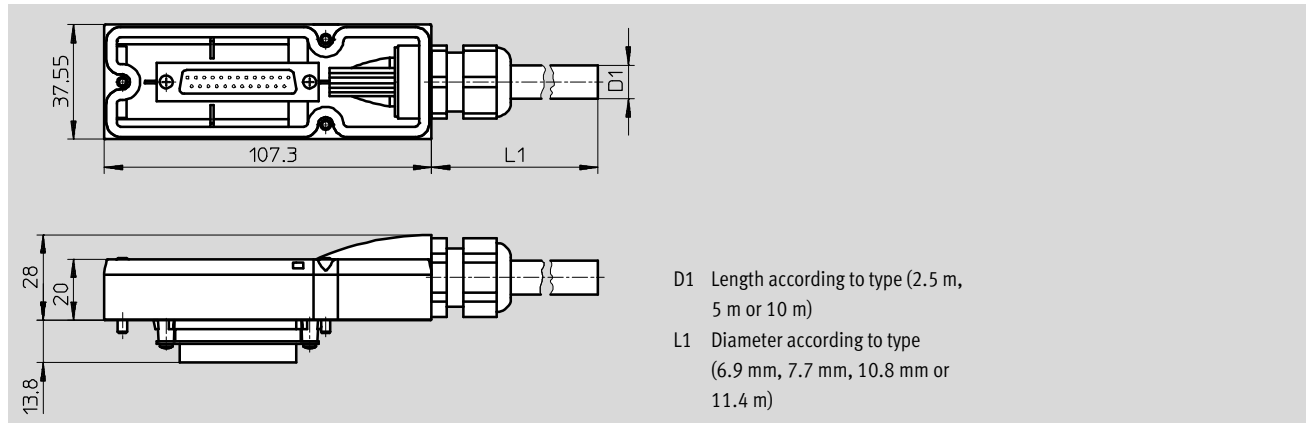
# Connecting cables for valve terminals

VMPA-KMS, for multi-pin plug connection – Technical data

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

VMPA-...



## Wiring allocation (socket view)

VMPA-KMS...-24-...

|  | Pin | Core colour  | Pin | Core colour  |
|--|-----|--------------|-----|--------------|
|  | 1   | White        | 14  | Yellow-brown |
|  | 2   | Green        | 15  | White-grey   |
|  | 3   | Yellow       | 16  | Grey-brown   |
|  | 4   | Grey         | 17  | White-pink   |
|  | 5   | Pink         | 18  | Pink-brown   |
|  | 6   | Blue         | 19  | White-blue   |
|  | 7   | Red          | 20  | Brown-blue   |
|  | 8   | Purple       | 21  | White-red    |
|  | 9   | Grey-pink    | 22  | Brown-red    |
|  | 10  | Red-blue     | 23  | White-black  |
|  | 11  | White-green  | 24  | Brown        |
|  | 12  | Brown-green  | 25  | Black        |
|  | 13  | White-yellow |     |              |

## Pin allocation for electrical multi-pin plug connection – Sub-D plug, 9-pin

|  | Pin | Address/coil | Pin | Address/coil      |   |
|--|-----|--------------|-----|-------------------|---|
|  | 1   | 0            | 6   | 5                 | Note<br>The drawing shows the view onto the pins of the Sub-D plug. |
|  | 2   | 1            | 7   | 6                 |   |
|  | 3   | 2            | 8   | 7                 |   |
|  | 4   | 3            | 9   | 0 V <sup>1)</sup> |   |
|  | 5   | 4            |     |                   |   |

1) 0 V for positive switching control signals; connect 24 V for negative switching control signals; mixed operation is not permitted.

## Pin allocation for electrical multi-pin plug connection – Sub-D plug, 25-pin, connecting cable VMPAL-KM

|  | Pin | Address/coil | Connecting cable wire colour <sup>2)</sup> | Pin | Address/coil      | Connecting cable wire colour <sup>2)</sup> |   |
|--|-----|--------------|--|-----|-------------------|--|---|
|  | 1   | 0            | WH   | 14  | 13                | BN YE                                      | Note<br>The drawing shows the view onto the pins of the Sub-D plug. |
|  | 2   | 1            | GN   | 15  | 14                | GY WH                                      |   |
|  | 3   | 2            | YE   | 16  | 15                | BN GY                                      |   |
|  | 4   | 3            | GY   | 17  | 16                | WH PK                                      |   |
|  | 5   | 4            | PK   | 18  | 17                | BN PK                                      |   |
|  | 6   | 5            | BU   | 19  | 18                | BU WH                                      |   |
|  | 7   | 6            | RD   | 20  | 19                | BN BU                                      |   |
|  | 8   | 7            | VT   | 21  | 20                | RD WH                                      |   |
|  | 9   | 8            | GY PK                                      | 22  | 21                | BN RD                                      |   |
|  | 10  | 9            | RD BU                                      | 23  | 22                | BK WH                                      |   |
|  | 11  | 10           | GN WH                                      | 24  | 23                | BN   |   |
|  | 12  | 11           | BN GN                                      | 25  | 0 V <sup>1)</sup> | BK   |   |
|  | 13  | 12           | YE WH                                      |     |                   |  |   |

1) 0 V for positive switching control signals; connect 24 V for negative switching control signals; mixed operation is not permitted.

2) To IEC 757

## Pin allocation for electrical multi-pin plug connection – Sub-D plug, 44-pin, connecting cable VMPAL-KM

|  | Pin | Address/coil | Connecting cable wire colour <sup>2)</sup> | Pin | Address/coil | Connecting cable wire colour <sup>2)</sup> | Pin | Address/coil      | Connecting cable wire colour <sup>2)</sup> |   |
|--|-----|--------------|--|-----|--------------|--|-----|-------------------|--|---|
|  | 1   | 0            | WH   | 18  | 17           | BN PK                                      | 35  | n.c.              | n.c.                                       | Note<br>The drawing shows the view onto the pins of the Sub-D plug. |
|  | 2   | 1            | GN   | 19  | 18           | BU WH                                      | 36  | n.c.              | n.c.                                       |   |
|  | 3   | 2            | YE   | 20  | 19           | BN BU                                      | 37  | n.c.              | n.c.                                       |   |
|  | 4   | 3            | GY   | 21  | 20           | RD WH                                      | 38  | n.c.              | n.c.                                       |   |
|  | 5   | 4            | PK   | 22  | 21           | BN RD                                      | 39  | n.c.              | n.c.                                       |   |
|  | 6   | 5            | BU   | 23  | 22           | BK WH                                      | 40  | n.c.              | n.c.                                       |   |
|  | 7   | 6            | RD   | 24  | 23           | BN   | 41  | 0 V <sup>1)</sup> | RD YE                                      |   |
|  | 8   | 7            | VT   | 25  | 24           | BK BN                                      | 42  | 0 V <sup>1)</sup> | BK GN                                      |   |
|  | 9   | 8            | GY PK                                      | 26  | 25           | GN GY                                      | 43  | 0 V <sup>1)</sup> | BK YE                                      |   |
|  | 10  | 9            | RD BU                                      | 27  | 26           | YE GY                                      | 44  | 0 V <sup>1)</sup> | BK   |   |
|  | 11  | 10           | GN WH                                      | 28  | 27           | GN PK                                      |     |                   |  |   |
|  | 12  | 11           | BN GN                                      | 29  | 28           | YE PK                                      |     |                   |  |   |
|  | 13  | 12           | YE WH                                      | 30  | 29           | GN BU                                      |     |                   |  |   |
|  | 14  | 13           | BN YE                                      | 31  | 30           | YE BU                                      |     |                   |  |   |
|  | 15  | 14           | GY WH                                      | 32  | 31           | RD GN                                      |     |                   |  |   |
|  | 16  | 15           | BN GY                                      | 33  | n.c.         | n.c.                                       |     |                   |  |   |
|  | 17  | 16           | WH PK                                      | 34  | n.c.         | n.c.                                       |     |                   |  |   |

1) 0 V for positive switching control signals; connect 24 V for negative switching control signals; mixed operation is not permitted.

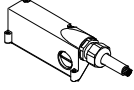

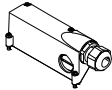
2) To IEC 757

# Connecting cables for valve terminals

VMPAL-KM, for Valve terminals MPA-L – Technical data

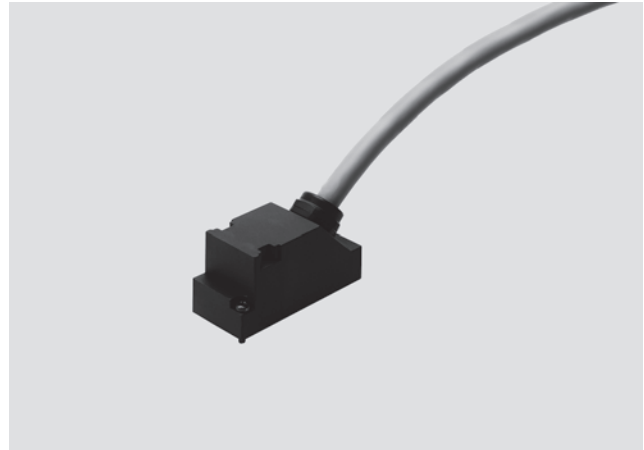
FESTO

## Electrical multi-pin connection – Ordering data

| Designation  | Code                 | Description   | Connection | Cable length | Part No.      | Type                              |
|--|----------------------|---|------------|--------------|---------------|-----------------------------------|
| <b>Connecting cable for multi-pin plug connection with Sub-D plug socket</b>               |                      |   |            |              |               |                                   |
|           | Connecting cable: CA | Cable outlet to front<br>(only with electrical connection<br>code: MS6)         | 25-pin     | 2.5 m        | <b>560416</b> | <b>VMPAL-KM-V-SD25-IP67-2,5</b>   |
|  | Connecting cable: CB |   |            | 5 m          | <b>560417</b> | <b>VMPAL-KM-V-SD25-IP67-5</b>     |
|  | Connecting cable: CC |   |            | 10 m         | <b>560418</b> | <b>VMPAL-KM-V-SD25-IP67-10</b>    |
|  | Connecting cable: –  |   |            | Any          | <b>562389</b> | <b>VMPAL-KM-V-SD25-IP67-X</b>     |
|  | Connecting cable: CQ | Cable outlet to front<br>(only with electrical connection<br>code: MS6)         | 25-pin     | 2.5 m        | <b>560410</b> | <b>VMPAL-KMSK-V-SD25-IP67-2,5</b> |
|  | Connecting cable: CR |   |            | 5 m          | <b>560411</b> | <b>VMPAL-KMSK-V-SD25-IP67-5</b>   |
|  | Connecting cable: CS |   |            | 10 m         | <b>560412</b> | <b>VMPAL-KMSK-V-SD25-IP67-10</b>  |
|  | Connecting cable: –  |   |            | Any          | <b>562391</b> | <b>VMPAL-KMSK-V-SD25-IP67-X</b>   |
|  | Connecting cable: CJ | Cable outlet to front<br>(only with electrical connection<br>code: MS8)         | 44-pin     | 2.5 m        | <b>560422</b> | <b>VMPAL-KM-V-SD44-IP67-2,5</b>   |
|  | Connecting cable: CK |   |            | 5 m          | <b>560423</b> | <b>VMPAL-KM-V-SD44-IP67-5</b>     |
|  | Connecting cable: CL |   |            | 10 m         | <b>560424</b> | <b>VMPAL-KM-V-SD44-IP67-10</b>    |
|  | Connecting cable: –  |   |            | Any          | <b>562390</b> | <b>VMPAL-KM-V-SD44-IP67-X</b>     |
|           | Connecting cable: CD | Cable outlet to side<br>(only with electrical connection<br>code: MS6)          | 25-pin     | 2.5 m        | <b>560419</b> | <b>VMPAL-KM-S-SD25-IP67-2,5</b>   |
|  | Connecting cable: CE |   |            | 5 m          | <b>560420</b> | <b>VMPAL-KM-S-SD25-IP67-5</b>     |
|  | Connecting cable: CH |   |            | 10 m         | <b>560421</b> | <b>VMPAL-KM-S-SD25-IP67-10</b>    |
|  | Connecting cable: –  |   |            | Any          | <b>562392</b> | <b>VMPAL-KM-S-SD25-IP67-X</b>     |
|  | Connecting cable: CT | Cable outlet to side<br>(only with electrical connection<br>code: MS6)          | 25-pin     | 2.5 m        | <b>560413</b> | <b>VMPAL-KMSK-S-SD25-IP67-2,5</b> |
|  | Connecting cable: CU |   |            | 5 m          | <b>560414</b> | <b>VMPAL-KMSK-S-SD25-IP67-5</b>   |
|  | Connecting cable: CV |   |            | 10 m         | <b>560415</b> | <b>VMPAL-KMSK-S-SD25-IP67-10</b>  |
|  | Connecting cable: –  |   |            | Any          | <b>562394</b> | <b>VMPAL-KMSK-S-SD25-IP67-X</b>   |
|  | Connecting cable: CM | Cable outlet to side<br>(only with electrical connection<br>code: MS8)          | 44-pin     | 2.5 m        | <b>560425</b> | <b>VMPAL-KM-S-SD44-IP67-2,5</b>   |
|  | Connecting cable: CN |   |            | 5 m          | <b>560426</b> | <b>VMPAL-KM-S-SD44-IP67-5</b>     |
|  | Connecting cable: CP |   |            | 10 m         | <b>560427</b> | <b>VMPAL-KM-S-SD44-IP67-10</b>    |
|  | Connecting cable: –  |   |            | Any          | <b>562393</b> | <b>VMPAL-KM-S-SD44-IP67-X</b>     |
| <b>Cover for multi-pin plug connection without connecting cable with Sub-D plug socket</b> |                      |   |            |              |               |                                   |
|         | Connecting cable: EZ | Cable outlet to side or front<br>(only with electrical connection<br>code: MS6) | 25-pin     | –            | <b>560428</b> | <b>VMPAL-KM-SD25-IP67-0</b>       |
|  | Connecting cable: EY |   |            |              |               |                                   |

**Connecting cable  
KEA-1-25P**

- Plug socket with cable for multi-pin connection
- Pre-assembled
- Cable lengths of 5 m, 10 m or by customer request
- 25-pin
- Sub-D



## General technical data

| Type   |      | KEA-1-25P...                  |
|--|------|-------------------------------|
| Type of mounting                                   |      | 2 M3x16 screws                |
| Mounting position                                  |      | Any                           |
| Electrical connection                              |      | 25-pin Sub-D socket           |
| Operating voltage range                            | [V]  | 250 AC                        |
|  | [V]  | 250 DC                        |
| Current-carrying capacity                          | [A]  | 4                             |
| Cable diameter                                     | [mm] | 12                            |
| Protection class to EN 60 529                      |      | IP65 (assembled)              |
| Material of housing                                |      | Polyamide (Schulamid, 6GB30)  |
| Material of contacts                               |      | Gold-plated copper base alloy |
| Material of cable sheath                           |      | Polyvinyl chloride            |
| Ambient temperature                                | [°C] | -20 ... +80                   |
| Ambient temperature of flexible cable installation | [°C] | -5 ... +70                    |

## Ordering data

|  | Cable composition<br>[mm <sup>2</sup> ] | Product weight |                | Cable length<br>[m] | Type                | Part No.       |
|--|---|----------------|----------------|---------------------|---------------------|----------------|
|  |   | Cable<br>[g/m] | Total<br>[g]   |                     |                     |                |
|  | 25x0.34                                 |                | 1092           | 5                   | <b>KEA-1-25P-5</b>  | <b>177 413</b> |
|  | 25x0.34                                 |                | 2040           | 10                  | <b>KEA-1-25P-10</b> | <b>177 414</b> |
|  | 25x0.34                                 | Approx. 190    | Acc. to length | Any                 | <b>KEA-1-25P-X</b>  | <b>177 415</b> |

# Connecting cables for valve terminals

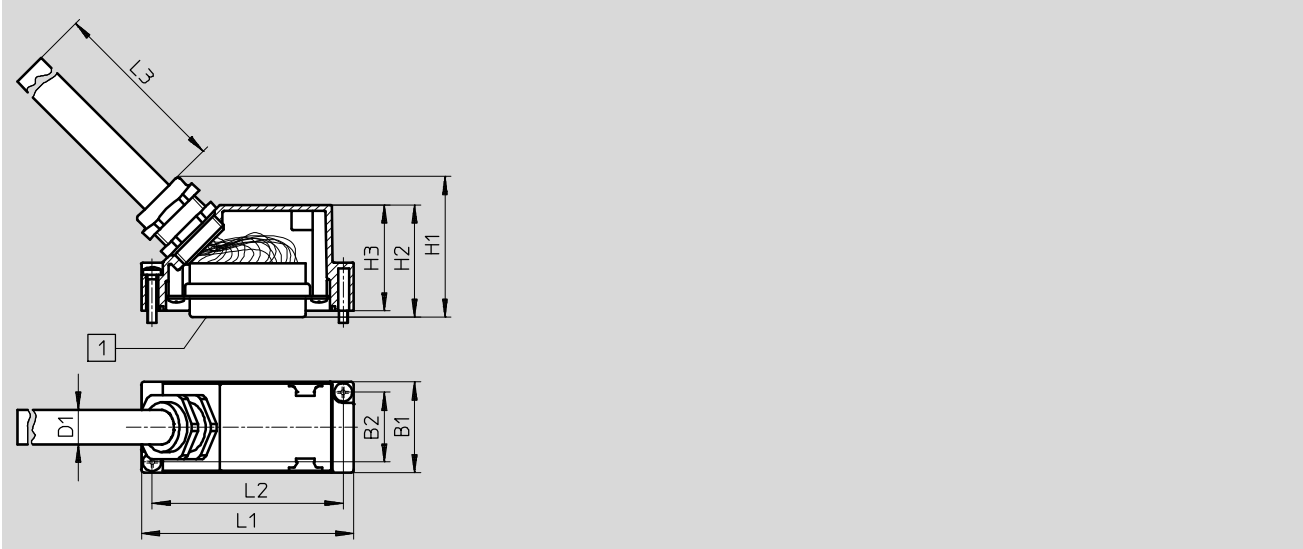
KEA-1-25P, for multi-pin plug connection – Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

KEA-1-25P-...



| Type          | 1                   | B1 | B2 | D1 | H1 | H2 | H3 | L1 | L2 | L                                      |
|---------------|---------------------|----|----|----|----|----|----|----|----|--|
| KEA-1-25P-... | 25-pin Sub-D socket | 30 | 23 | 12 | 47 | 37 | 35 | 70 | 63 | Length according to type (5 m or 10 m) |

5

## Wiring allocation (socket view)

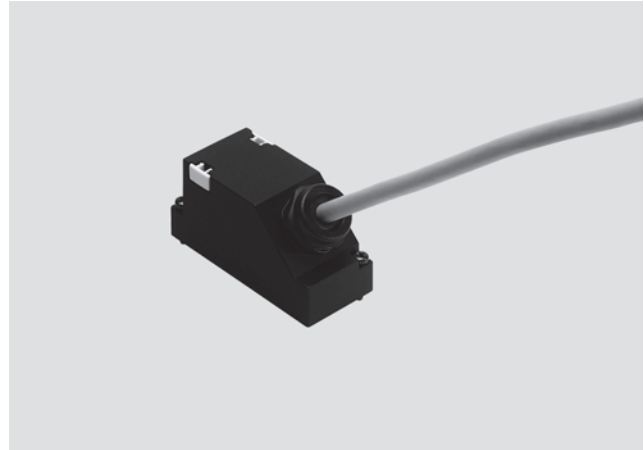
KEA-1-25P-...

|  | Pin | Core colour  |
|--|-----|--------------|
|  | 1   | White        |
|  | 2   | Green        |
|  | 3   | Yellow       |
|  | 4   | Grey         |
|  | 5   | Pink         |
|  | 6   | Blue         |
|  | 7   | Red          |
|  | 8   | Purple       |
|  | 9   | Grey-pink    |
|  | 10  | Red-blue     |
|  | 11  | White-green  |
|  | 12  | Brown-green  |
|  | 13  | White-yellow |
|  | 14  | Yellow-brown |
|  | 15  | White-grey   |
|  | 16  | Grey-brown   |
|  | 17  | White-pink   |
|  | 18  | Pink-brown   |
|  | 19  | White-blue   |
|  | 20  | Brown-blue   |
|  | 21  | White-red    |
|  | 22  | Brown-red    |
|  | 23  | White-black  |
|  | 24  | Brown        |
|  | 25  | Black        |



**Connecting cable  
KMP3**

- Plug socket with cable for multi-pin connection
- Pre-assembled
- Cable lengths of 5 m or 10 m
- 9-pin or 25-pin
- Sub-D



**General technical data**

| Type   | KMP3-9P...                    | KMP3-25P...         |
|--|-------------------------------|---------------------|
| Type of mounting                                   | 2 M3x16 screws                |                     |
| Mounting position                                  | Any                           |                     |
| Electrical connection                              | 9-pin Sub-D socket            | 25-pin Sub-D socket |
| Nominal operating voltage                          | [V DC] 24                     |                     |
| Current-carrying capacity                          | [A] 3                         |                     |
| Cable diameter                                     | [mm] 9.5                      | 12                  |
| Protection class to EN 60 529                      | IP65 (assembled)              |                     |
| Material of housing                                | Polyamide (Schulamid, 6GB30)  |                     |
| Material of contacts                               | Gold-plated copper base alloy |                     |
| Material of cable sheath                           | Polyvinyl chloride            |                     |
| Material of seal                                   | Nitrile rubber (NBR)          |                     |
| Ambient temperature                                | [°C] -30 ... +80              |                     |
| Ambient temperature of flexible cable installation | [°C] -5 ... +80               |                     |

**Ordering data**

|  | Cable composition<br>[mm <sup>2</sup> ] | Product weight |                | Cable length<br>[m] | Type                  | Part No.       |
|--|---|----------------|----------------|---------------------|-----------------------|----------------|
|  |   | Cable<br>[g/m] | Total<br>[g]   |                     |                       |                |
|  | 10x0.34                                 |                | 425            | 5                   | <b>KMP3-9P-08-5</b>   | <b>18 698</b>  |
|  | 10x0.34                                 |                | 814            | 10                  | <b>KMP3-9P-08-10</b>  | <b>18 579</b>  |
|  | 10x0.34                                 | Approx. 117    | Acc. to length | Any                 | <b>KMP3-9P-08-X</b>   | <b>18 697</b>  |
|  | 18x0.34                                 |                | 672            | 5                   | <b>KMP3-25P-16-5</b>  | <b>18 624</b>  |
|  | 18x0.34                                 |                | 1,303          | 10                  | <b>KMP3-25P-16-10</b> | <b>18 625</b>  |
|  | 18x0.34                                 | Approx. 180    | Acc. to length | Any                 | <b>KMP3-25P-16-X</b>  | <b>18 699</b>  |
|  | 24x0.25                                 | Approx. 178    | Acc. to length | Any                 | <b>KMP3-25P-22-X</b>  | <b>163 971</b> |

# Connecting cables for valve terminals

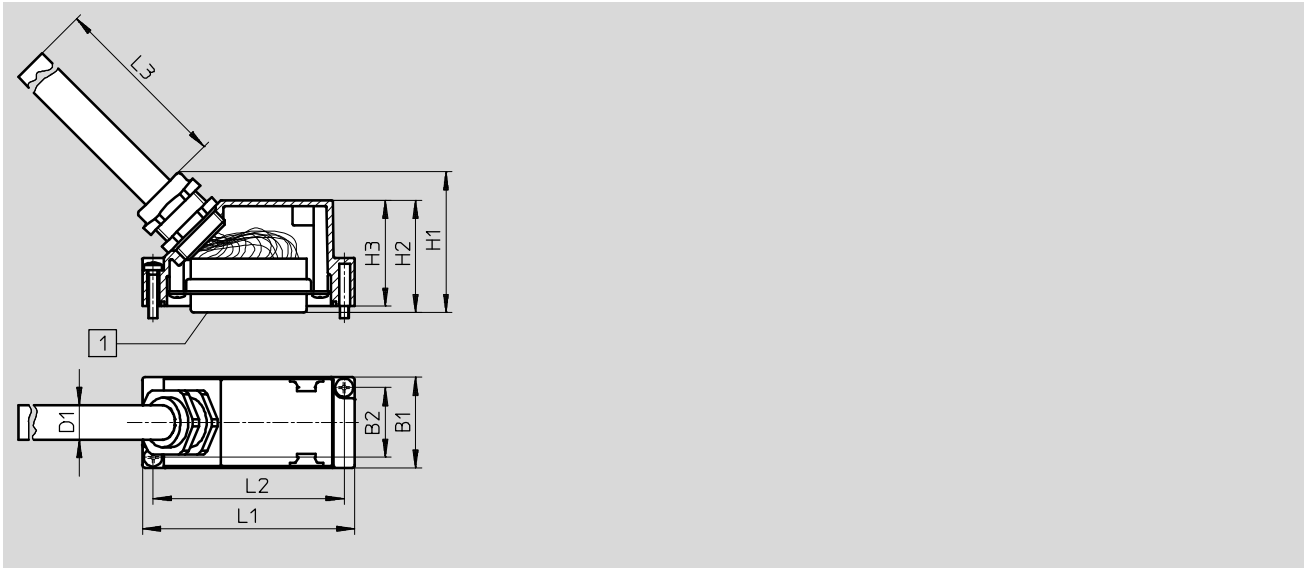
KMP3, for multi-pin plug connection – Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

KMP3-...



| Type         | 1                   | B1 | B2 | D1   | H1 | H2 | H3 | L1 | L2 | L3  |
|--------------|---------------------|----|----|------|----|----|----|----|----|---|
| KMP3-09P-... | 9-pin Sub-D socket  | 30 | 23 | 8.3  | 43 | 37 | 35 | 50 | 43 | Length according to type (5 m, 10 m or any) |
| KMP3-25P-... | 25-pin Sub-D socket | 30 | 23 | 11.2 | 47 | 37 | 35 | 70 | 63 |   |

5

## Wiring allocation (socket view)

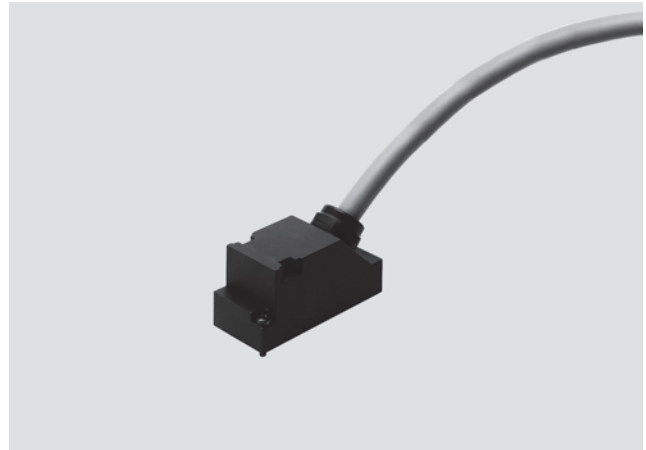
KMP3-9P-...

|  | Pin | Core colour | Pin | Core colour |
|--|-----|-------------|-----|-------------|
|  | 1   | White       | 6   | Blue        |
|  | 2   | Green       | 7   | Red         |
|  | 3   | Yellow      | 8   | Purple      |
|  | 4   | Grey        | 9   | Black       |
|  | 5   | Pink        | –   | Brown       |

|  | KMP3-25P-16-... |              |     |              | KMP3-25P-22-... |              |     |              |
|--|-----------------|--------------|-----|--------------|-----------------|--------------|-----|--------------|
|  | Pin             | Core colour  | Pin | Core colour  | Pin             | Core colour  | Pin | Core colour  |
|  | 1               | White        | 14  | Yellow-brown | 1               | White        | 14  | Yellow-brown |
|  | 2               | Green        | 15  | White-grey   | 2               | Green        | 15  | White-grey   |
|  | 3               | Yellow       | 16  | Grey-brown   | 3               | Yellow       | 16  | Grey-brown   |
|  | 4               | Grey         | 17  | –            | 4               | Grey         | 17  | White-pink   |
|  | 5               | Pink         | 18  | –            | 5               | Pink         | 18  | Pink-brown   |
|  | 6               | Blue         | 19  | –            | 6               | Blue         | 19  | White-blue   |
|  | 7               | Red          | 20  | –            | 7               | Red          | 20  | Brown-blue   |
|  | 8               | Purple       | 21  | –            | 8               | Purple       | 21  | White-red    |
|  | 9               | Grey-pink    | 22  | –            | 9               | Grey-pink    | 22  | Brown-red    |
|  | 10              | Red-blue     | 23  | –            | 10              | Red-blue     | 23  | –            |
|  | 11              | White-green  | 24  | Brown        | 11              | White-green  | 24  | Brown        |
|  | 12              | Brown-green  | 25  | Black        | 12              | Brown-green  | 25  | Black        |
|  | 13              | White-yellow | –   | –            | 13              | White-yellow | –   | –            |

## Connecting cable KMP4

- Plug socket with cable for multi-pin connection
- Pre-assembled
- Cable lengths of 5 m or 10 m
- 9-pin or 25-pin
- Sub-D
- Suitable for chain link trunking



## General technical data

| Type   | KMP4-9P-...                   | KMP4-25P-...        |
|--|-------------------------------|---------------------|
| Type of mounting                                   | 2 M3x16 screws                |                     |
| Mounting position                                  | Any                           |                     |
| Electrical connection                              | 9-pin Sub-D socket            | 25-pin Sub-D socket |
| Nominal operating voltage                          | [V DC] 24                     |                     |
| Current-carrying capacity                          | [A] 3                         |                     |
| Cable composition                                  | [mm <sup>2</sup> ] 10x0.25    | 25x0.25             |
| Protection class to EN 60 529                      | IP65 (assembled)              |                     |
| Material of housing                                | Polyamide (Schulamid, 6GB30)  |                     |
| Material of contacts                               | Gold-plated copper base alloy |                     |
| Material of seal                                   | Nitrile rubber (NBR)          |                     |
| Ambient temperature                                | [°C] -40 ... +70              |                     |
| Ambient temperature of flexible cable installation | [°C] -5 ... +70               |                     |

## Ordering data

|  | Material of cable sheath | Product weight<br>[g] | Cable diameter<br>[mm] | Cable length<br>[m] | Type            | Part No. |
|--|--------------------------|-----------------------|------------------------|---------------------|-----------------|----------|
|  | Polyurethane             | 330                   | 7.7                    | 5                   | KMP4-9P-5-PUR   | 193 014  |
|  | Polyvinyl chloride       | 426                   | 7.7                    | 5                   | KMP4-9P-5-PVC   | 193 012  |
|  | Polyurethane             | 675                   | 8.3                    | 10                  | KMP4-9P-10-PUR  | 193 015  |
|  | Polyvinyl chloride       | 792                   | 8.3                    | 10                  | KMP4-9P-10-PVC  | 193 013  |
|  | Polyurethane             | 732                   | 10.8                   | 5                   | KMP4-25P-5-PUR  | 193 018  |
|  | Polyvinyl chloride       | 854                   | 10.8                   | 5                   | KMP4-25P-5-PVC  | 193 016  |
|  | Polyurethane             | 1411                  | 11.2                   | 10                  | KMP4-25P-10-PUR | 193 019  |
|  | Polyvinyl chloride       | 1617                  | 11.2                   | 10                  | KMP4-25P-10-PVC | 193 017  |

# Connecting cables for valve terminals

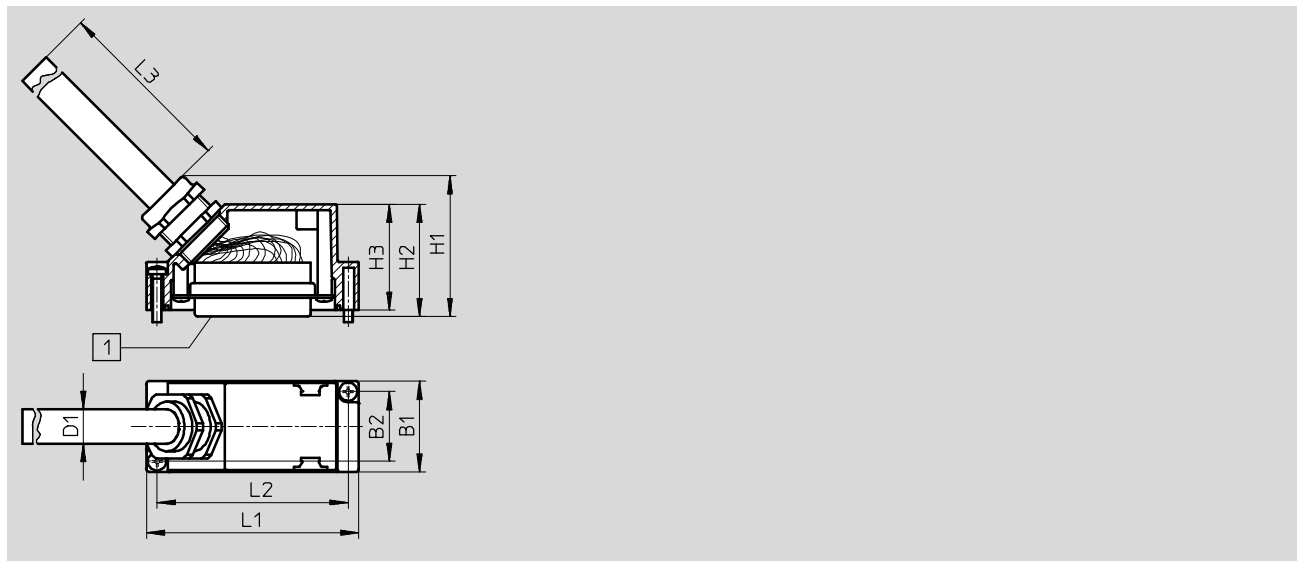
KMP4, for multi-pin plug connection – Technical data

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## Dimensions

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KMP4-...



| Type             | 1                   | B1 | B2 | D1   | H1 | H2 | H3 | L1 | L2 | L3                                     |
|------------------|---------------------|----|----|------|----|----|----|----|----|--|
| KMP4-09P-...-PVC | 9-pin Sub-D socket  | 30 | 23 | 8.3  | 43 | 37 | 35 | 50 | 43 | Length according to type (5 m or 10 m) |
| KMP4-09P-...-PUR | 9-pin Sub-D socket  | 30 | 23 | 7.7  | 43 | 37 | 35 | 50 | 43 |  |
| KMP4-25P-...-PVC | 25-pin Sub-D socket | 30 | 23 | 11.2 | 47 | 37 | 35 | 70 | 63 |  |
| KMP4-25P-...-PUR | 25-pin Sub-D socket | 30 | 23 | 10.8 | 47 | 37 | 35 | 70 | 63 |  |

5

## Wiring allocation (socket view)

KMP4-9P-...

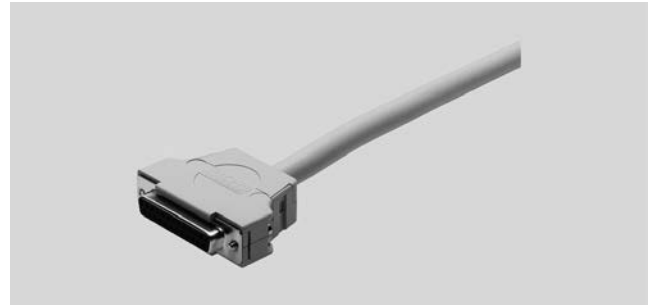
|  | Pin | Core colour | Pin | Core colour |
|--|-----|-------------|-----|-------------|
|  | 1   | White       | 6   | Blue        |
|  | 2   | Green       | 7   | Red         |
|  | 3   | Yellow      | 8   | Purple      |
|  | 4   | Grey        | 9   | Black       |
|  | 5   | Pink        | -   | Brown       |

KMP4-25P-...

|  | Pin | Core colour  | Pin | Core colour  |
|--|-----|--------------|-----|--------------|
|  | 1   | White        | 14  | Yellow-brown |
|  | 2   | Green        | 15  | White-grey   |
|  | 3   | Yellow       | 16  | Grey-brown   |
|  | 4   | Grey         | 17  | White-pink   |
|  | 5   | Pink         | 18  | Pink-brown   |
|  | 6   | Blue         | 19  | White-blue   |
|  | 7   | Red          | 20  | Brown-blue   |
|  | 8   | Purple       | 21  | White-red    |
|  | 9   | Grey-pink    | 22  | Brown-red    |
|  | 10  | Red-blue     | 23  | White-black  |
|  | 11  | White-green  | 24  | Brown        |
|  | 12  | Brown-green  | 25  | Black        |
|  | 13  | White-yellow |     |              |

## Connecting cable KMP6

- Connecting cable for multi-pin plug connection
- Pre-assembled
- Cable lengths 2.5 m, 5 m or 10 m
- 9-pin, 15-pin, 25-pin or 26-pin
- Sub-D



## General technical data

| Type                                 | KMP6-9P-8-...                     | KMP6-15P-12-...                    | KMP6-25P-12-...                    | KMP6-25P-20-...                    | KMP6-26P-16-...                    |
|--------------------------------------|-----------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Electrical connection                | Straight socket<br>Sub-D<br>9-pin | Straight socket<br>Sub-D<br>15-pin | Straight socket<br>Sub-D<br>25-pin | Straight socket<br>Sub-D<br>25-pin | Straight socket<br>Sub-D<br>26-pin |
|                                      | Open cable end<br>9-wire          | Open cable end<br>15-wire          | Open cable end<br>15-wire          | Open cable end<br>25-wire          | Open cable end<br>20-wire          |
| Type of mounting                     | Via through-hole                  |                                    |                                    |                                    |                                    |
| Mounting position                    | Any                               |                                    |                                    |                                    |                                    |
| Operating voltage range [V DC]       | 0 ... 24                          |                                    |                                    |                                    |                                    |
| Acceptable current load [A]          | 2.8                               | 2.8                                | 2.8                                | 2.8                                | 2.5                                |
| Cable composition [mm <sup>2</sup> ] | 8x0.34                            | 15x0.34                            | 15x0.34                            | 20x0.25                            | 20x0.25                            |
|                                      | 1x0.5                             | –                                  | –                                  | 5x0.34                             | –                                  |
| Cable diameter [mm]                  | 7.6                               | 8.5                                | 8.5                                | 10.3                               | 8.6                                |
| Degree of protection to EN 60529     | IP40 (assembled)                  |                                    |                                    |                                    |                                    |

## Materials

|              |                          |
|--------------|--------------------------|
| Housing      | PBT reinforced           |
| Pin contacts | Gold-plated copper alloy |
| Cable sheath | PVC                      |

## Operating and environmental conditions

|   |             |
|---|-------------|
| Ambient temperature [°C]                                  | –30 ... +80 |
| Ambient temperature with flexible cable installation [°C] | –5 ... +80  |

# Connecting cables for valve terminals

KMP6, Sub-D – Technical data

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## Circuitry (socket view)

| KMP6-9P-8-...   |     | KMP6-15P-12-...           |    |                     |                           |
|-----------------|-----|---------------------------|----|---------------------|---------------------------|
|                 | Pin | Wire colour <sup>1)</sup> |    | Pin                 | Wire colour <sup>1)</sup> |
|                 | 1   | WH                        |    | 12                  | RD BU                     |
|                 | 2   | BN                        |    | 13                  | WH GN                     |
|                 | 3   | GN                        |    | 14                  | BN GN                     |
|                 | 4   | YE                        |    | 15                  | WH YE                     |
|                 | 5   | GY                        |    |                     |                           |
|                 | 6   | PK                        |    |                     |                           |
|                 | 7   | BU                        |    |                     |                           |
|                 | 8   | RD                        |    |                     |                           |
|                 | 9   | BK <sup>2)</sup>          |    |                     |                           |
| KMP6-25P-12-... |     | KMP6-25P-20-...           |    |                     |                           |
|                 | Pin | Wire colour <sup>1)</sup> |    | Pin                 | Wire colour <sup>1)</sup> |
|                 | 1   | WH                        | 18 | -                   |                           |
|                 | 2   | BN                        | 19 | -                   |                           |
|                 | 3   | GN                        | 20 | -                   |                           |
|                 | 4   | YE                        | 21 | -                   |                           |
|                 | 5   | GY                        | 22 | -                   |                           |
|                 | 6   | PK                        | 23 | WH GN               |                           |
|                 | 7   | BU                        | 24 | BN GN               |                           |
|                 | 8   | RD                        | 25 | WH YE               |                           |
|                 | 9   | BK                        |    |                     |                           |
|                 | 10  | VT                        |    |                     |                           |
|                 | 11  | GY PK                     |    |                     |                           |
|                 | 12  | RD BU                     |    |                     |                           |
|                 | 13  | -                         |    |                     |                           |
|                 | 14  | -                         |    |                     |                           |
|                 | 15  | -                         |    |                     |                           |
|                 | 16  | -                         |    |                     |                           |
|                 | 17  | -                         |    |                     |                           |
|                 | 1   | WH                        | 18 | GY BN               |                           |
|                 | 2   | BN                        | 19 | WH PK               |                           |
|                 | 3   | GN                        | 20 | PK BN               |                           |
|                 | 4   | YE                        | 21 | WH BU <sup>3)</sup> |                           |
|                 | 5   | GY                        | 22 | BN BU <sup>3)</sup> |                           |
|                 | 6   | PK                        | 23 | WH RD <sup>3)</sup> |                           |
|                 | 7   | BU                        | 24 | BN RD <sup>3)</sup> |                           |
|                 | 8   | RD                        | 25 | WH BK <sup>3)</sup> |                           |
|                 | 9   | BK                        |    |                     |                           |
|                 | 10  | VT                        |    |                     |                           |
|                 | 11  | GY PK                     |    |                     |                           |
|                 | 12  | RD BU                     |    |                     |                           |
|                 | 13  | WH GN                     |    |                     |                           |
|                 | 14  | BN GN                     |    |                     |                           |
|                 | 15  | WH YE                     |    |                     |                           |
|                 | 16  | YE BN                     |    |                     |                           |
|                 | 17  | WH GY                     |    |                     |                           |
| KMP6-26P-16-... |     |                           |    |                     |                           |
|                 | Pin | Wire colour <sup>1)</sup> |    | Pin                 | Wire colour <sup>1)</sup> |
|                 | 1   | WH                        | 14 | BN GN               |                           |
|                 | 2   | BN                        | 15 | WH YE               |                           |
|                 | 3   | GN                        | 16 | YE BN               |                           |
|                 | 4   | YE                        | 17 | -                   |                           |
|                 | 5   | GY                        | 18 | -                   |                           |
|                 | 6   | PK                        | 19 | -                   |                           |
|                 | 7   | BU                        | 20 | -                   |                           |
|                 | 8   | RD                        | 21 | -                   |                           |
|                 | 9   | BK                        | 22 | -                   |                           |
|                 | 10  | VT                        | 23 | WH GY               |                           |
|                 | 11  | GY PK                     | 24 | GY BN               |                           |
|                 | 12  | RD BU                     | 25 | WH PK               |                           |
|                 | 13  | WH GN                     | 26 | PK BN               |                           |

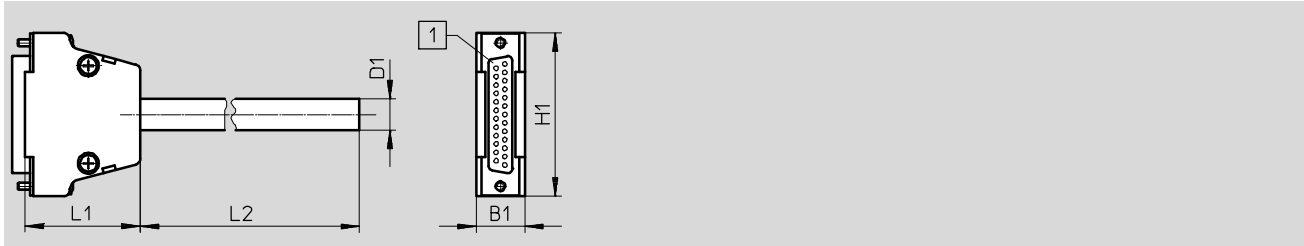
1) To IEC 757

2) Wire cross section 0.5 mm<sup>2</sup>

3) Wire cross section 0.34 mm<sup>2</sup>

## Dimensions

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| Type            | 1                    | B1 | D1   | H1   | L1   | L2   |
|-----------------|----------------------|----|------|------|------|--|
| KMP6-09P-8-...  | Sub-D socket, 9-pin  | 16 | 7.6  | 31.2 | 34.5 | Length according to type<br>(2.5 m, 5 m or 10 m) |
| KMP6-15P-12-... | Sub-D socket, 15-pin | 16 | 8.5  | 40   | 34.5 |  |
| KMP6-25P-12-... | Sub-D socket, 25-pin | 16 | 8.5  | 53.4 | 37.7 |  |
| KMP6-25P-20-... | Sub-D socket, 25-pin | 16 | 10.3 | 53.4 | 37.7 |  |
| KMP6-26P-16-... | Sub-D socket, 26-pin | 16 | 8.6  | 40   | 34.5 |  |

## Ordering data

| Electrical connection | Cable composition [mm <sup>2</sup> ] | Product weight [g] | Cable length [m] | Part No.      | Type                   |
|-----------------------|--------------------------------------|--------------------|------------------|---------------|------------------------|
| Sub-D socket, 9-pin   | 8x0.34 + 1x0.5                       | 248                | 2.5              | <b>531184</b> | <b>KMP6-09P-8-2,5</b>  |
|                       | 8x0.34 + 1x0.5                       | 454                | 5                | <b>531185</b> | <b>KMP6-09P-8-5</b>    |
|                       | 8x0.34 + 1x0.5                       | 864                | 10               | <b>531186</b> | <b>KMP6-09P-8-10</b>   |
| Sub-D socket, 15-pin  | 15x0.34                              | 293                | 2.5              | <b>527543</b> | <b>KMP6-15P-12-2,5</b> |
|                       | 15x0.34                              | 585                | 5                | <b>527544</b> | <b>KMP6-15P-12-5</b>   |
|                       | 15x0.34                              | 1134               | 10               | <b>527545</b> | <b>KMP6-15P-12-10</b>  |
| Sub-D socket, 25-pin  | 15x0.34                              | 329                | 2.5              | <b>530049</b> | <b>KMP6-25P-12-2,5</b> |
|                       | 15x0.34                              | 590                | 5                | <b>530050</b> | <b>KMP6-25P-12-5</b>   |
|                       | 15x0.34                              | 1140               | 10               | <b>530051</b> | <b>KMP6-25P-12-10</b>  |
| Sub-D socket, 25-pin  | 20x0.25 + 5x0.34                     | 432                | 2.5              | <b>530046</b> | <b>KMP6-25P-20-2,5</b> |
|                       | 20x0.25 + 5x0.34                     | 814                | 5                | <b>530047</b> | <b>KMP6-25P-20-5</b>   |
|                       | 20x0.25 + 5x0.34                     | 1600               | 10               | <b>530048</b> | <b>KMP6-25P-20-10</b>  |
| Sub-D socket, 26-pin  | 20x0.25                              | 280                | 2.5              | <b>527546</b> | <b>KMP6-26P-16-2,5</b> |
|                       | 20x0.25                              | 570                | 5                | <b>527547</b> | <b>KMP6-26P-16-5</b>   |
|                       | 20x0.25                              | 1145               | 10               | <b>527548</b> | <b>KMP6-26P-16-10</b>  |

# Connecting cables for valve terminals

KMPV, for multi-pin plug connection – Technical data

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## Plug socket with cable KMPV

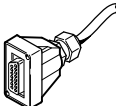
- Plug socket with cable for multi-pin connection (to multi-pin plug distributor MPV-...)
- Pre-assembled
- Cable lengths of 5 m or 10 m
- 15-pin
- Sub-D



## General technical data

| Type                          | KMPV-...                         |             |
|-------------------------------|----------------------------------|-------------|
| Type of mounting              | 2 M4x16 screws                   |             |
| Mounting position             | Any                              |             |
| Electrical connection         | 15-pin Sub-D socket              |             |
| Operating voltage range       | [V]                              | 30 DC       |
| Current-carrying capacity     | [A]                              | 2.8         |
| Cable diameter                | [mm]                             | 8.2         |
| Protection class to EN 60 529 | IP65 (assembled)                 |             |
| Material of housing           | Polyester, fibreglass reinforced |             |
| Material of contacts          | Gold-plated copper base alloy    |             |
| Material of cable sheath      | Polyurethane                     |             |
| Ambient temperature           | [°C]                             | -20 ... +80 |

## Ordering data

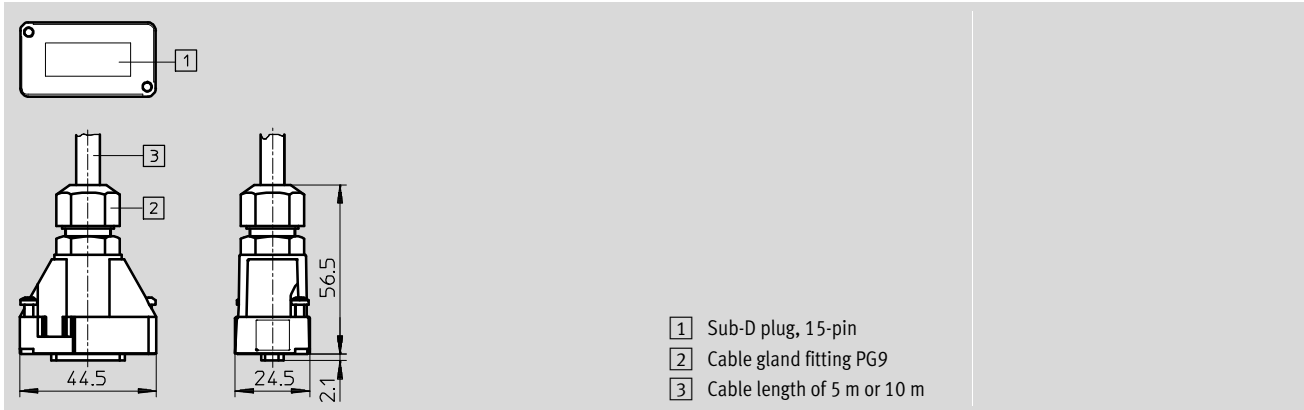
|   | Cable composition<br>[mm <sup>2</sup> ] | Product weight<br>[g] | Cable length<br>[m] | Type                    | Part No.       |
|---|---|-----------------------|---------------------|-------------------------|----------------|
|  | 15x0.25                                 | 300                   | 5                   | <b>KMPV-SUB-D-15-5</b>  | <b>177 673</b> |
|   | 15x0.25                                 | 400                   | 10                  | <b>KMPV-SUB-D-15-10</b> | <b>177 674</b> |



## Dimensions

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KMPV-...



## Wiring allocation (socket view)

KMPV-...

|  | Pin | Core colour | Pin | Core colour  |
|--|-----|-------------|-----|--------------|
|  | 1   | White       | 9   | Black        |
|  | 2   | Brown       | 10  | Purple       |
|  | 3   | Green       | 11  | Grey-pink    |
|  | 4   | Yellow      | 12  | Red-blue     |
|  | 5   | Grey        | 13  | White-green  |
|  | 6   | Pink        | 14  | Brown-green  |
|  | 7   | Blue        | 15  | White-yellow |
|  | 8   | Red         |     |              |






























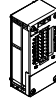















# Universal plug connectors

Selection aid

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














| Version   | Type  | CPX connection blocks   |   |   |   |   |   |   |   |   |   | Page/Internet<br>↑ |
|---|---|---|---|---|---|---|---|---|---|---|---|--------------------|
|   |   |  |  |  |  |  |  |  |  |  |  |                    |
|    | NECU-S-M8G3-HX  | ■   |   |   |   |   |   |   |   |   |   | 184                |
|    | NECU-S-M8G4-HX  |   | ■   |   |   |   |   |   |   |   |   | 186                |
|    | NECU-S-M8G4-C2  |   | ■   |   |   |   |   |   |   |   |   | 186                |
|   | NECU-L3G7-C1  |   |   |   |   |   |   |   |   |   | ■   | 196                |
|  | NECU-G78G4-C2   |   |   |   |   |   | ■   |   |   |   |   | 203                |
|  | NECU-G78G5-C2   |   |   |   |   |   |   | ■   |   |   |   | 205                |
|  | NECU-M-PPG5-C1  |   |   |   |   |   |   |   | ■   |   |   | 207                |
|  | NEDU-M8D3-M8T4  |   | ■   |   |   |   |   |   |   |   |   | 210                |
|  | NEDU-M8D3-M12T4   |   |   | ■   | ■   | ■   |   |   |   |   |   | 214                |
|  | NEDU-M12D5-M12T4  |   |   | ■   | ■   | ■   |   |   |   |   |   | 214                |
|  | SEA-3GS-M8-S<br>SEA-GS-M8   | ■   |   |   |   |   |   |   |   |   |   | 231                |
|  | SEA-GS-7<br>SEA-GS-9<br>SEA-4GS-7-2,5<br>SEA-M12-5GS-PG7<br>SEA-GS-11-DUO<br>SEA-5GS-11-DUO |   |   | ■   | ■   | ■   |   |   |   |   |   | 233                |
|  | NTSD-GD-9<br>NTSD-GD-13,5   |   |   |   |   |   |   |   |   | ■   |   | 338                |
|  | NTSD-WD-9   |   |   |   |   |   |   |   |   | ■   |   | 338                |
|  | NTSD-WD-11  |   |   |   |   |   |   |   |   | ■   |   | 338                |

| Version   | Type  | CPX connection blocks   |   |   |   |   |   | Page/Internet<br>↑ |
|---|---|---|---|---|---|---|---|--------------------|
|   |   |  |  |  |  |  |  |                    |
|   |   | CPX-P-AB-4XM12-4POL-8DE-N-IS  | CPX-P-AB-2XKL-8POL-8DE-N-IS   | CPX-P-AB-2XKL-8POL  | CPX-M-GE-EV-Z-7/8-5POL<br>CPX-M-GE-EV-Z-7/8-5POL-VL                                 | IO-Link connecting Ports  | CTS-L-D-16E-M8-3<br>CP-E08-M8-CL  |                    |
|    | NECU-S-M8G3-HX  |   |   |   |   |   | ■   | 184                |
|    | NECU-M-S-A12G4-IS   | ■   |   |   |   |   |   | 190                |
|    | NECU-L3G8-C1<br>Spring-loaded terminal  |   |   | ■   |   |   |   | 197                |
|   | NECU-L3G8-C2<br>Screw terminal  |   |   | ■   |   |   |   | 197                |
|  | NECU-L3G8-C1-IS<br>Spring-loaded terminal   |   | ■   |   |   |   |   | 197                |
|  | NECU-L3G8-C2-IS<br>Screw terminal   |   | ■   |   |   |   |   | 197                |
|  | NECU-G78G5-C2   |   |   |   | ■   |   |   | 205                |
|  | NEDU-M12D4-M12T4-IS   | ■   |   |   |   |   |   | 214                |
|  | SEA-GS-7<br>SEA-GS-9<br>SEA-4GS-7-2,5<br>SEA-M12-5GS-PG7<br>SEA-GS-11-DUO<br>SEA-5GS-11-DUO |   |   |   |   |   | ■   | 233                |
|  | FB-TA-M12-5POL  |   |   |   |   | ■   |   | 259                |

# Universal plug connectors

Selection aid

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| Version   | Type  | IO-Port / IO-Link / CP I/O modules  |   |   | AS-interface modules   |   | Multi-pin plug distributor  |   | Page/Internet<br>↑ |
|---|---|---|---|---|--|---|---|---|--------------------|
|   |   |  |  |  |  |  |  |  |                    |
|   |   | CTSL-D-16E-M12-5<br>CP-E16N-M12-EL<br>CP-E08-M12-CL<br>CP-E16N-M12x2              | CP-E32-M8-EL  | CP-E16-KL-CL  | ASI-4DI3DO-M12x2-5POL-Z  | ASI-8DI-M8-3POL   | MPV-E/A08-M8<br>MPV-/A0812M8<br>MPV-E/A08-M1  | NEDU-L4R1-M8G3L-M12G8<br>NEDU-L6R1-M8G3L-M12G8                                      |                    |
|    | SEA-3GS-M8-S<br>SEA-GS-M8   |   |   |   |  |   | ■   | ■   | 231                |
|    | SEA-GS-7<br>SEA-GS-9<br>SEA-4GS-7-2,5<br>SEA-M12-5GS-PG7<br>SEA-GS-11-DUO<br>SEA-5GS-11-DUO | ■   |   |   |  |   | ■   |   | 233                |
|  | NECU-S-M8G3-HX  |   |   |   |  |   | ■   | ■   | 184                |
|  | NECU-S-M8G4-HX  |   | ■   |   |  |   |   |   | 186                |
|  | NECU-S-M8G4-C2  |   | ■   |   |  |   |   |   | 186                |
|  | NEDU-M8D3-M8T4  |   | ■   |   |  | ■   |   |   | 210                |
|  | NEDU-M12D5-M12T4  | ■   |   |   | ■  |   |   |   | 214                |
|  | PS1-SAC31-30POL+LED   |   |   | ■   |  |   |   |   | 249                |

| Function | Design                                   | Type                | Connection technology             | Connection cross section [mm <sup>2</sup> ] | Protection class | Bus protocol/ac-tuation | → Page/Internet |
|----------|--|---------------------|-----------------------------------|---|------------------|-------------------------|-----------------|
| Plug     | <b>Round plug connector M8</b>           |                     |                                   |   |                  |                         |                 |
|          | 3-pin                                    | NECU-S-M8G3-HX      | Harax® quick connection           | 0.1 ... 0.14<br>0.14 ... 0.34               | IP65, IP67       | –                       | 184             |
|          | 4-pin                                    | NECU-S-M8G4-HX      | Harax® quick connection           | 0.14 ... 0.34                               | IP65, IP67       | –                       | 186             |
|          |  | NECU-S-M8G4-C2      | Screw terminal                    | 0.14 ... 0.5                                | IP67             | –                       | 186             |
|          | <b>Round plug connector M12, A-coded</b> |                     |                                   |   |                  |                         |                 |
|          | 3-pin                                    | NECU-S-M12G3-HX     | Harax® quick connection           | 0.14 ... 0.34<br>0.34 ... 0.75              | IP65, IP67       | –                       | 188             |
|          | 4-pin                                    | NECU-M-S-A12G4      | Spring-loaded terminal            | 0.14 ... 0.5                                | IP65, IP67       | –                       | 190             |
|          |  | NECU-S-M12G4-HX     | Harax® quick connection           | 0.14 ... 0.34<br>0.34 ... 0.75              | IP65, IP67       | –                       | 190             |
|          |  | NECU-S-M12G4-...-IS | Screw terminal                    | 0.14 ... 0.5<br>0.75                        | IP65, IP67       | –                       | 190             |
|          | 5-pin                                    | NECU-M-S-B12G5      | Screw terminal                    | 0.14 ... 0.75                               | IP67             | PROFIBUS                | 273             |
|          | <b>Round plug connector M12, D-coded</b> |                     |                                   |   |                  |                         |                 |
|          | 4-pin                                    | NECU-M-S-D12G4      | Screw terminal, can be screened   | 0.14 ... 0.75                               | IP67             | Ethernet                | 190             |
|          | <b>Square plug connector</b>             |                     |                                   |   |                  |                         |                 |
|          | 4-pin                                    | NECU-S-ECG4         | Insulation displacement connector | 0.14  | IP40             | –                       | 194             |
|          | 7-pin                                    | NECU-L3G7-C1        | Spring-loaded terminal            | 0.2 ... 2.5                                 | –                | –                       | 196             |
|          | 8-pin                                    | NECU-L3G8-C1        | Spring-loaded terminal            | 0.2 ... 2.5                                 | –                | –                       | 197             |
|          |  | NECU-L3G8-C2        | Screw terminal                    | 0.2 ... 2.5                                 | –                | –                       | 197             |
|          | <b>Sub-D plug connector</b>              |                     |                                   |   |                  |                         |                 |
|          | 9-pin                                    | NECU-S1W9-C2-APB    | IDC terminal                      | 0.08 ... 0.5                                | IP20             | PROFIBUS                | 263             |

| Function | Design                               | Type             | Connection technology           | Connection cross section [mm <sup>2</sup> ] | Protection class | Bus protocol/ac-tuation | → Page/Internet |
|----------|--------------------------------------|------------------|---------------------------------|---|------------------|-------------------------|-----------------|
| Socket   | <b>Round plug connector M8</b>       |                  |                                 |   |                  |                         |                 |
|          | 4-pin                                | NECU-M8G4        | Screw terminal                  | 0.14 ... 0.5                                | IP67             | –                       | 199             |
|          | <b>Round plug connector M12</b>      |                  |                                 |   |                  |                         |                 |
|          | 4-pin                                | SIE              | Screw terminal                  | 0.25 ... 0.75                               | IP67             | –                       | 201             |
|          | 5-pin                                | NECU-M-B12G5     | Screw terminal                  | 0.14 ... 0.75                               | IP67             | –                       | 275             |
|          | <b>Round plug connector 7/8"</b>     |                  |                                 |   |                  |                         |                 |
|          | 4-pin                                | NECU-G78G4       | Screw terminal                  | Max. 1.5                                    | IP67             | –                       | 203             |
|          | 5-pin                                | NECU-G78G5       | Screw terminal                  | Max. 1.5                                    | IP67             | –                       | 205             |
|          | <b>AIDA push-pull plug connector</b> |                  |                                 |   |                  |                         |                 |
|          | 5-pin                                | NECU-M-PPG5      | Spring-loaded terminal          | 0.75 ... 2.5                                | IP65, IP67       | –                       | 207             |
|          | <b>Sub-D plug connector</b>          |                  |                                 |   |                  |                         |                 |
|          | 9-pin                                | NECU-S1W9-C2-ACO | Screw terminal, can be screened | 0.14 ... 0.5                                | IP20             | CANopen                 | 265             |

# Universal plug connectors

NECU-S-M8G3, M8, 3-pin – Technical data

FESTO

**Plug**  
**NECU-S-M8G3**

- Plug
- 3-pin
- Can be assembled with any cable lengths



## General technical data

| Type                                   | NECU-S-M8G3-HX-Q3   | NECU-S-M8G3-HX |
|--|---|----------------|
| Electrical connection                  | Straight plug, M8x1<br>3-pin<br>Insulation displacement connector |                |
| Operating voltage range                | [V DC]  | 0 ... 32       |
|  | [V AC]  | 0 ... 32       |
| Surge resistance                       | [kV]  | 0.8            |
| Acceptable current load at 40 °C       | [A]   | 2              |
|  |   | 4              |
| Based on standard                      | EN 61076-2-104  | EN 61076-2-104 |
|  | EN 61984  | EN 61984       |
| Permissible cable Ø                    | [mm]  | 2.1 ... 3.5    |
| Permissible individual wire Ø          | [mm]  | ≥ 0.05         |
| Connection cross section               | [mm <sup>2</sup> ]  | 0.1 ... 0.14   |
| Permissible wire Ø                     | [mm]  | 0.6 ... 1      |
| Permissible wire insulation            | PP  | PP             |
|  | PVC   | PVC            |
|  | –   | TPE-E          |
| Connection frequency                   |   | 3              |
| Max. tightening torque of locking clip | [Nm]  | 0.3            |
| Protection class                       |   | IP65           |
|  |   | IP67           |

## Materials

|                   |                             |
|-------------------|-----------------------------|
| Housing           | Polyamide                   |
|                   | Nickel-plated die-cast zinc |
| Seals             | Fluoro elastomer            |
|                   | Polyurethane                |
| Pin contact       | Gold-plated                 |
| Note on materials | Free of copper and PTFE     |
|                   | RoHS-compliant              |

## Operating and environmental conditions

|  |      |                       |
|--|------|-----------------------|
| Ambient temperature                          | [°C] | –25 ... +85           |
| Corrosion resistance class CRC <sup>1)</sup> |      | 1                     |
| Degree of contamination                      |      | 3                     |
| Certification                                |      | cULus recognized (OL) |

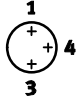
1) Corrosion resistance class 1 according to Festo standard 940 070  
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.



## Pin allocation

M8x1

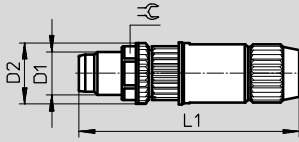
3-pin



| Pin | Wire colour |
|-----|-------------|
| 1   | Brown       |
| 3   | Blue        |
| 4   | Black       |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type       | D1   | D2   | L1   | ⏏ |
|------------|------|------|------|---|
| NECU-S-M8G | M8x1 | 11.5 | 40.8 | 9 |

## Ordering data

| Electrical connection   | Connection cross section [mm <sup>2</sup> ] | Weight [g] | Part No. | Type              |
|---|---|------------|----------|-------------------|
| Plug M8x1, 3-pin, straight, insulation displacement connector | 0.1 ... 0.14                                | 7.8        | 564945   | NECU-S-M8G3-HX-Q3 |
|   | 0.14 ... 0.34                               | 7.8        | 562024   | NECU-S-M8G3-HX    |

# Universal plug connectors

NECU-S-M8G4, M8, 4-pin – Technical data

FESTO

## Plug NECU-S-M8G4

- Plug
- 4-pin
- Can be assembled with any cable lengths



## General technical data

| Type                                   | NECU-S-M8G4-HX                    | NECU-S-M8G4-C2                |
|--|-----------------------------------|-------------------------------|
| Electrical connection                  | Straight plug, M8x1               |                               |
|  | 4-pin                             |                               |
|  | Insulation displacement connector | Screw terminal                |
| Plug coding                            | –                                 | Coded via contact arrangement |
| Operating voltage range                | [V DC]                            | 0 ... 32                      |
|  | [V AC]                            | 0 ... 32                      |
| Surge resistance                       | [kV]                              | 0.8                           |
| Acceptable current load at 40 °C       | [A]                               | 4                             |
| Based on standard                      | EN 61076-2-104                    | EN 61076-2-101                |
|  | EN 61984                          | EN 61984                      |
| Transmission characteristics           | –                                 | DIN EN 50173/CAT 5            |
| Permissible cable Ø                    | [mm]                              | 2.5 ... 5.1                   |
| Permissible individual wire Ø          | [mm]                              | ≥ 0.1                         |
| Connection cross section               | [mm <sup>2</sup> ]                | 0.14 ... 0.34                 |
| Permissible wire Ø                     | [mm]                              | 0.9 ... 1.6                   |
| Permissible wire insulation            | PP                                | –                             |
|  | PVC                               | –                             |
|  | TPE-E                             | –                             |
| Connection frequency                   |                                   | 3                             |
| Max. tightening torque of locking clip | [Nm]                              | 0.3                           |
| Protection class                       | IP65                              | –                             |
|  | IP67                              | IP67                          |

## Materials

| Type              | NECU-S-M8G4-HX              | NECU-S-M8G4-C2      |
|-------------------|-----------------------------|---------------------|
| Housing           | Polyamide                   | –                   |
|                   | Nickel-plated die-cast zinc | –                   |
| Seals             | Fluoro elastomer            | –                   |
|                   | Polyurethane                | –                   |
| Pin contact       | Gold-plated                 | Gold-plated brass   |
| Union nut         | –                           | Nickel-plated brass |
| Note on materials | Free of copper and PTFE     | –                   |
|                   | RoHS-compliant              | RoHS-compliant      |

## Operating and environmental conditions

| Type   | NECU-S-M8G4-HX        | NECU-S-M8G4-C2 |
|--|-----------------------|----------------|
| Ambient temperature [°C]                     | -25 ... +85           | -25 ... +85    |
| Corrosion resistance class CRC <sup>1)</sup> | 1                     | 1              |
| Degree of contamination                      | 3                     | 3              |
| Certification                                | cULus recognized (OL) | -              |

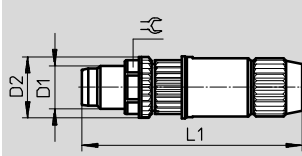
- 1) Corrosion resistance class 1 according to Festo standard 940 070  
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

## Pin allocation

| M8x1  |     |             |
|-------|-----|-------------|
| 4-pin | Pin | Wire colour |
|       | 1   | Brown       |
|       | 2   | White       |
|       | 3   | Blue        |
|       | 4   | Black       |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type           | D1   | D2   | L1   | ☍ |
|----------------|------|------|------|---|
| NECU-S-M8G4-HX | M8x1 | 11.5 | 40.8 | 9 |
| NECU-S-M8G4-C2 | M8x1 | 12   | 49.6 | 9 |

## Ordering data

| Electrical connection      |                                   | Connection cross section [mm <sup>2</sup> ] | Weight [g] | Part No.       | Type                  |
|----------------------------|-----------------------------------|---|------------|----------------|-----------------------|
| Plug M8x1, 4-pin, straight | Insulation displacement connector | 0.14 ... 0.34                               | 7.8        | <b>562025</b>  | <b>NECU-S-M8G4-HX</b> |
|                            | Screw terminal                    | 0.14 ... 0.5                                | 10.9       | <b>1068198</b> | <b>NECU-S-M8G4-C2</b> |

# Universal plug connectors

NECU-S-M12G3, M12, 3-pin – Technical data

FESTO

**Plug**  
**NECU-S-M12G3**

- Plug
- 3-pin
- Can be assembled with any cable lengths



## General technical data

| Type                                   | NECU-S-M12G3-HX                   | NECU-S-M12G3-HX-Q7 |
|--|-----------------------------------|--------------------|
| Electrical connection                  | Straight plug, M12x1              |                    |
|  | 3-pin                             |                    |
|  | Insulation displacement connector |                    |
| Plug coding                            | A-coded                           |                    |
| Operating voltage range                | [V DC]                            | 0 ... 32           |
|  | [V AC]                            | 0 ... 32           |
| Surge resistance                       | [kV]                              | 0.8                |
| Acceptable current load at 40 °C       | [A]                               | 4                  |
| Based on standard                      | EN 61076-2-101                    | EN 61076-2-101     |
|  | EN 61984                          | EN 61984           |
| Permissible cable Ø                    | [mm]                              | 2.9 ... 5.1        |
| Permissible individual wire Ø          | [mm]                              | ≥ 0.1              |
| Connection cross section               | [mm <sup>2</sup> ]                | 0.14 ... 0.34      |
| Permissible wire Ø                     | [mm]                              | 0.9 ... 1.6        |
| Permissible wire insulation            | PP                                | –                  |
|  | PVC                               | PVC                |
|  | TPE-E                             | –                  |
| Connection frequency                   |                                   | 3                  |
| Max. tightening torque of locking clip | [Nm]                              | 0.5                |
| Protection class                       | IP65                              | IP65               |
|  | IP67                              | IP67               |

## Materials

|                   |                             |
|-------------------|-----------------------------|
| Housing           | Polyamide                   |
|                   | Nickel-plated die-cast zinc |
| Seals             | Fluoro elastomer            |
|                   | Polyurethane                |
| Pin contact       | Gold-plated                 |
| Note on materials | Free of copper and PTFE     |
|                   | RoHS-compliant              |

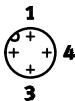
## Operating and environmental conditions

|  |                       |
|--|-----------------------|
| Ambient temperature [°C]                     | -25 ... +85           |
| Corrosion resistance class CRC <sup>1)</sup> | 1                     |
| Degree of contamination                      | 3                     |
| Certification                                | cULus recognized (OL) |

- 1) Corrosion resistance class 1 according to Festo standard 940 070  
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

## Pin allocation

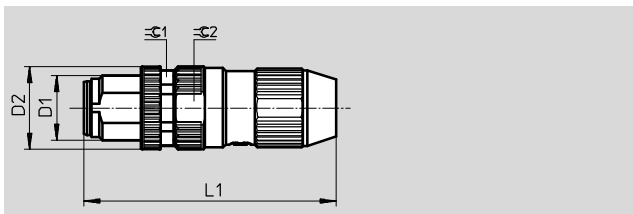
M12x1

| 3-pin   | Pin | Wire colour |
|---|-----|-------------|
|  | 1   | Brown       |
|   | 3   | Blue        |
|   | 4   | Black       |

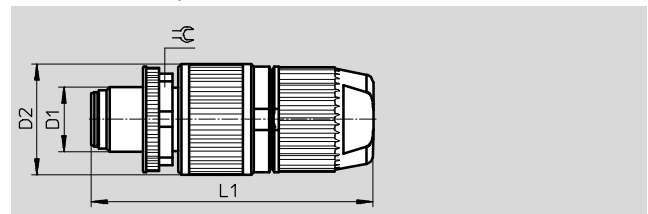
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

NECU-S-M12G3-HX



NECU-S-M12G3-HX-Q7



| Type               | D1    | D2   | L1    | ⌀  | ⌀1 | ⌀2 |
|--------------------|-------|------|-------|----|----|----|
| NECU-S-M12G3-HX    | M12x1 | 15.3 | 46.75 | -  | 13 | 14 |
| NECU-S-M12G3-HX-Q7 | M12x1 | 20.5 | 52.2  | 17 | -  | -  |

## Ordering data

| Electrical connection       |                                   | Connection cross section [mm <sup>2</sup> ] | Weight [g] | Part No.      | Type                      |
|-----------------------------|-----------------------------------|---|------------|---------------|---------------------------|
| Plug M12x1, 3-pin, straight | Insulation displacement connector | 0.14 ... 0.34                               | 17.5       | <b>562027</b> | <b>NECU-S-M12G3-HX</b>    |
|                             |                                   | 0.34 ... 0.75                               | 32.8       | <b>564946</b> | <b>NECU-S-M12G3-HX-Q7</b> |

# Universal plug connectors

NECU-M/NECU-S, M12, 4-pin – Technical data

FESTO

## Plug

NECU-M-S-A12G4

NECU-S-M12G4

NECU-M-S-D12G4

- Plug
- 4-pin
- Can be assembled with any cable lengths



## General technical data

| Type                                   | NECU-M-S-A12G4-IS      | NECU-S-M12G4-HX                   | NECU-S-M12G4-HX-Q7 |
|--|------------------------|-----------------------------------|--------------------|
| Electrical connection                  | Straight plug, M12x1   |                                   |                    |
|  | 4-pin                  |                                   |                    |
|  | Spring-loaded terminal | Insulation displacement connector |                    |
| Plug coding                            | A-coded                |                                   | A-coded            |
| Operating voltage range                | [V DC]                 | 0 ... 30                          | 0 ... 32           |
|  | [V AC]                 | –                                 | 0 ... 32           |
| Surge resistance                       | [kV]                   | –                                 | 0.8                |
| Acceptable current load at 40 °C       | [A]                    | 4                                 | 6                  |
| Based on standard                      | EN 61076-2-101         | EN 61076-2-101                    | EN 61076-2-101     |
|  | –                      | EN 61984                          | EN 61984           |
| Permissible cable Ø                    | [mm]                   | 4.0 ... 8.0                       | 2.9 ... 5.1        |
| Permissible individual wire Ø          | [mm]                   | –                                 | ≥ 0.1              |
| Connection cross section               | [mm <sup>2</sup> ]     | 0.14 ... 0.5                      | 0.14 ... 0.34      |
| Permissible wire Ø                     | [mm]                   | –                                 | 0.9 ... 1.6        |
| Permissible wire insulation            |                        | –                                 | PP, PVC, TPE-E     |
| Connection frequency                   |                        | 100                               | 3                  |
| Max. tightening torque of locking clip | [Nm]                   | 0.8                               | 0.5                |
| Protection class                       |                        | IP65                              | IP65               |
|  |                        | IP67                              | IP67               |

## Materials

| Type              | NECU-M-S-A12G4-IS           | NECU-S-M12G4-HX                | NECU-S-M12G4-HX-Q7             |
|-------------------|-----------------------------|--------------------------------|--------------------------------|
| Housing           | –                           | Polyamide                      | Polyamide                      |
|                   | Nickel-plated die-cast zinc | Nickel-plated die-cast zinc    | Nickel-plated die-cast zinc    |
| Seals             | –                           | Fluoro elastomer, polyurethane | Fluoro elastomer, polyurethane |
| Pin contact       | Gold-plated bronze          | Gold-plated                    | Gold-plated                    |
| Note on materials | –                           | Free of copper and PTFE        | Free of copper and PTFE        |
|                   | RoHS-compliant              | RoHS-compliant                 | RoHS-compliant                 |

## Operating and environmental conditions

| Type   | NECU-M-S-A12G4-IS | NECU-S-M12G4-HX | NECU-S-M12G4-HX-Q7    |
|--|-------------------|-----------------|-----------------------|
| Ambient temperature                          | [°C]              | –40 ... +85     | –25 ... +85           |
| Corrosion resistance class CRC <sup>1)</sup> |                   | –               | 1                     |
| Degree of contamination                      |                   | 3               | 3                     |
| Certification                                |                   | –               | cULus recognized (OL) |

1) Corrosion resistance class 1 according to Festo standard 940 070  
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

## General technical data

| Type                                   | NECU-S-<br>M12G4-P1-Q6-IS          | NECU-S-<br>M12G4-D-IS | NECU-S-<br>M12G4-P1-IS | NECU-S-<br>M12G4-P2-IS | NECU-M-S-<br>D12G4-C2-ET        |
|--|------------------------------------|-----------------------|------------------------|------------------------|---------------------------------|
| Electrical connection                  | Straight plug, M12x1               |                       |                        |                        |                                 |
|  | 4-pin                              |                       |                        |                        |                                 |
|  | Screw terminal                     |                       |                        |                        | Screw terminal, can be screened |
| Plug coding                            | A-coded                            |                       |                        |                        | D-coded                         |
| Operating voltage range                | [V DC]<br>0 ... 30                 |                       |                        |                        | 0 ... 250                       |
|  | [V AC]<br>–                        |                       |                        |                        | 0 ... 250                       |
| Surge resistance                       | [kV]<br>2.5                        |                       |                        |                        | 2.5                             |
| Acceptable current load at 40 °C       | [A]<br>4                           |                       |                        |                        | –                               |
| Based on standard                      | EN 61076-2-101                     |                       |                        |                        | EN 61076-2-101                  |
|  | EN 61984                           |                       |                        |                        | EN 61984                        |
| Transmission characteristics           | –                                  |                       |                        |                        | DIN EN 50173/CAT 5              |
| Permissible cable Ø                    | [mm]<br>2.5 ... 2.9                | 2x 3.0 or 2x 5.0      | 4.0 ... 6.0            | 6.0 ... 8.0            | 6.0 ... 8.0                     |
| Connection cross section               | [mm <sup>2</sup> ]<br>0.14 ... 0.5 | 0.75                  | 0.75                   | 0.75                   | 0.14 ... 0.75                   |
| Connection frequency                   | 50                                 |                       |                        |                        |                                 |
| Max. tightening torque of locking clip | [Nm]<br>0.5                        |                       |                        |                        | –                               |
| Protection class                       | IP65                               |                       |                        |                        | –                               |
|  | IP67                               |                       |                        |                        | IP67                            |

## Materials

| Type              | NECU-S-M12G4-...-IS | NECU-M-S-D12G4-C2-ET        |
|-------------------|---------------------|-----------------------------|
| Housing           | Polyamide           | Nickel-plated die-cast zinc |
| Pin contact       | Brass               | Gold-plated brass           |
|                   | Coated white bronze | –                           |
| Note on materials | –                   | Free of copper and PTFE     |
|                   | RoHS-compliant      | RoHS-compliant              |

## Operating and environmental conditions

| Type   | NECU-S-M12G4-...-IS | NECU-M-S-D12G4-C2-ET        |
|--|---------------------|-----------------------------|
| Ambient temperature                          | [°C]<br>–25 ... +85 | –25 ... +85                 |
| Corrosion resistance class CRC <sup>1)</sup> | –                   | 1                           |
| Degree of contamination                      | 3                   | 3                           |
| CE marking (see declaration of conformity)   | –                   | To EU Low Voltage Directive |

- 1) Corrosion resistance class 1 according to Festo standard 940 070  
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

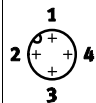
# Universal plug connectors

NECU-M/NECU-S, M12, 4-pin – Technical data

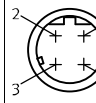
FESTO

## Pin allocation

M12x1, A-coded

| 4-pin   | Pin | Wire colour |
|---|-----|-------------|
|  | 1   | Brown       |
|   | 2   | White       |
|   | 3   | Blue        |
|   | 4   | Black       |

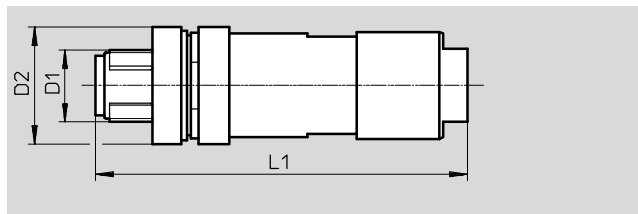
M12x1, D-coded

| 4-pin   | Pin | Wire colour |
|---|-----|-------------|
|  | 1   | –           |
|   | 2   | –           |
|   | 3   | –           |
|   | 4   | –           |

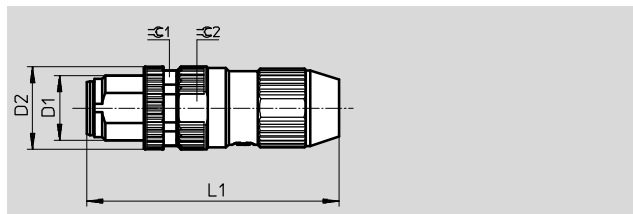
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

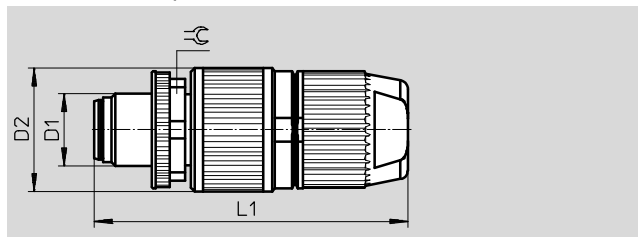
NECU-M-S-A12G4-IS



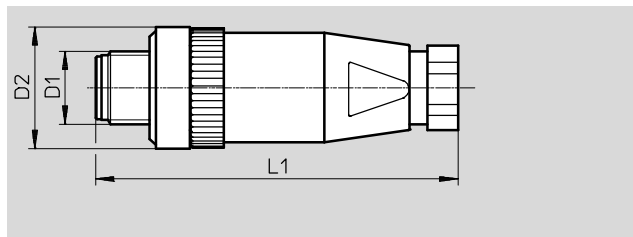
NECU-S-M12G4-HX



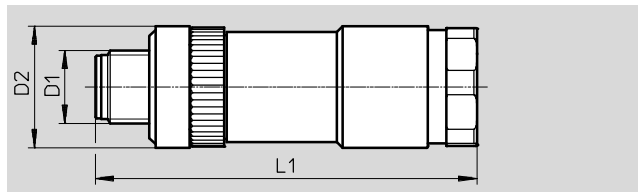
NECU-S-M12G4-HX-Q7



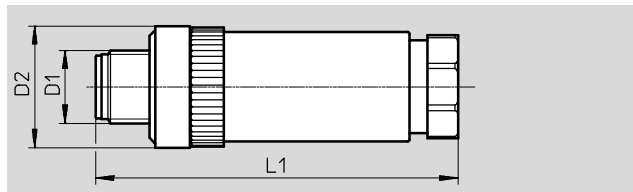
NECU-S-M12G4-P1



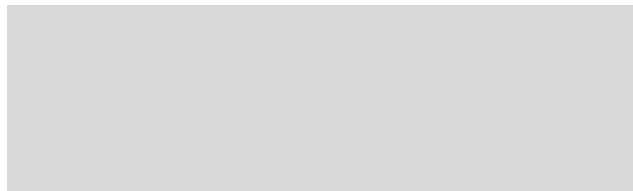
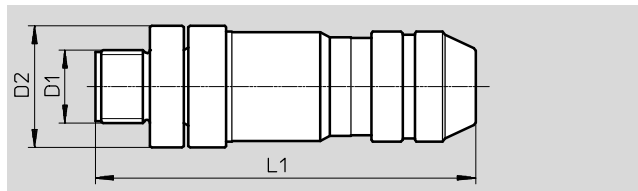
NECU-S-M12G4-D



NECU-S-M12G4-P2



NECU-M-S-D12G4-C2-ET



6

| Type                 | D1    | D2   | L1    | $\varnothing$ | $\varnothing 1$ | $\varnothing 2$ |
|----------------------|-------|------|-------|---------------|-----------------|-----------------|
| NECU-M-S-A12G4-IS    | M12x1 | 19.2 | 61.1  | –             | –               | –               |
| NECU-S-M12G4-HX      | M12x1 | 15.3 | 46.75 | –             | 13              | 14              |
| NECU-S-M12G4-HX-Q7   | M12x1 | 20.5 | 52.2  | 17            | –               | –               |
| NECU-S-M12G4-P1      | M12x1 | 20   | 59.6  | –             | –               | –               |
| NECU-S-M12G4-D       | M12x1 | 20   | 62.6  | –             | –               | –               |
| NECU-S-M12G4-P2      | M12x1 | 20   | 59.6  | –             | –               | –               |
| NECU-M-S-D12G4-C2-ET | M12x1 | 20   | 62.5  | –             | –               | –               |



## Ordering data

| Electrical connection                   |                                    | Connection cross section<br>[mm <sup>2</sup> ] | Weight<br>[g] | Part No.      | Type                         |
|---|------------------------------------|--|---------------|---------------|------------------------------|
| Plug M12x1, 4-pin, straight,<br>A-coded | Spring-loaded terminal             | 0.14 ... 0.5                                   | 38            | <b>575719</b> | <b>NECU-M-S-A12G4-IS</b>     |
|   | Insulation displacement connector  | 0.14 ... 0.34                                  | 17.5          | <b>562028</b> | <b>NECU-S-M12G4-HX</b>       |
|   |                                    | 0.34 ... 0.75                                  | 33.3          | <b>564947</b> | <b>NECU-S-M12G4-HX-Q7</b>    |
|   | Screw terminal                     | 0.14 ... 0.5                                   | 18            | <b>570955</b> | <b>NECU-S-M12G4-P1-Q6-IS</b> |
|   |                                    | 0.75   | 24            | <b>570956</b> | <b>NECU-S-M12G4-D-IS</b>     |
|   |                                    | 0.75   | 17            | <b>570953</b> | <b>NECU-S-M12G4-P1-IS</b>    |
| Plug M12x1, 4-pin, straight,<br>D-coded | Screw terminal, can<br>be screened | 0.14 ... 0.75                                  | 45.3          | <b>570954</b> | <b>NECU-S-M12G4-P2-IS</b>    |
|   |                                    |  |               | <b>543109</b> | <b>NECU-M-S-D12G4-C2-ET</b>  |

# Universal plug connectors

NECU-S-ECG4, square, 4-pin – Technical data

FESTO

**Plug**  
**NECU-S-ECG4**

- Plug
- 4-pin
- Insulation displacement connector
- Can be assembled with any cable lengths



## General technical data

|                                  |                                   |             |
|----------------------------------|-----------------------------------|-------------|
| Electrical connection            | Straight plug, square design      |             |
|                                  | 4-pin                             |             |
|                                  | Insulation displacement connector |             |
| Operating voltage range          | [V DC]                            | 0 ... 30    |
| Surge resistance                 | [kV]                              | 0.8         |
| Acceptable current load at 40 °C | [A]                               | 3           |
| Permissible individual wire Ø    | [mm]                              | ≥ 0.07      |
| Connection cross section         | [mm <sup>2</sup> ]                | 0.14        |
| Permissible wire Ø               | [mm]                              | 0.8 ... 1.0 |
| Permissible wire insulation      | PP                                |             |
|                                  | PVC                               |             |
|                                  | TPE-E                             |             |
| Connection frequency             |                                   | 1           |
| Type of mounting                 |                                   | Engaging    |
| Protection class                 |                                   | IP40        |

## Materials

|                   |                            |  |
|-------------------|----------------------------|--|
| Housing           | Polybutylene terephthalate |  |
|                   | Polycarbonate              |  |
| Pin contact       | Gold-plated                |  |
| Note on materials | RoHS-compliant             |  |

## Operating and environmental conditions

|  |      |                       |
|--|------|-----------------------|
| Ambient temperature                          | [°C] | -20 ... +60           |
| Corrosion resistance class CRC <sup>1)</sup> |      | 1                     |
| Degree of contamination                      |      | 2                     |
| Certification                                |      | cULus recognized (OL) |

1) Corrosion resistance class 1 according to Festo standard 940 070  
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type        | B1  | H1   | L1   |
|-------------|-----|------|------|
| NECU-S-ECG4 | 5.9 | 14.9 | 15.6 |

## Ordering data

| Electrical connection               |                                   | Connection cross section<br>[mm <sup>2</sup> ] | Weight<br>[g] | Part No.      | Type                     |
|-------------------------------------|-----------------------------------|--|---------------|---------------|--------------------------|
| Straight plug, square design, 4-pin | Insulation displacement connector | 0.14   | 3.6           | <b>570922</b> | <b>NECU-S-ECG4-HX-Q3</b> |

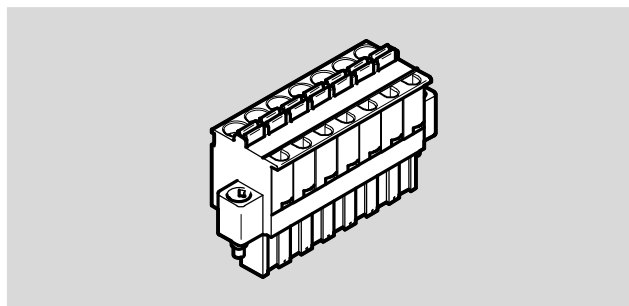
# Universal plug connectors

NECU-L3G7, terminal strip, 7-pin – Technical data

FESTO

Terminal strip  
NECU-L3G7

- Plug
- 7-pin
- Can be assembled with any cable lengths



## General technical data

|                                  |                        |             |
|----------------------------------|------------------------|-------------|
| Electrical connection            | Straight plug          |             |
|                                  | 7-pin                  |             |
|                                  | Spring-loaded terminal |             |
| Operating voltage range          | [V DC]                 | 0 ... 30    |
| Surge resistance                 | [kV]                   | 4           |
| Acceptable current load at 40 °C | [A]                    | 12          |
| Connection cross section         | [mm <sup>2</sup> ]     | 0.2 ... 2.5 |
| Connection frequency             |                        | 100         |

## Materials

|                   |                         |
|-------------------|-------------------------|
| Housing           | Polyamide               |
| Pin contact       | Tin-plated copper alloy |
| Note on materials | RoHS-compliant          |

## Operating and environmental conditions

|  |      |                   |
|--|------|-------------------|
| Ambient temperature                          | [°C] | -40 ... +85       |
| Corrosion resistance class CRC <sup>1)</sup> |      | 2                 |
| Degree of contamination                      |      | 3                 |
| Certification                                |      | cULus listed (OL) |

1) Corrosion resistance class 2 according to Festo standard 940 070

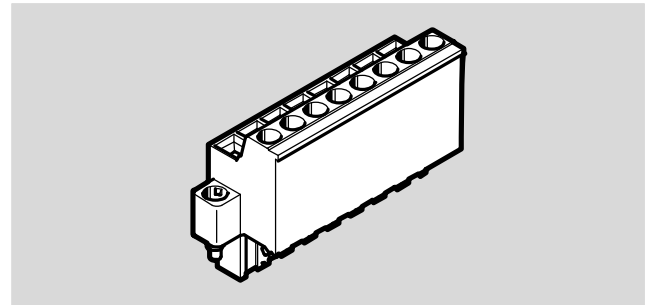
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

## Ordering data

| Electrical connection |                        | Housing colour | Part No. | Type         |
|-----------------------|------------------------|----------------|----------|--------------|
| Plug, 7-pin, straight | Spring-loaded terminal | Black          | 576319   | NECU-L3G7-C1 |

**Terminal strip**  
**NECU-L3G8**

- Plug
- 8-pin
- Can be assembled with any cable lengths
- The plugs meet the requirements of IEC 60079-11 with regard to air, leakage paths and separation distances for the maximum intrinsically safe operating voltage of 30 V DC



## General technical data

| Type  | NECU-L3G8-C1           | NECU-L3G8-C2   |
|---|------------------------|----------------|
| Electrical connection                       | Straight plug          |                |
|   | 8-pin                  |                |
|   | Spring-loaded terminal | Screw terminal |
| Operating voltage range [V DC]              | 0 ... 30               | 0 ... 30       |
| Surge resistance [kV]                       | 4                      | 0.8            |
| Acceptable current load at 40 °C [A]        | 12                     | 12             |
| Connection cross section [mm <sup>2</sup> ] | 0.2 ... 2.5            | 0.2 ... 2.5    |
| Connection frequency                        | 100                    | 100            |
| Max. tightening torque of locking clip [Nm] | –                      | 0.6            |
| Product weight [g]                          | 20                     | 20             |

## Materials

|                   |                         |
|-------------------|-------------------------|
| Housing           | Polyamide               |
| Pin contact       | Tin-plated copper alloy |
| Note on materials | RoHS-compliant          |

## Operating and environmental conditions

|  |             |
|--|-------------|
| Ambient temperature [°C]                     | –40 ... +85 |
| Corrosion resistance class CRC <sup>1)</sup> | 2           |
| Degree of contamination                      | 3           |

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

# Universal plug connectors

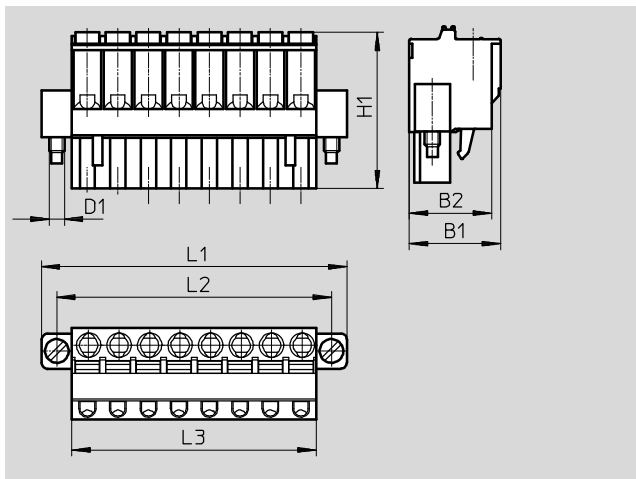
NECU-L3G8, terminal strip, 8-pin – Technical data

FESTO

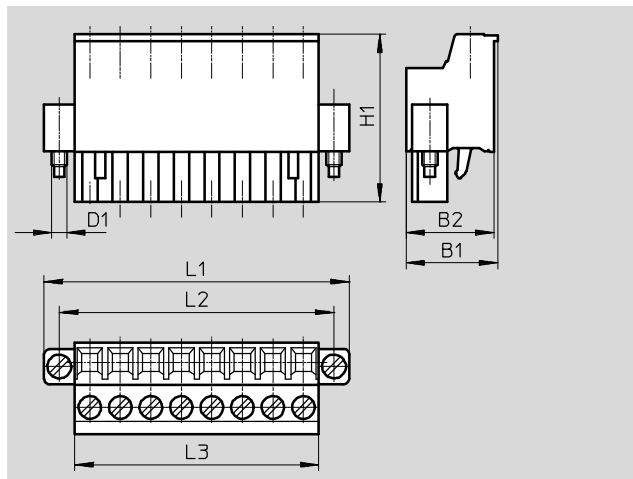
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

NECU-L3G8-C1



NECU-L3G8-C2



| Type         | B1 | B2   | D1   | H1   | L1 | L2 | L3 |
|--------------|----|------|------|------|----|----|----|
| NECU-L3G8-C1 | 15 | 13.5 | M2.5 | 25.6 | 50 | 45 | 40 |
| NECU-L3G8-C2 | 15 | 14.4 | M2.5 | 27.5 | 50 | 45 | 40 |

## Ordering data

| Electrical connection |                        | Housing colour | Part No. | Type            |
|-----------------------|------------------------|----------------|----------|-----------------|
| Plug, 8-pin, straight | Spring-loaded terminal | Black          | 565712   | NECU-L3G8-C1    |
|                       |                        | Gentian blue   | 565711   | NECU-L3G8-C1-IS |
|                       | Screw terminal         | Black          | 565710   | NECU-L3G8-C2    |
|                       |                        | Gentian blue   | 565709   | NECU-L3G8-C2-IS |

**Socket  
NECU-M8G4**

- Socket
- 4-pin
- Can be assembled with any cable lengths



## General technical data

|  |                       |              |
|--|-----------------------|--------------|
| Electrical connection                  | Straight socket, M8x1 |              |
|  | 4-pin                 |              |
| Operating voltage range                | [V DC]                | 0 ... 30     |
|  | [V AC]                | 0 ... 30     |
| Surge resistance                       | [kV]                  | 0.8          |
| Acceptable current load at 40 °C       | [A]                   | 3            |
| Based on standard                      | EN 61984              |              |
| Permissible cable Ø                    | [mm]                  | 3.5 ... 5.0  |
| Connection cross section               | [mm <sup>2</sup> ]    | 0.14 ... 0.5 |
| Connection frequency                   | 500                   |              |
| Max. tightening torque of locking clip | [Nm]                  | 0.3          |
| Protection class                       | IP67                  |              |

## Materials

|                   |                            |  |
|-------------------|----------------------------|--|
| Housing           | Polybutylene terephthalate |  |
|                   | Nickel-plated brass        |  |
| Housing colour    | Black                      |  |
| Pin contact       | Gold-plated brass          |  |
| Union nut         | Nickel-plated brass        |  |
| Note on materials | RoHS-compliant             |  |

## Operating and environmental conditions

|  |      |             |
|--|------|-------------|
| Ambient temperature                          | [°C] | -40 ... +80 |
| Storage temperature                          | [°C] | -40 ... +80 |
| Corrosion resistance class CRC <sup>1)</sup> | 2    |             |
| Degree of contamination                      | 3    |             |

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

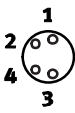
# Universal plug connectors

NECU-M8G4, M8, 4-pin – Technical data

FESTO

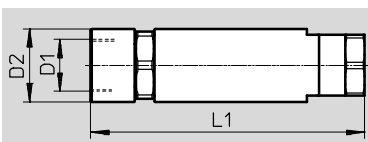
## Pin allocation

M8x1

| 4-pin   | Pin | Wire colour |
|---|-----|-------------|
|  | 1   | Brown       |
|   | 2   | White       |
|   | 3   | Blue        |
|   | 4   | Black       |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type     | D1   | D2 | L1 |
|----------|------|----|----|
| NECU-M8G | M8x1 | 12 | 45 |

## Ordering data

| Electrical connection        |                | Connection cross section<br>[mm <sup>2</sup> ] | Weight<br>[g] | Part No. | Type      |
|------------------------------|----------------|--|---------------|----------|-----------|
| Socket M8x1, 4-pin, straight | Screw terminal | 0.14 ... 0.5                                   | 9.5           | 544392   | NECU-M8G4 |



**Socket**  
**SIE-GD**  
**SIE-WD-TR**

- Socket
- 4-pin
- Can be assembled with any cable lengths



## General technical data

| Type                                   | SIE-GD                           | SIE-WD-TR                     |
|--|----------------------------------|-------------------------------|
| Electrical connection                  | Straight socket, M12x1<br>4-pin  | Angled socket, M12x1<br>4-pin |
| Operating voltage range                | [V DC] 0 ... 250                 | 0 ... 250                     |
|  | [V AC] 0 ... 250                 | 0 ... 250                     |
| Surge resistance                       | [kV] 2.5                         | 2.5                           |
| Acceptable current load at 40 °C       | [A] 4                            | 4                             |
| Based on standard                      | EN 61076-2-101                   | EN 61076-2-101                |
|  | EN 61984                         | EN 61984                      |
| Permissible cable Ø                    | [mm] 4 ... 6                     | 4 ... 6                       |
| Connection cross section               | [mm <sup>2</sup> ] 0.25 ... 0.75 | 0.25 ... 0.75                 |
| Max. tightening torque of locking clip | [Nm] 0.5                         | 0.5                           |
| Protection class                       | IP67                             | IP67                          |

## Materials

|                   |                |
|-------------------|----------------|
| Housing           | Polyamide      |
| Union nut         | Polyamide      |
| Note on materials | RoHS-compliant |

## Operating and environmental conditions

|  |                             |
|--|-----------------------------|
| Ambient temperature                          | [°C] -25 ... +85            |
| Corrosion resistance class CRC <sup>1)</sup> | 4                           |
| Degree of contamination                      | 3                           |
| CE marking (see declaration of conformity)   | To EU Low Voltage Directive |

1) Corrosion resistance class 4 to Festo standard 940 070  
 Components subject to high corrosion stress. Parts used with aggressive media, e.g. in the food or chemical industry. These applications should be supported with special tests with the media if required.

# Universal plug connectors

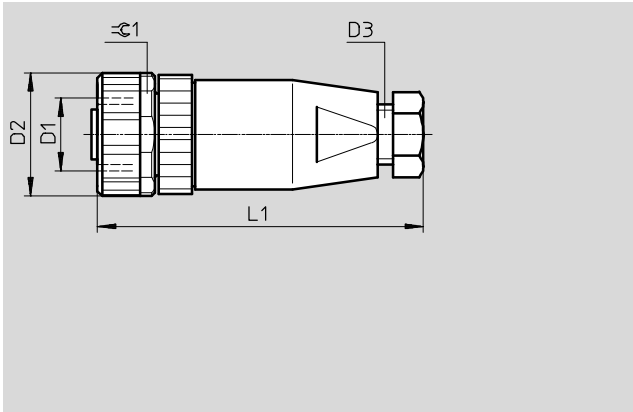
SIE-GD/SIE-WD, M12, 4-pin – Technical data

FESTO

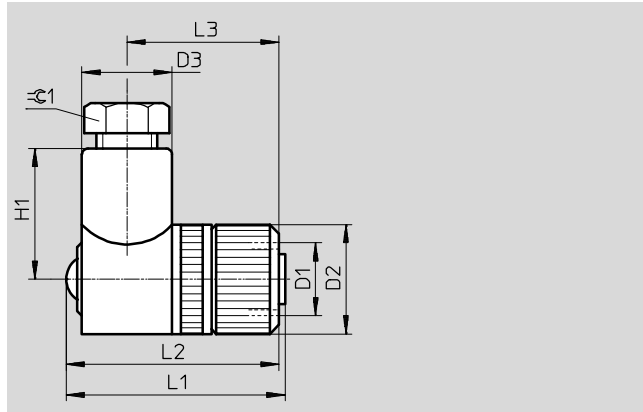
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

SIE-GD



SIE-WD-TR



| Type      | D1    | D2   | D3   | H1   | L1 | L2 | L3 | ≙C1 |
|-----------|-------|------|------|------|----|----|----|-----|
| SIE-GD    | M12x1 | 20.2 | Pg7  | –    | 54 | –  | –  | 18  |
| SIE-WD-TR | M12x1 | 18   | 14.8 | 20.5 | 36 | 35 | 25 | 13  |

## Ordering data

| Electrical connection |          | Connection cross section [mm <sup>2</sup> ] | Part No. | Type      |
|-----------------------|----------|---|----------|-----------|
| Socket M12x1, 4-pin   | Straight | 0.25 ... 0.75                               | 18494    | SIE-GD    |
|                       | Angled   | 0.25 ... 0.75                               | 12956    | SIE-WD-TR |

**Socket**  
**NECU-G78G4**

- Socket
- 4-pin
- Can be assembled with any cable lengths



## General technical data

|                                  |                       |           |
|----------------------------------|-----------------------|-----------|
| Electrical connection            | Straight socket, 7/8" |           |
|                                  | 4-pin                 |           |
|                                  | Screw terminal        |           |
| Plug coding                      | ODVA AutoSIG          |           |
| Operating voltage range          | [V DC]                | 0 ... 250 |
|                                  | [V AC]                | 0 ... 250 |
| Surge resistance                 | [kV]                  | 2.5       |
| Acceptable current load at 40 °C | [A]                   | 10        |
| Based on standard                | EN 61984              |           |
| Permissible cable Ø              | [mm]                  | 6 ... 12  |
| Connection cross section         | [mm <sup>2</sup> ]    | Max. 1.5  |
| Protection class                 | IP67                  |           |

## Materials

|                   |                             |  |
|-------------------|-----------------------------|--|
| Housing           | Polyamide                   |  |
| Housing colour    | Black                       |  |
| Seals             | Fluoro elastomer            |  |
|                   | Nitrile rubber              |  |
| Pin contact       | Gold-plated copper alloy    |  |
| Union nut         | Nickel-plated die-cast zinc |  |
| Note on materials | Free of copper and PTFE     |  |
|                   | RoHS-compliant              |  |

## Operating and environmental conditions

|   |                             |             |
|---|-----------------------------|-------------|
| Ambient temperature                           | [°C]                        | -25 ... +80 |
| Corrosion resistance class CRC <sup>1)</sup>  | 1                           |             |
| Degree of contamination                       | 3                           |             |
| CE marking<br>(see declaration of conformity) | To EU Low Voltage Directive |             |
| Certification                                 | c CSA us (OL)               |             |

1) Corrosion resistance class 1 according to Festo standard 940 070  
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

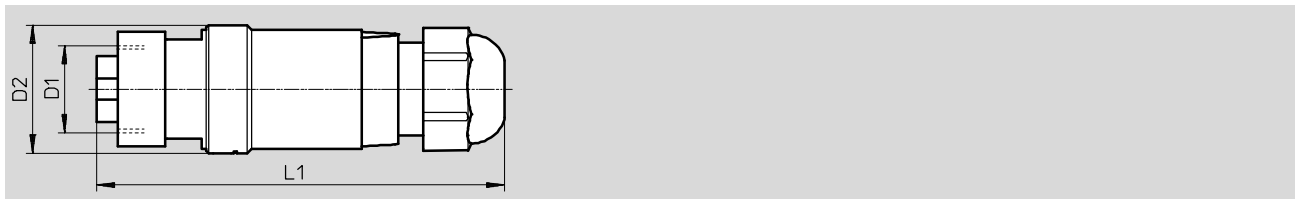
# Universal plug connectors

NECU-G78G4, 7/8", 4-pin – Technical data

**FESTO**

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type          | D1   | D2 | L1 |
|---------------|------|----|----|
| NECU-G78G4-C2 | 7/8" | 28 | 89 |

## Ordering data

| Electrical connection        |                | Connection cross section [mm <sup>2</sup> ] | Part No.      | Type                 |
|------------------------------|----------------|---|---------------|----------------------|
| Socket 7/8", 4-pin, straight | Screw terminal | Max. 1.5                                    | <b>543108</b> | <b>NECU-G78G4-C2</b> |

**Socket  
NECU-G78G5**

- Socket
- 5-pin
- Can be assembled with any cable lengths



## General technical data

|                                  |                       |           |
|----------------------------------|-----------------------|-----------|
| Electrical connection            | Straight socket, 7/8" |           |
|                                  | 5-pin                 |           |
|                                  | Screw terminal        |           |
| Plug coding                      | NFPA/T3.5.29 R1-2003  |           |
| Operating voltage range          | [V DC]                | 0 ... 250 |
|                                  | [V AC]                | 0 ... 250 |
| Surge resistance                 | [kV]                  | 2.5       |
| Acceptable current load at 40 °C | [A]                   | 8         |
| Based on standard                | EN 61984              |           |
| Permissible cable Ø              | [mm]                  | 6 ... 12  |
| Connection cross section         | [mm <sup>2</sup> ]    | Max. 1.5  |
| Protection class                 | IP67                  |           |

## Materials

|                   |                             |
|-------------------|-----------------------------|
| Housing           | Polyamide                   |
| Housing colour    | Black                       |
| Seals             | Fluoro elastomer            |
|                   | Nitrile rubber              |
| Pin contact       | Gold-plated copper alloy    |
| Union nut         | Nickel-plated die-cast zinc |
| Note on materials | Free of copper and PTFE     |
|                   | RoHS-compliant              |

## Operating and environmental conditions

|   |                             |             |
|---|-----------------------------|-------------|
| Ambient temperature                           | [°C]                        | -25 ... +80 |
| Corrosion resistance class CRC <sup>1)</sup>  |                             | 1           |
| Degree of contamination                       |                             | 3           |
| CE marking<br>(see declaration of conformity) | To EU Low Voltage Directive |             |
| Certification                                 | c CSA us (OL)               |             |

1) Corrosion resistance class 1 according to Festo standard 940 070  
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

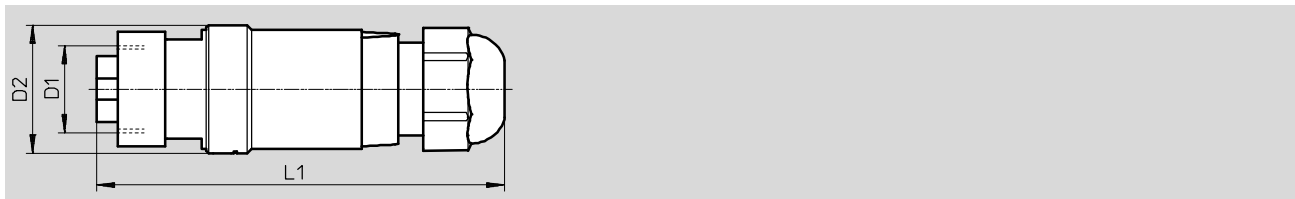
# Universal plug connectors

NECU-G78G5, 7/8", 5-pin – Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type          | D1   | D2 | L1 |
|---------------|------|----|----|
| NECU-G78G5-C2 | 7/8" | 28 | 89 |

## Ordering data

| Electrical connection        |                | Connection cross section<br>[mm <sup>2</sup> ] | Weight<br>[g] | Part No. | Type          |
|------------------------------|----------------|--|---------------|----------|---------------|
| Socket 7/8", 5-pin, straight | Screw terminal | Max. 1.5                                       | 10.9          | 543107   | NECU-G78G5-C2 |

**Plug**  
**NECU-M-PPG5**

- Socket
- 5-pin
- Can be assembled with any cable lengths



### General technical data

|                                  |                                 |                        |
|----------------------------------|---------------------------------|------------------------|
| Electrical connection            | Straight socket, AIDA push-pull |                        |
|                                  |                                 | 5-pin                  |
|                                  |                                 | Spring-loaded terminal |
| Plug coding                      | On contact 2 and 5              |                        |
| Operating voltage range          | [V DC]                          | 0 ... 24               |
| Surge resistance                 | [kV]                            | 2.5                    |
| Acceptable current load at 40 °C | [A]                             | 16                     |
| Based on standard                | EN 61984                        |                        |
| Permissible cable Ø              | [mm]                            | 9 ... 13               |
| Connection cross section         | [mm <sup>2</sup> ]              | 0.75 ... 2.5           |
| Protection class                 | IP65                            |                        |
|                                  | IP67                            |                        |

### Materials

|                   |  |
|-------------------|--|
| Housing           | Nickel-plated die-cast zinc                |
| Housing colour    | Silver                                     |
| Seals             | Nitrile rubber                             |
|                   | Thermoplastic elastomer                    |
| Pin contact       | Nickel-plated and gold-plated copper alloy |
| Note on materials | RoHS-compliant                             |

### Operating and environmental conditions

|  |      |              |
|--|------|--------------|
| Ambient temperature                          | [°C] | -40 ... +100 |
| Corrosion resistance class CRC <sup>1)</sup> |      | 1            |
| Degree of contamination                      |      | 3            |

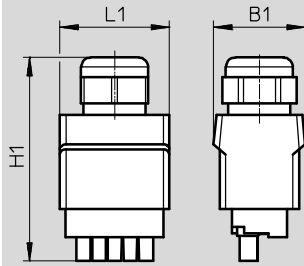
1) Corrosion resistance class CRC 1 to Festo standard FN 940070  
Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

# Universal plug connectors

NECU-M-PPG5, AIDA push-pull 5-pin – Technical data

FESTO

## Dimensions



| Type           | B1 | H1   | L1 |
|----------------|----|------|----|
| NECU-M-PPG5-C1 | 30 | 66.9 | 36 |

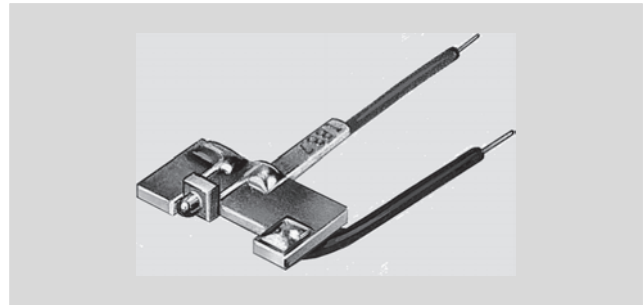
## Ordering data

| Electrical connection                  |                        | Connection cross section<br>[mm <sup>2</sup> ] | Part No.      | Type                  |
|--|------------------------|--|---------------|-----------------------|
| AIDA push-pull socket, 5-pin, straight | Spring-loaded terminal | 0.75 ... 2.5                                   | <b>563059</b> | <b>NECU-M-PPG5-C1</b> |



**Operational status indicator  
SIE-LP-LED-GR**

Used to indicate the ready status of a proximity sensor SIE connected via the angled socket SIE-WD-TR. It does this by illuminating a green LED.



**Ordering data**

| Operating voltage range<br>[V DC] | Ambient temperature<br>[°C] | Part No. | Type          |
|-----------------------------------|-----------------------------|----------|---------------|
| 10 ... 30                         | -25 ... +70                 | 12957    | SIE-LP-LED-GR |

# Universal plug connectors

NEDU-M8, M8, 4-pin – Technical data

FESTO

Push-in T-connector NEDU-M8

• T-adapter



## General technical data

|                              |        |                 |
|------------------------------|--------|-----------------|
| Type of mounting             |        | Screw-in        |
| Mounting position            |        | Any             |
| Connection frequency         |        | 100             |
| Nominal operating voltage    | [V AC] | 32              |
|                              | [V DC] | 32              |
| Operating voltage range      | [V AC] | 32              |
|                              | [V DC] | 32              |
| Acceptable current load      | [A]    | 2               |
| Protection class to EN 60529 |        | IP65, IP67      |
| Electrical connection        |        | To EN 60947-5-2 |
| Max. tightening torque       | [Nm]   | 0.3             |
| Product weight               | [g]    | 9.5             |

## Materials

|                   |  |                                       |
|-------------------|--|---------------------------------------|
| Housing           |  | PA                                    |
| Housing colour    |  | Black                                 |
| Pin contacts      |  | Gold-plated brass                     |
| Union nut         |  | Chrome-plated and nickel-plated brass |
| Note on materials |  | Free of copper and PTFE               |

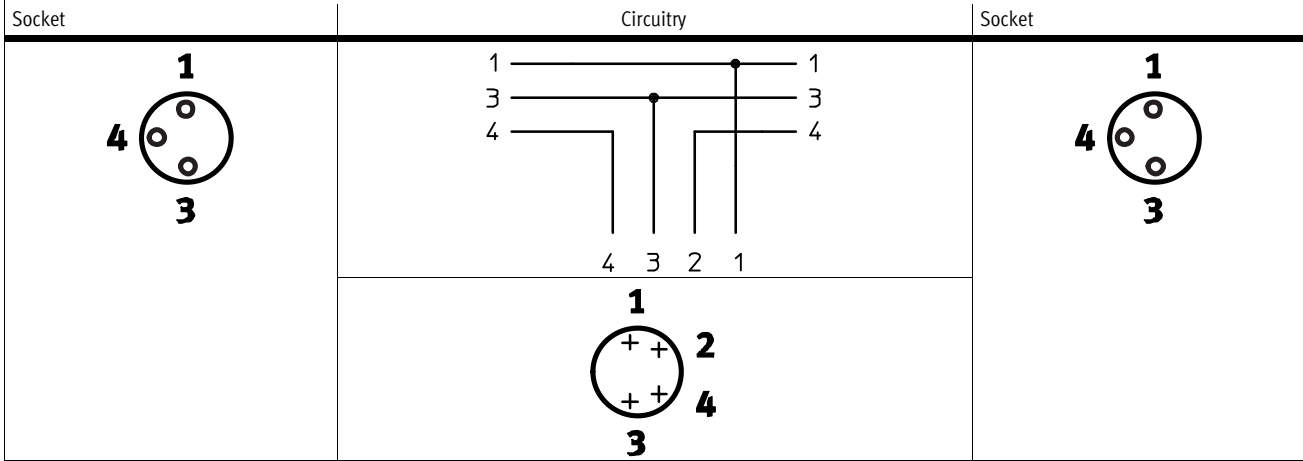
## Operating and environmental conditions

|  |      |             |
|--|------|-------------|
| Ambient temperature                          | [°C] | -25 ... +85 |
| Storage temperature                          | [°C] | -25 ... +85 |
| Corrosion resistance class CRC <sup>1)</sup> |      | 2           |

1) Corrosion resistance class 2 according to Festo standard 940 070

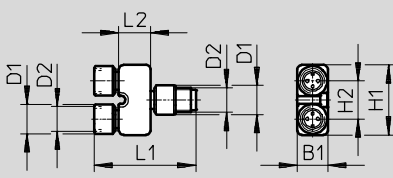
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

## Circuitry (socket/plug view)



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type           | B1 | D1<br>∅ | D2 | H1 | H2   | L1   | L2   |
|----------------|----|---------|----|----|------|------|------|
| NEDU-M8D3-M8T4 | 10 | 9.7     | M8 | 23 | 12.5 | 33.6 | 10.4 |

## Ordering data

| Electrical connection | Part No. | Type           |
|-----------------------|----------|----------------|
| Plug M8, 4-pin        | 544391   | NEDU-M8D3-M8T4 |

# Universal plug connectors

NEDU-L2R1-V8, M12, 3-pin – Technical data

FESTO

## Push-in T-connector NEDU-L2R1-V8

- T-adapter
- For IO-Link



## General technical data

|                                |                                      |
|--------------------------------|--------------------------------------|
| Electrical connection 3        | Straight plug, M12, 3-pin, A-coded   |
| Electrical connection 1        | Straight socket, M12, 5-pin, A-coded |
| Electrical connection 2        | Straight plug, M12, 2-pin, A-coded   |
| Type of mounting               | Screw-in                             |
| Max. tightening torque [Nm]    | 0.6                                  |
| Operating voltage range [V DC] | 0 ... 30                             |
| Surge strength [kV]            | 1.5                                  |
| Acceptable current load [A]    | 4                                    |
| Protection class to EN 60529   | IP65, IP67, in assembled state       |
| Product weight [g]             | 28                                   |

## Materials

|                   |                              |
|-------------------|------------------------------|
| Housing           | TPE-U(PUR)                   |
| Housing colour    | Black                        |
| Union nut         | Die-cast zinc, nickel plated |
| Seals             | FPM                          |
| Pin contacts      | Gold-plated copper alloy     |
| Note on materials | RoHS-compliant               |

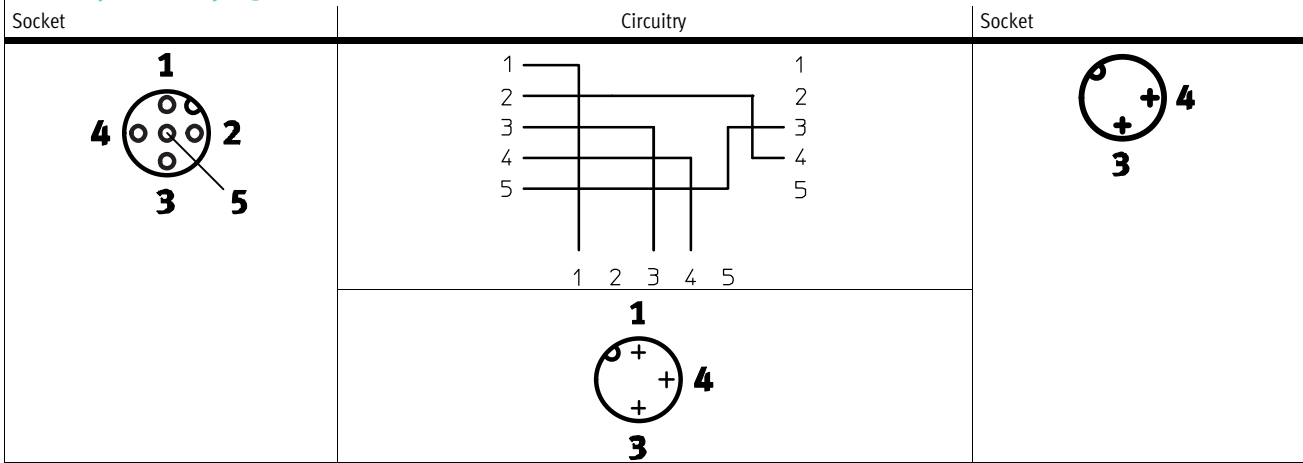
## Operating and environmental conditions

|  |             |
|--|-------------|
| Ambient temperature [°C]                     | -25 ... +85 |
| Corrosion resistance class CRC <sup>1)</sup> | 2           |
| Degree of contamination                      | 3           |

1) Corrosion resistance class 2 according to Festo standard 940 070

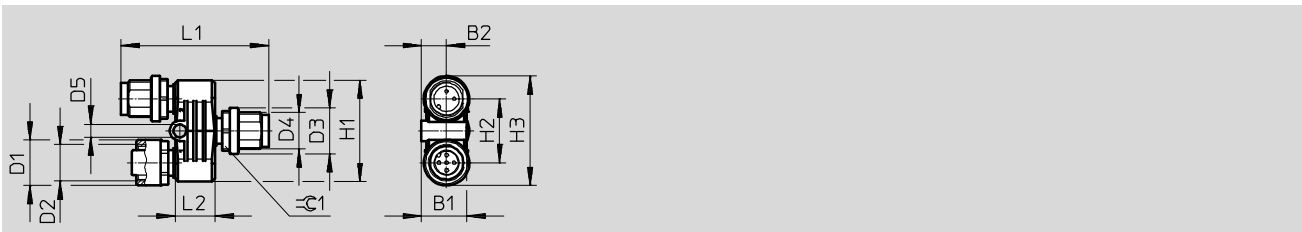
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

## Circuitry (socket/plug view)



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type         | B1 | B2  | D1 | D2  | D3 | D4  | D5  | H1   | H2 | H3 | L1   | L2   | ±1 |
|--------------|----|-----|----|-----|----|-----|-----|------|----|----|------|------|----|
| NEDU-L2R1-V8 | 15 | 8.3 | 15 | M12 | 15 | M12 | 4.2 | 33.3 | 21 | 36 | 48.5 | 13.2 | 13 |

## Ordering data

| Electrical connection                                      | Product weight [g] | Part No.       | Type                            |
|--|--------------------|----------------|---------------------------------|
| Plug M12 A-coded, 3-pin                                    | 28                 | <b>2839846</b> | <b>NEDU-L2R1-V8-M12G5-M12G5</b> |
| 1x socket M12 A-coded, 5-pin<br>1x plug M12 A-coded, 2-pin |                    |                |                                 |

# Universal plug connectors

NEDU-M, M12, 4-pin – Technical data

FESTO

Push-in T-connector NEDU-M

• T-adapter



## General technical data

| Type                         | NEDU-M8D3-M12T4 | NEDU-M12D4-M12T4-IS | NEDU-M12D5-M12T4 |
|------------------------------|-----------------|---------------------|------------------|
| Type of mounting             | Screw-in        | Screw-in            | Screw-in         |
| Mounting position            | Any             | –                   | Any              |
| Connection frequency         | 500             | 100                 | 500              |
| Nominal operating voltage    | [V AC]          | 60                  | –                |
|                              | [V DC]          | 60                  | –                |
| Operating voltage range      | [V AC]          | 60                  | –                |
|                              | [V DC]          | 60                  | 0 ... 30         |
| Acceptable current load      | [A]             | 4                   | –                |
| Protection class to EN 60529 | IP65, IP67      | IP65, IP67          | IP65, IP67       |
| Based on standard            | EN 60947-5-2    | EN 61076-2-101      | EN 60947-5-2     |
| Max. tightening torque       | [Nm]            | 0.3 with M8         | 0.5              |
|                              | [Nm]            | 0.5 with M12        |                  |
| Product weight               | [g]             | 16.9                | 25.5             |

## Materials

| Type              | NEDU-M8D3-M12T4                       | NEDU-M12D4-M12T4-IS                   | NEDU-M12D5-M12T4                      |
|-------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| Housing           | Reinforced TPE-U(PU)                  | Reinforced TPE-U(PU)<br>Die-cast zinc | Reinforced TPE-U(PU)                  |
| Housing colour    | Black                                 | –                                     | Black                                 |
| Pin contacts      | Gold-plated brass                     | Gold-plated copper alloy              | Gold-plated brass                     |
| Union nut         | Chrome-plated and nickel-plated brass | PA reinforced                         | Chrome-plated and nickel-plated brass |
| Seals             | –                                     | FPM                                   | –                                     |
| Note on materials | Free of copper and PTFE               | RoHS-compliant                        | Free of copper and PTFE               |

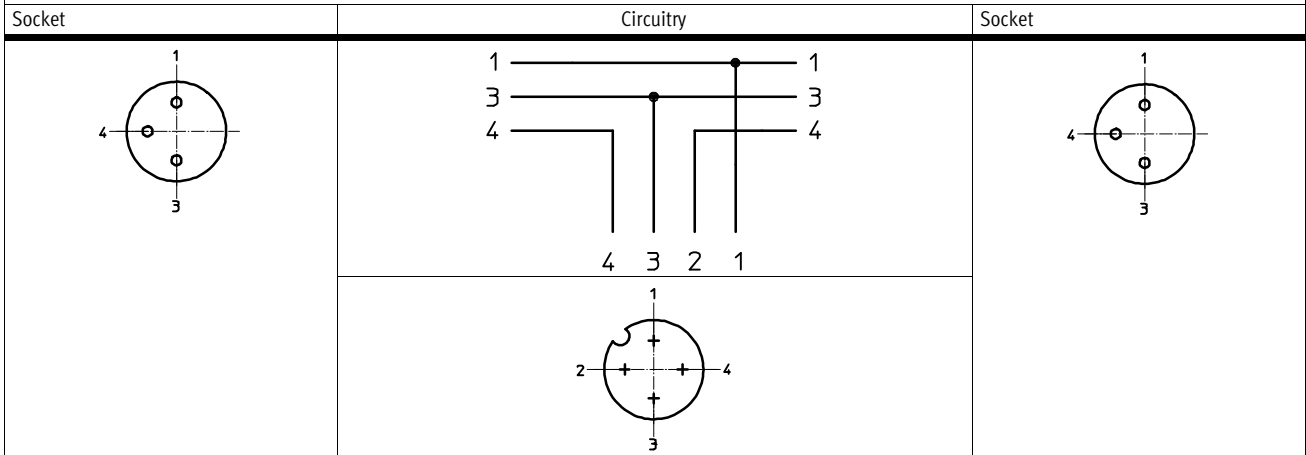
## Operating and environmental conditions

| Type                           | NEDU-M8D3-M12T4 | NEDU-M12D4-M12T4-IS | NEDU-M12D5-M12T4 |
|--------------------------------|-----------------|---------------------|------------------|
| Ambient temperature            | [°C]            | –25 ... +85         | –25 ... +85      |
| Storage temperature            | [°C]            | –25 ... +85         | –25 ... +85      |
| Corrosion resistance class CRC | 2 <sup>1)</sup> | 3 <sup>2)</sup>     | 2 <sup>1)</sup>  |

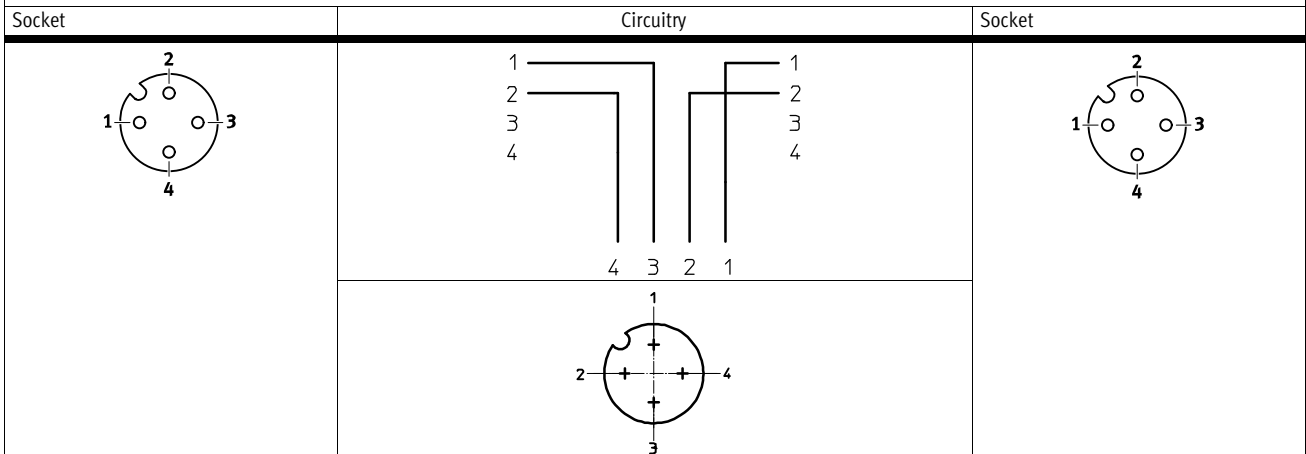
- 1) Corrosion resistance class 2 according to Festo standard 940 070  
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.
- 2) Corrosion resistance class 3 according to Festo standard 940 070  
Components subject to high corrosion stress. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment or media such as solvents and cleaning agents.

## Circuitry (socket/plug view)

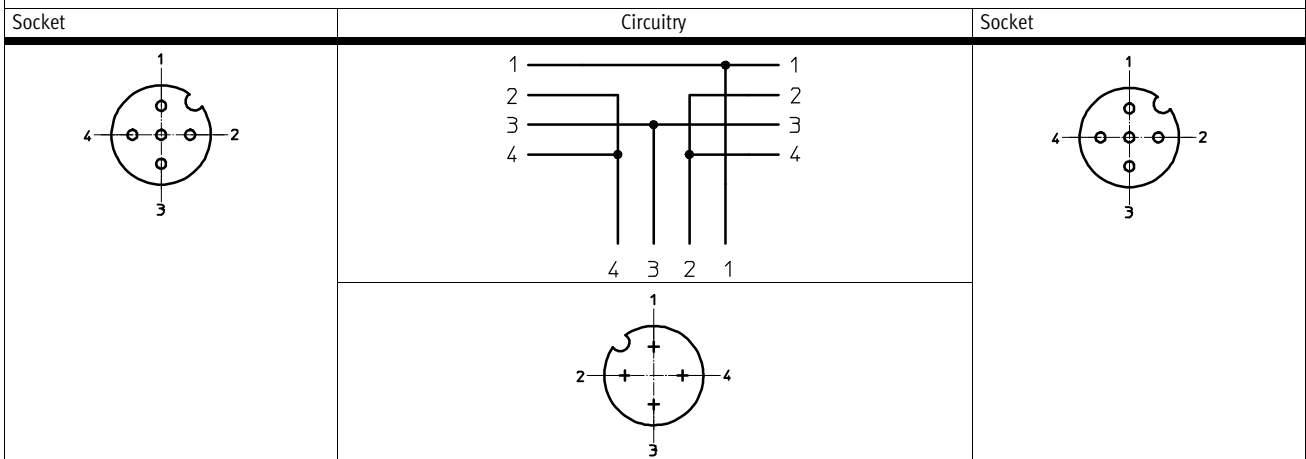
NEDU-M8D3-M12T4



NEDU-M12D4-M12T4-IS



NEDU-M12D5-M12T4



# Universal plug connectors

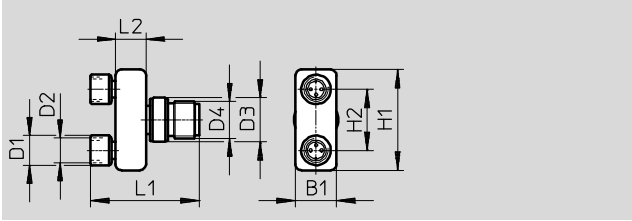
NEDU-M, M12, 4-pin – Technical data

FESTO

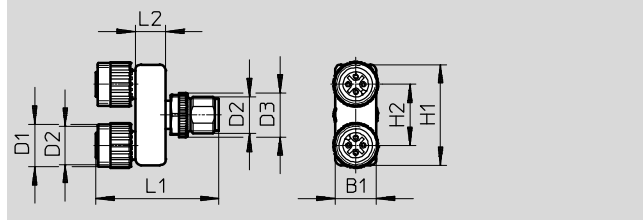
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

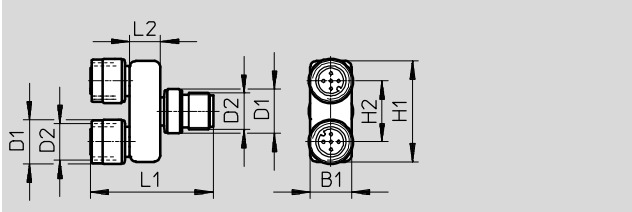
NEDU-M8D3-M12T4



NEDU-M12D4-M12T4-IS



NEDU-M12D5-M12T4



| Type                | B1   | D1<br>∅ | D2  | D3<br>∅ | D4  | H1 | H2 | L1   | L2 |
|---------------------|------|---------|-----|---------|-----|----|----|------|----|
| NEDU-M8D3-M12T4     | 13.5 | 9.7     | M8  | 14.5    | M12 | 33 | 20 | 35.6 | 10 |
| NEDU-M12D4-M12T4-IS | 13.5 | 14      | M12 | 14.4    | –   | 33 | 20 | 40.3 | 10 |
| NEDU-M12D5-M12T4    | 13.5 | 14.5    | M12 | –       | –   | 33 | 20 | 40.3 | 10 |

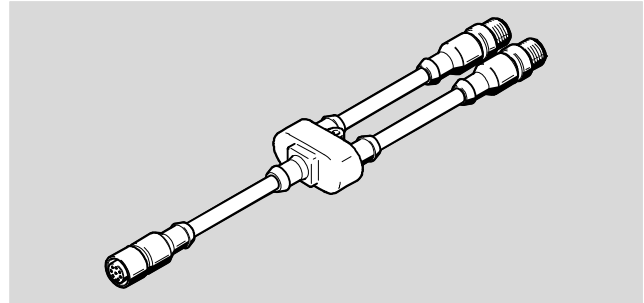
## Ordering data

| Electrical connection    | Part No. | Type                |
|--------------------------|----------|---------------------|
| Plug M12, A-coded, 4-pin | 541597   | NEDU-M8D3-M12T4     |
|                          | 562248   | NEDU-M12D4-M12T4-IS |
|                          | 541596   | NEDU-M12D5-M12T4    |



Connecting cable NEBV-M12G8  
DUO cable NEDU-L1R2-V9

- Y-connecting cable



## General technical data

| Type                         | NEBV-M12G8                           | NEDU-L1R2-V9                 |
|------------------------------|--------------------------------------|------------------------------|
| Conforms to                  | EN 61076-2-101                       | –                            |
| Cable composition            | [mm <sup>2</sup> ] 8x 0.25, screened | 3x 0.25                      |
|                              | [mm <sup>2</sup> ] –                 | 5x 0.25, screened            |
| Cable diameter               | [mm] 6.3                             | 4.5                          |
|                              | [mm] –                               | 5.3                          |
| Cable length                 | [m] 3                                | 2x 5                         |
| Assembly position            | Any                                  | Any                          |
| Operating voltage range      | [V AC] 0 ... 30                      | 0 ... 30                     |
|                              | [V DC] 0 ... 30                      | 0 ... 30                     |
| Surge strength               | [kV] 0.8                             | 0.8                          |
| Acceptable current load      | [A] 1.5                              | –                            |
| at 40 °C                     | [A] 2                                | 2                            |
| Cable characteristics        | Standard                             | –                            |
| Min. cable bending radius    | [mm] 66                              | –                            |
| Protection class to EN 60529 | IP67 in mounted status               | IP65, IP67 in mounted status |

## Materials

| Type                | NEBV-M12G8                           | NEDU-L1R2-V9          |
|---------------------|--------------------------------------|-----------------------|
| Housing             | TPE-U                                | TPE-U(PU), reinforced |
| Housing colour      | –                                    | Black                 |
| Cable sheath        | TPE-U(PUR)                           | TPE-U(PUR)            |
| Cable sheath colour | Grey                                 | Black                 |
| Union nut           | Nickel-plated brass                  | Nickel-plated brass   |
| Seals               | –                                    | FPM                   |
| Plug contacts       | Nickel-plated and gold-plated bronze | –                     |
| Note on materials   | RoHS-compliant                       | RoHS-compliant        |

## Operating and environmental conditions

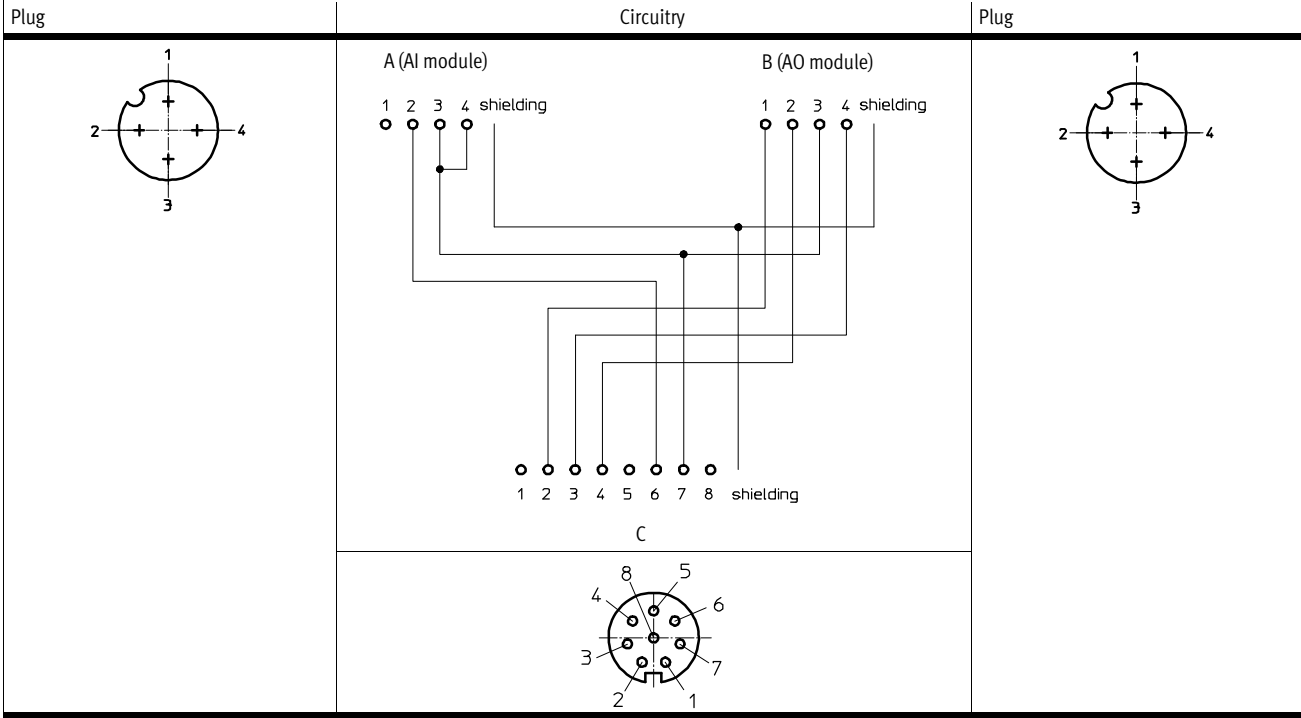
| Type   | NEBV-M12G8       | NEDU-L1R2-V9 |
|--|------------------|--------------|
| Ambient temperature                                  | [°C] –25 ... +85 | –25 ... +80  |
| Ambient temperature with flexible cable installation | [°C] 0 ... +80   | –5 ... +80   |
| Corrosion resistance class CRC <sup>1)</sup>         | –                | 2            |
| Degree of contamination                              | 3                | 3            |

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

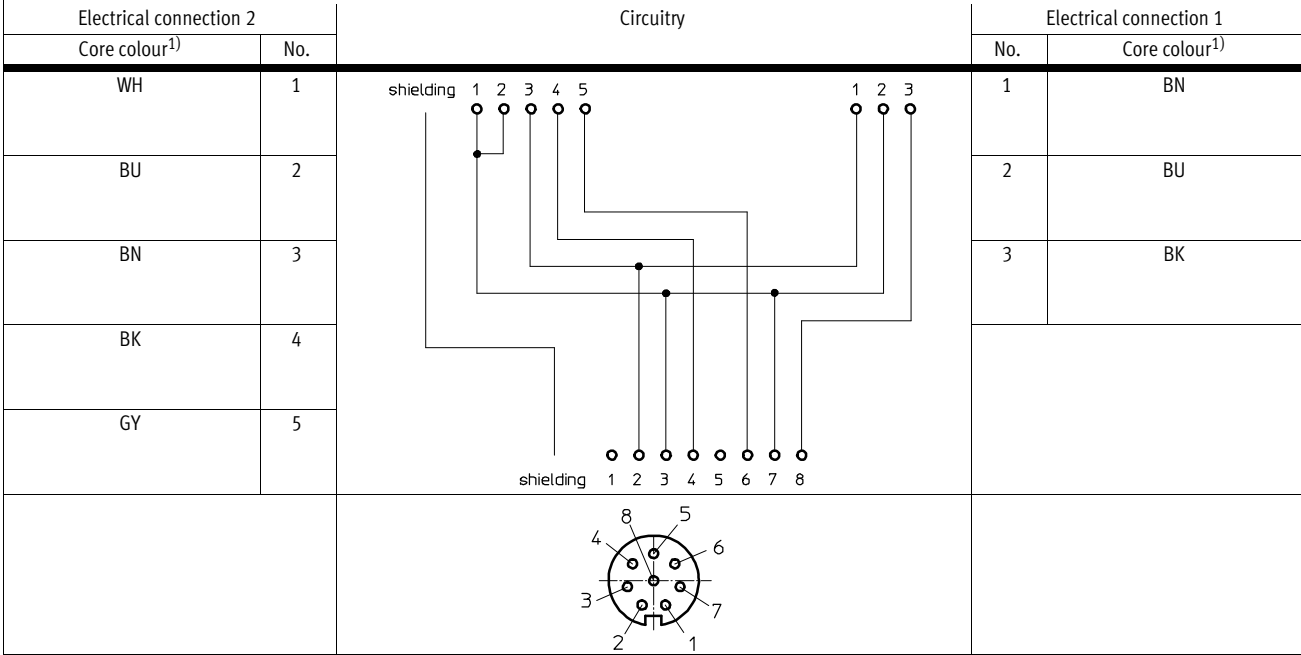
# Universal plug connectors

NEDU-L1R2-V9, DUO cable, socket M12, 8-pin – Technical data

## Circuitry (socket/plug view) – NEBV-M12G8



## Circuitry (socket/plug view) – NEDU-L1R2-V9

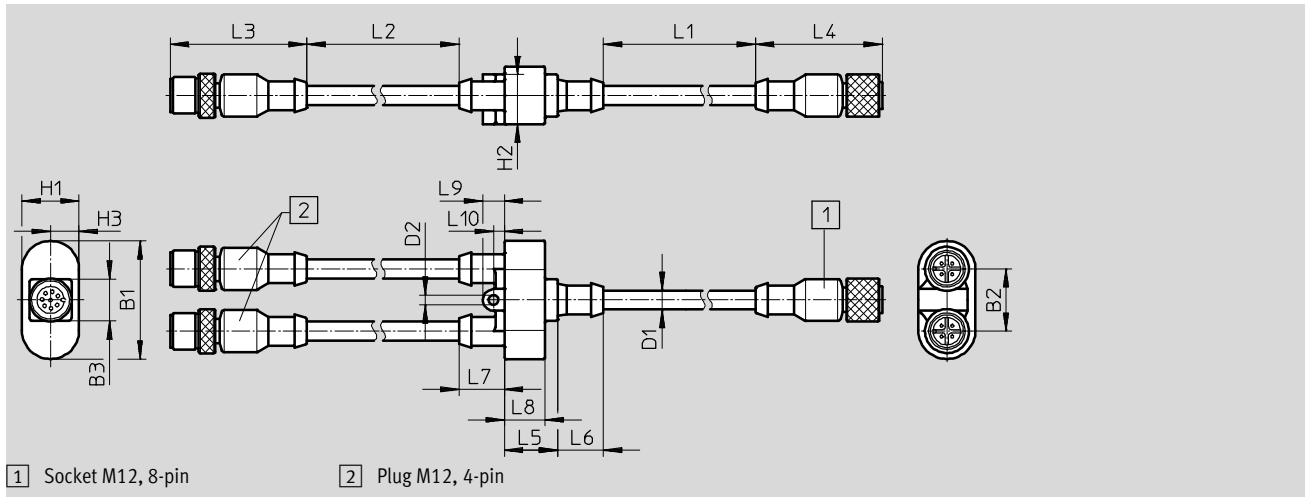


1) To IEC 757

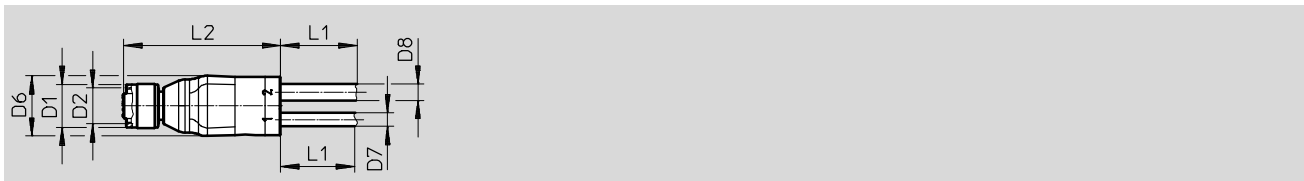
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

### NEBV-M12G8



### NEDU-L1R2-V9



| Type         | B1   | B2   | B3   | D1   | D2  | D6 | D7  | D8  | H1   | H2   | H2  | L1   | L2   | L3   | L4   | L5   | L6 | L7 | L8   | L9  | L10 |
|--------------|------|------|------|------|-----|----|-----|-----|------|------|-----|------|------|------|------|------|----|----|------|-----|-----|
| NEBV-M12G8   | 38.8 | 20.5 | 13.8 | 6.3  | 3.2 | -  | -   | -   | 18.8 | 16.3 | 9.4 | 2500 | 500  | 44.9 | 41.7 | 17.5 | 15 | 15 | 13.3 | 7.1 | 3.6 |
| NEDU-L1R2-V9 | -    | -    | -    | 14.5 | M12 | 20 | 4.5 | 5.3 | -    | -    | -   | 5000 | 51.6 | -    | -    | -    | -  | -  | -    | -   | -   |

## Ordering data

| Electrical connection      |  | Product weight [g] | Part No.       | Type  |
|----------------------------|--|--------------------|----------------|---|
| Socket M12, 8-pin          | <ul style="list-style-type: none"> <li>Plug M12, 4-pin</li> <li>Plug M12, 4-pin</li> </ul>               | 247                | <b>547888</b>  | <b>NEBV-M12G8-KD-3-M12G4</b>                |
| Socket M12, 8-pin, A-coded | <ul style="list-style-type: none"> <li>Open cable end, 3-core</li> <li>Open cable end, 5-core</li> </ul> | 377                | <b>2903567</b> | <b>NEDU-L1R2-V9-M12G8-E-LE5-5R1-LE3-5R2</b> |

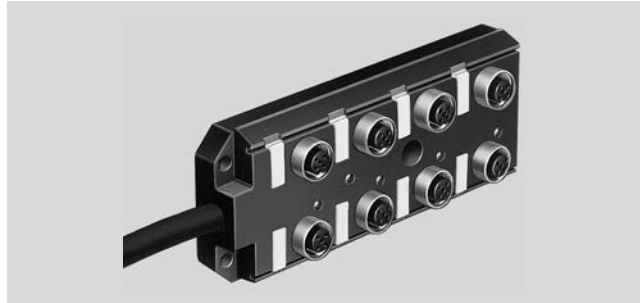
# Universal plug connectors

MPV, open cable end 11-wire, socket M12, 5-pin – Technical data

FESTO

## Multi-pin plug distributor MPV

- Multi-pin plug distributor



### General technical data

|  |                        |
|--|------------------------|
| Electrical connection technology for I/O | M12, 5-pin             |
| Type of mounting                         | Via through-hole       |
| Operating voltage range [V DC]           | 10 ... 30              |
| Acceptable current load [A]              | 12                     |
| Acceptable current load per slot [A]     | 4                      |
| Protection class to EN 60529             | IP67 in mounted status |

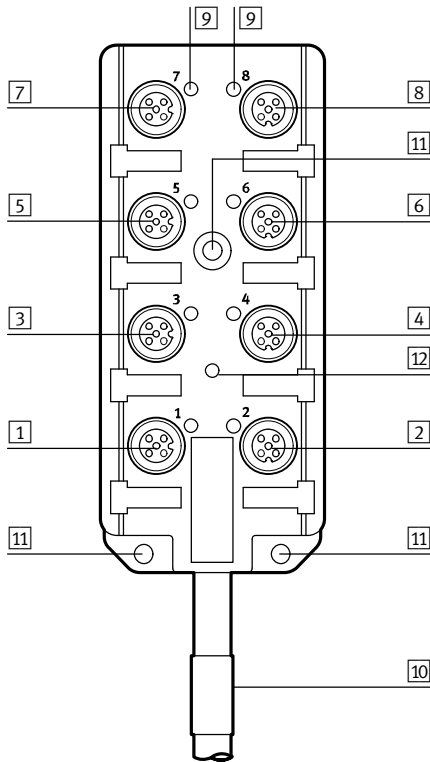
### Materials

|              |                  |
|--------------|------------------|
| Housing      | TPE-U (PU)       |
| Cable sheath | TPE-U (PU)       |
| Socket       | Galvanized brass |

### Operating and environmental conditions

|                          |             |
|--------------------------|-------------|
| Ambient temperature [°C] | -20 ... +80 |
|--------------------------|-------------|

## Connection and display components



- 1 Sensor connection, location 1
- 2 Sensor connection, location 2
- 3 Sensor connection, location 3
- 4 Sensor connection, location 4
- 5 Sensor connection, location 5
- 6 Sensor connection, location 6
- 7 Sensor connection, location 7
- 8 Sensor connection, location 8
- 9 Green LED for status display (one LED per input)
- 10 Multi-pin plug connection/  
multi-pin cable
- 11 Mounting holes
- 12 Ready status display

## Circuitry (socket/plug view)

| Individual connection |          | Allocation | Multi-pin plug connection |                           | Allocation | Individual connection |          |   |   |
|-----------------------|----------|------------|---------------------------|---------------------------|------------|-----------------------|----------|---|---|
|                       | Location |            | Pin                       | Wire colour <sup>1)</sup> |            | Pin                   | Location |   |   |
|                       | 1        | 1          | 24 DC V                   | BN                        | BN         | 24 DC V               | 2        |   |   |
|                       |          | 2          | n.c.                      | –                         | –          | n.c.                  |          |   | 2 |
|                       |          | 3          | 0 V                       | BU                        | BU         | 0 V                   |          |   | 3 |
|                       |          | 4          | Input 1                   | WH                        | GN         | Input 2               |          |   | 4 |
|                       |          | 5          | PU                        | GN YE                     | GN YE      | PU                    |          |   | 5 |
|                       | 3        | 1          | 24 DC V                   | BN                        | BN         | 24 DC V               | 1        | 4 |   |
|                       |          | 2          | n.c.                      | –                         | –          | n.c.                  | 2        |   |   |
|                       |          | 3          | 0 V                       | BU                        | BU         | 0 V                   | 3        |   |   |
|                       |          | 4          | Input 3                   | YE                        | GY         | Input 4               | 4        |   |   |
|                       |          | 5          | PU                        | GN YE                     | GN YE      | PU                    | 5        |   |   |
|                       | 5        | 1          | 24 DC V                   | BN                        | BN         | 24 DC V               | 1        | 6 |   |
|                       |          | 2          | n.c.                      | –                         | –          | n.c.                  | 2        |   |   |
|                       |          | 3          | 0 V                       | BU                        | BU         | 0 V                   | 3        |   |   |
|                       |          | 4          | Input 5                   | PK                        | RD         | Input 6               | 4        |   |   |
|                       |          | 5          | PU                        | GN YE                     | GN YE      | PU                    | 5        |   |   |
|                       | 7        | 1          | 24 DC V                   | BN                        | BN         | 24 DC V               | 1        | 8 |   |
|                       |          | 2          | n.c.                      | –                         | –          | n.c.                  | 2        |   |   |
|                       |          | 3          | 0 V                       | BU                        | BU         | 0 V                   | 3        |   |   |
|                       |          | 4          | Input 7                   | BK                        | VT         | Input 8               | 4        |   |   |
|                       |          | 5          | PU                        | GN YE                     | GN YE      | PU                    | 5        |   |   |

1) To IEC 757

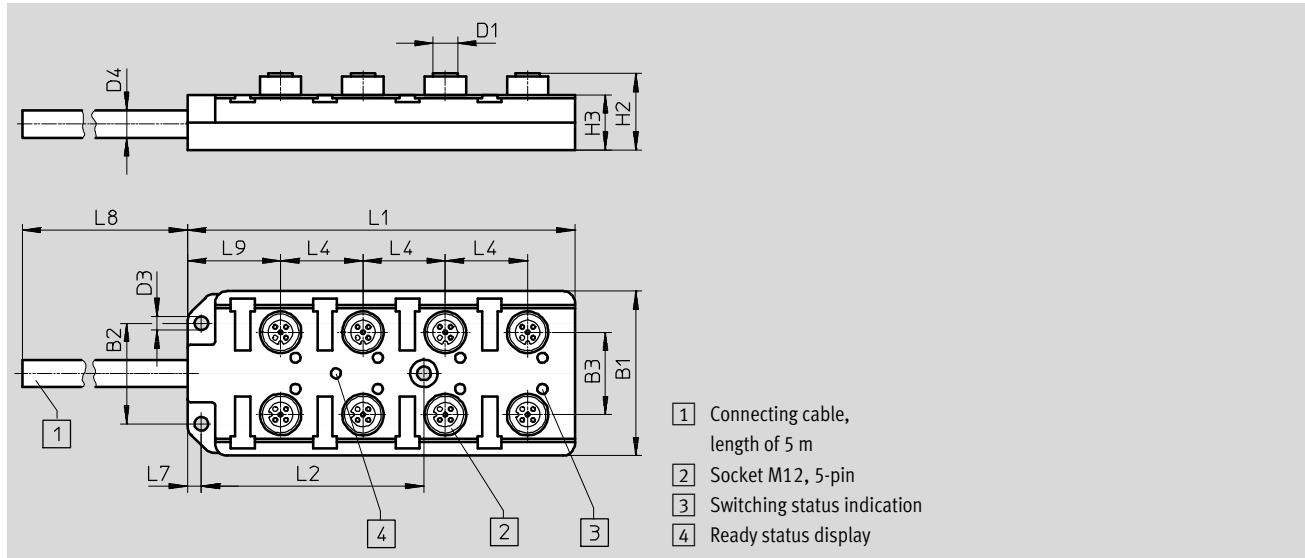
# Universal plug connectors

MPV, open cable end 11-wire, socket M12, 5-pin – Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)




| Type          | B1 | B2 | B3 | D1  | D3<br>∅ | D4<br>∅ | H2 | H3 | L1  | L2 | L4 | L7  | L8   | L9   |
|---------------|----|----|----|-----|---------|---------|----|----|-----|----|----|-----|------|------|
| MPV-E/A08-M12 | 54 | 33 | 27 | M12 | 4.5     | 9       | 25 | 18 | 127 | 73 | 27 | 4.5 | 5000 | 30.5 |

## Ordering data

| Electrical connection  | Weight<br>[g] | Part No. | Type          |
|------------------------|---------------|----------|---------------|
| Open cable end, 11-pin | 200           | 177671   | MPV-E/A08-M12 |

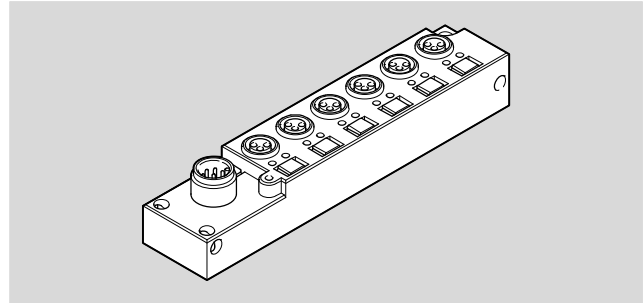
## Ordering data – Accessories

| Designation  | Part No.            | Type           |
|--|---------------------|----------------|
| Cover cap  |                     |                |
|  Cover cap for sealing unused sockets (10 pieces) | For M12 connections | 165592 ISK-M12 |

6

## Multi-pin plug distributor NEDU-L

- Multi-pin plug distributor
- Particularly compact



## General technical data

|                                      |                            |
|--------------------------------------|----------------------------|
| Electrical connection                | Straight plug, M12, 8-pin  |
|                                      | Straight socket, M8, 3-pin |
| Mounting position                    | Any                        |
| Operating voltage range [V DC]       | 10 ... 30                  |
| Acceptable current load [A]          | 3                          |
| Acceptable current load per slot [A] | 2                          |
| Ready status display                 | Green LED                  |
| Status display                       | Yellow LED                 |
| Protection class to EN 60529         | IP68                       |

## Materials

|  |                               |
|--|-------------------------------|
| Housing                                      | PBT, reinforced               |
| Housing colour                               | Grey                          |
| Seals  | FPM                           |
| Pin contacts                                 | Nickel-plated and gold-plated |
| Socket                                       | Nickel-plated brass           |
| Corrosion resistance class CRC <sup>1)</sup> | 3                             |

1) Corrosion resistance class 3 according to Festo standard 940 070  
Components subject to high corrosion stress. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment or media such as solvents and cleaning agents.

## Operating and environmental conditions

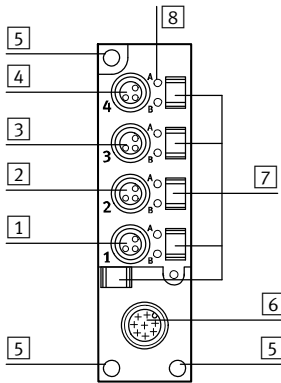
|                          |             |
|--------------------------|-------------|
| Ambient temperature [°C] | −20 ... +80 |
|--------------------------|-------------|

# Universal plug connectors

NEDU-L, plug M12, 8-pin, socket M8, 3-pin – Technical data

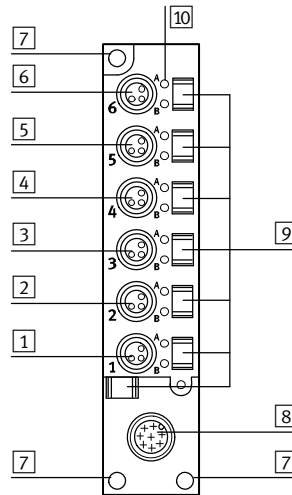
## Connection and display components

NEDU-L4R1-M8G3L-M12G8



- 1 Sensor connection, location 1
- 2 Sensor connection, location 2
- 3 Sensor connection, location 3
- 4 Sensor connection, location 4
- 5 Mounting holes
- 6 Multi-pin plug connection
- 7 Holder for inscription label (ASLR-L-55)
- 8 LED for status display

NEDU-L6R1-M8G3L-M12G8



- 1 Sensor connection, location 1
- 2 Sensor connection, location 2
- 3 Sensor connection, location 3
- 4 Sensor connection, location 4
- 5 Sensor connection, location 5
- 6 Sensor connection, location 6
- 7 Mounting holes
- 8 Multi-pin plug connection
- 9 Holder for inscription label (ASLR-L-55)
- 10 LED for status display

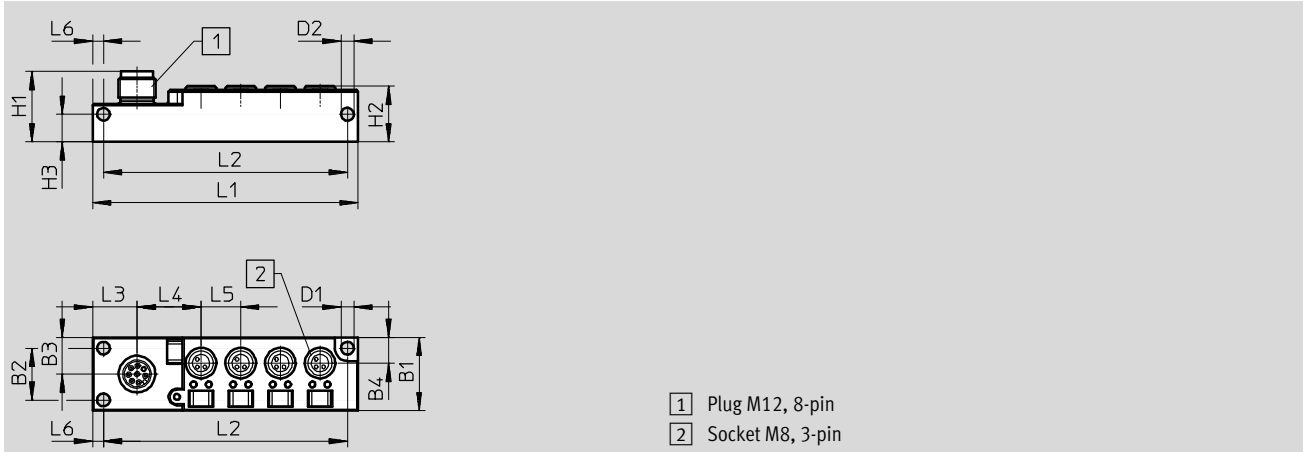
## Circuitry (socket/plug view)

| Individual connection |          |     | Allocation | Multi-pin plug connection |  |
|-----------------------|----------|-----|------------|---------------------------|--|
|                       | Location | Pin |            | Pin                       |  |
|                       | 1        | 1   | +UB        | 5                         |  |
|                       |          | 3   | -UB        | 7                         |  |
|                       |          | 4   | Input 1    | 1                         |  |
|                       | 2        | 1   | +UB        | 5                         |  |
|                       |          | 3   | -UB        | 7                         |  |
|                       |          | 4   | Input 2    | 2                         |  |
|                       | 3        | 1   | +UB        | 5                         |  |
|                       |          | 3   | -UB        | 7                         |  |
|                       |          | 4   | Input 3    | 3                         |  |
|                       | 4        | 1   | +UB        | 5                         |  |
|                       |          | 3   | -UB        | 7                         |  |
|                       |          | 4   | Input 4    | 4                         |  |
|                       | 5        | 1   | +UB        | 5                         |  |
|                       |          | 3   | -UB        | 7                         |  |
|                       |          | 4   | Input 5    | 6                         |  |
|                       | 6        | 1   | +UB        | 5                         |  |
|                       |          | 3   | -UB        | 7                         |  |
|                       |          | 4   | Input 6    | 8                         |  |



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type                  | B1 | B2 | B3 | B4  | D1<br>∅ | D2<br>∅ | H1 | H2   | H3 | L1  | L2  | L3   | L4 | L5 | L6  |
|-----------------------|----|----|----|-----|---------|---------|----|------|----|-----|-----|------|----|----|-----|
| NEDU-L4R1-M8G3L-M12G8 | 24 | 17 | 12 | 8.4 | 4.2     | 4.2     | 23 | 18.2 | 9  | 87  | 80  | 14.5 | 21 | 13 | 3.5 |
| NEDU-L6R1-M8G3L-M12G8 | 24 | 17 | 12 | 8.4 | 4.2     | 4.2     | 23 | 18.2 | 9  | 113 | 106 | 14.5 | 21 | 13 | 3.5 |

## Ordering data

| Electrical connection | Weight<br>[g]        | Part No. | Type                                |
|-----------------------|----------------------|----------|-------------------------------------|
| Plug M12, 8 pin       | 4x socket, M8, 3-pin | 58       | <b>574586</b> NEDU-L4R1-M8G3L-M12G8 |
|                       | 6x socket, M8, 3-pin | 74       | <b>574587</b> NEDU-L6R1-M8G3L-M12G8 |

## Ordering data – Accessories

| Designation                                | Part No.   | Type                              |                                  |
|--|--|-----------------------------------|----------------------------------|
| <b>Connecting cable</b>                    |  |                                   |                                  |
|  | Socket M12, 8-pin, angled                        | Open cable end, 8-wire            |                                  |
|  |  | Length: 2 m                       | <b>542256</b> NEBU-M12W8-2-N-LE8 |
|  |  | Length: 5 m                       | <b>542257</b> NEBU-M12W8-5-N-LE8 |
|  | Socket M12, 8-pin, straight                      | Open cable end, 8-wire            |                                  |
|  |  | Length: 2 m                       | <b>525616</b> SIM-M12-8GD-2-PU   |
|  |  | Length: 5 m                       | <b>525618</b> SIM-M12-8GD-5-PU   |
| Plug M12, 8-pin, straight                  | Length: 10 m                                     | <b>570007</b> NEBU-M12W8-10-N-LE8 |                                  |
|  | Length: 2 m                                      | <b>570008</b> SIM-M12-8GD-10-PU   |                                  |
|  | Cover cap for sealing unused sockets (10 pieces) | For M12 connections               |                                  |
|  |  | <b>525617</b> KM12-8GD8GS-2-PU    |                                  |
| <b>Cover cap</b>                           |  |                                   |                                  |
|  |  |                                   |                                  |
| <b>Inscription label</b>                   |  |                                   |                                  |
| Inscription labels in frames, pack of 1000 |  | 5x5 mm                            |                                  |
|  |  | <b>574590</b> ASLR-L-55           |                                  |

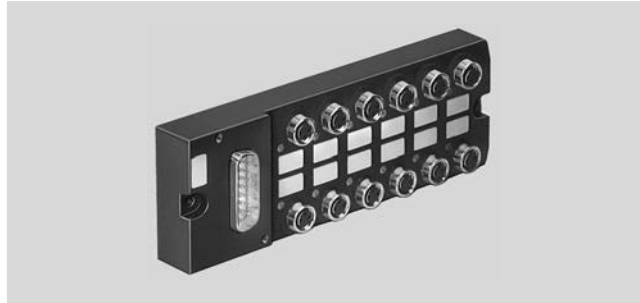
# Universal plug connectors

MPV, plug Sub-D, 15-pin, socket M8, 3-pin – Technical data

FESTO

## Multi-pin plug distributor MPV

- Multi-pin plug distributor



### General technical data

|  |                                   |
|--|-----------------------------------|
| Electrical connection technology for I/O | M8, 3-pin                         |
| Type of mounting                         | Either via H-rail or through-hole |
| Operating voltage range [V DC]           | 10 ... 30                         |
| Acceptable current load [A]              | 4                                 |
| Acceptable current load per slot [A]     | 1                                 |
| Protection class to EN 60529             | IP65 in mounted status            |

### Materials

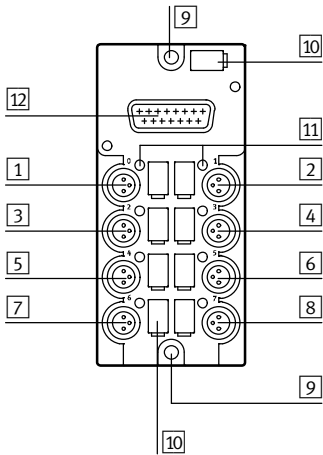
|         |                |
|---------|----------------|
| Housing | Reinforced PA6 |
| Socket  | Brass          |

### Operating and environmental conditions

|                          |             |
|--------------------------|-------------|
| Ambient temperature [°C] | -20 ... +80 |
|--------------------------|-------------|

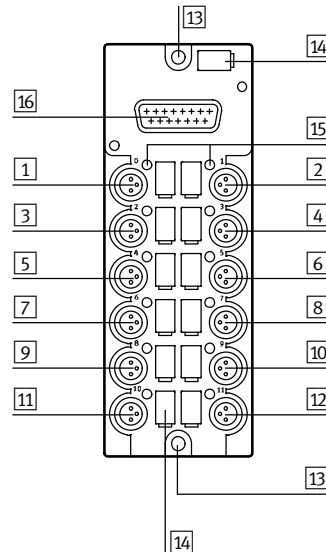
## Connection and display components

MPV-E/A08-M8



- 1 Sensor connection, location 1
- 2 Sensor connection, location 2
- 3 Sensor connection, location 3
- 4 Sensor connection, location 4
- 5 Sensor connection, location 5
- 6 Sensor connection, location 6
- 7 Sensor connection, location 7
- 8 Sensor connection, location 8
- 9 Mounting holes
- 10 Holder for inscription label (IBS-6x10)
- 11 LED for status display
- 12 Multi-pin plug connection

MPV-E/A12-M8



- 1 Sensor connection, location 1
- 2 Sensor connection, location 2
- 3 Sensor connection, location 3
- 4 Sensor connection, location 4
- 5 Sensor connection, location 5
- 6 Sensor connection, location 6
- 7 Sensor connection, location 7
- 8 Sensor connection, location 8
- 9 Sensor connection, location 9
- 10 Sensor connection, location 10
- 11 Sensor connection, location 11
- 12 Sensor connection, location 12
- 13 Mounting holes
- 14 Holder for inscription label (IBS-6x10)
- 15 LED for status display
- 16 Multi-pin plug connection

## Circuitry (socket/plug view)

| Individual connection |          | Allocation          |                    | Multi-pin plug connection |                     | Allocation |                    | Individual connection |          |   |
|-----------------------|----------|---------------------|--------------------|---------------------------|---------------------|------------|--------------------|-----------------------|----------|---|
|                       | Location | Pin                 |                    | Pin                       |                     | Pin        |                    | Pin                   | Location |   |
|                       | 1        | 1                   | 24 DC V            | 13                        |                     | 13         | 24 DC V            | 1                     | 2        |   |
|                       |          | 3                   | 0 V                | 14/15                     |                     | 14/15      | 0 V                | 3                     |          |   |
|                       |          | 4                   | Input <sub>1</sub> | 1                         |                     | 2          | Input <sub>2</sub> | 4                     |          |   |
|                       | 3        | 1                   | 24 DC V            | 13                        |                     | 13         | 24 DC V            | 1                     | 4        | 4 |
|                       |          | 3                   | 0 V                | 14/15                     |                     | 14/15      | 0 V                | 3                     |          |   |
|                       |          | 4                   | Input <sub>3</sub> | 3                         |                     | 4          | Input <sub>4</sub> | 4                     |          |   |
|                       | 5        | 1                   | 24 DC V            | 13                        |                     | 13         | 24 DC V            | 1                     | 6        | 6 |
|                       |          | 3                   | 0 V                | 14/15                     |                     | 14/15      | 0 V                | 3                     |          |   |
|                       |          | 4                   | Input <sub>5</sub> | 5                         |                     | 6          | Input <sub>6</sub> | 4                     |          |   |
|                       | 7        | 1                   | 24 DC V            | 13                        |                     | 13         | 24 DC V            | 1                     | 8        | 8 |
|                       |          | 3                   | 0 V                | 14/15                     |                     | 14/15      | 0 V                | 3                     |          |   |
|                       |          | 4                   | Input <sub>7</sub> | 7                         |                     | 8          | Input <sub>8</sub> | 4                     |          |   |
| 9                     | 1        | 24 DC V             | 13                 | 13                        | 24 DC V             | 1          | 10                 | 10                    |          |   |
|                       | 3        | 0 V                 | 14/15              | 14/15                     | 0 V                 | 3          |                    |                       |          |   |
|                       | 4        | Input <sub>9</sub>  | 9                  | 10                        | Input <sub>10</sub> | 4          |                    |                       |          |   |
| 11                    | 1        | 24 DC V             | 13                 | 13                        | 24 DC V             | 1          | 12                 | 12                    |          |   |
|                       | 3        | 0 V                 | 14/15              | 14/15                     | 0 V                 | 3          |                    |                       |          |   |
|                       | 4        | Input <sub>11</sub> | 11                 | 12                        | Input <sub>12</sub> | 4          |                    |                       |          |   |

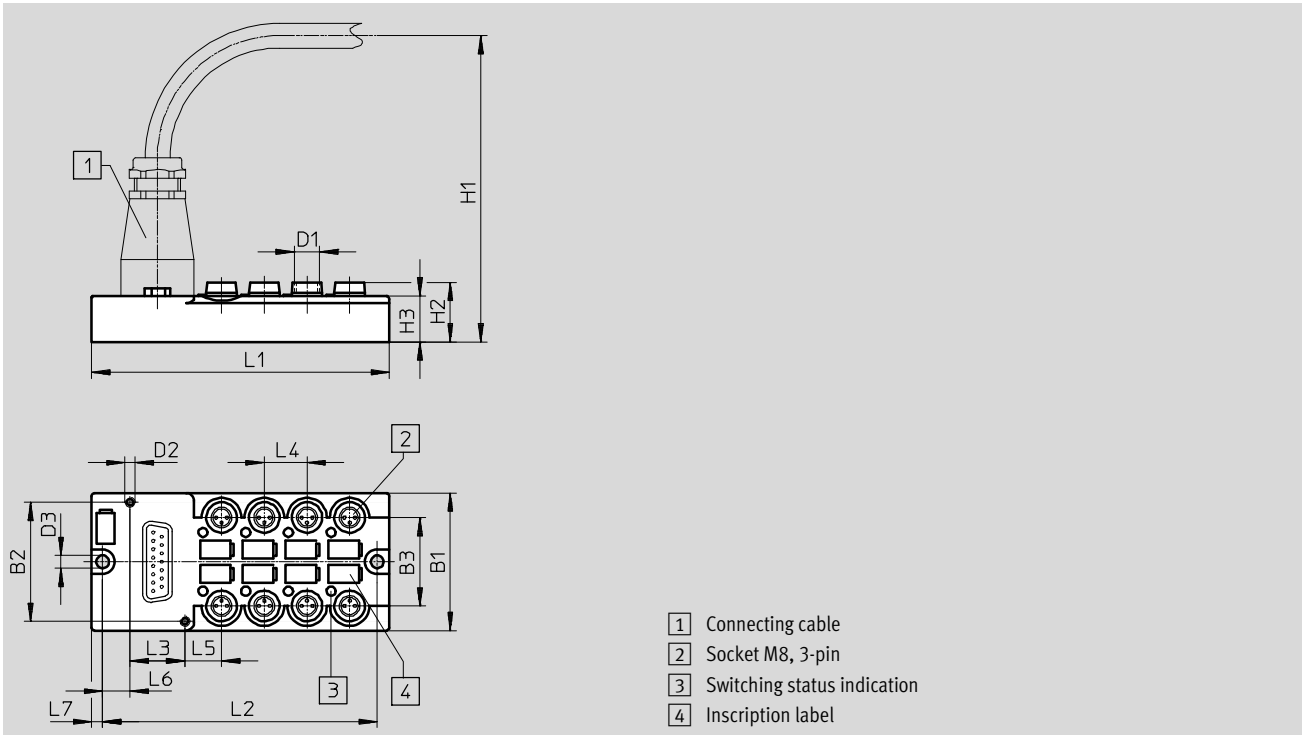
# Universal plug connectors

MPV, plug Sub-D, 15-pin, socket M8, 3-pin – Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

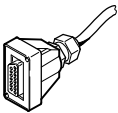
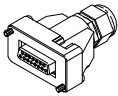

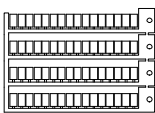


| Type         | B1 | B2 | B3 | D1 | D2 | D3<br>Ø | H1  | H2   | H3 | L1  | L2  | L3 | L4 | L5 | L6 | L7 |
|--------------|----|----|----|----|----|---------|-----|------|----|-----|-----|----|----|----|----|----|
| MPV-E/A08-M8 | 45 | 39 | 29 | M8 | M3 | 4.2     | 126 | 19.5 | 15 | 98  | 90  | 18 | 14 | 12 | 9  | 4  |
| MPV-E/A12-M8 | 45 | 39 | 29 | M8 | M3 | 4.2     | 126 | 19.5 | 15 | 126 | 118 | 18 | 14 | 12 | 9  | 4  |

## Ordering data

| Electrical connection |              | Weight [g] | Part No.      | Type                |
|-----------------------|--------------|------------|---------------|---------------------|
| Plug Sub-D, 15-pin    | Socket M8x8  | 100        | <b>177669</b> | <b>MPV-E/A08-M8</b> |
|                       | Socket M8x12 | 120        | <b>177670</b> | <b>MPV-E/A12-M8</b> |

## Ordering data – Accessories

| Designation   |  |                    | Part No.      | Type                    |
|---|--|--------------------|---------------|-------------------------|
| <b>Multi-pin plug connection</b>  |  |                    |               |                         |
|    | Plug socket with cable <ul style="list-style-type: none"> <li>• Socket Sub-D, 15-pin</li> <li>• Open cable end, 15-wire</li> </ul> | 5 m                | <b>177673</b> | <b>KMPV-SUB-D-15-5</b>  |
|   |  | 10 m               | <b>177674</b> | <b>KMPV-SUB-D-15-10</b> |
|    | Socket Sub-D, 15-pin   |                    | <b>177675</b> | <b>SD-SUB-D-BU15</b>    |
| <b>Cover cap</b>  |  |                    |               |                         |
|    | Cover cap for sealing unused sockets (10 pieces)   | For M8 connections | <b>177672</b> | <b>ISK-M8</b>           |
| <b>Inscription label</b>  |  |                    |               |                         |
|  | Inscription labels in frames, pack of 64   | 6x10 mm            | <b>18576</b>  | <b>IBS-6x10</b>         |

# Universal plug connectors

SEA – Product range overview

FESTO

| Function                    | Electrical connection | Type           | Cable connector | Version   | → Page/Internet |
|-----------------------------|-----------------------|----------------|-----------------|---|-----------------|
| <b>Round plug connector</b> | <b>Plug</b>           |                |                 |   |                 |
|                             | M8, 3-pin             | SEA-3GS-M8-S   | Pg7             | Straight/<br>screw terminal                       | 231             |
|                             |                       | SEA-GS-M8      | Pg7             | Straight/<br>solder lug                           | 231             |
|                             | M12, 4-pin            | SEA-GS-7       | Pg7             | Straight/<br>screw terminal                       | 233             |
|                             |                       | SEA-GS-9       | Pg9             | Straight/<br>screw terminal                       | 233             |
|                             |                       | SEA-GS-11-DUO  | Pg11            | Straight/<br>screw terminal                       | 233             |
|                             |                       | SEA-GS-HAR     | Pg9             | Straight/<br>insulation displacement<br>connector | 233             |
|                             |                       | SEA-4GS-7-2,5  | Pg7             | Straight/<br>screw terminal                       | 233             |
|                             | M12, 5-pin            | SAE-M12-5GS    | Pg7             | Straight/<br>screw terminal                       | 235             |
|                             |                       | SEA-5GS-11-DUO | Pg11            | Straight/<br>screw terminal                       | 235             |
|                             | <b>Plug socket</b>    |                |                 |   |                 |
|                             | M12, 4-pin            | SAE-M12-4WD    | Pg7             | Angled/<br>screw terminal                         | 237             |

**Plug**  
**SEA-GS-M8**

- Sensor plug/socket for inputs/ outputs
- Can be assembled with any cable lengths
- 3-pin
- With screw terminals or soldered connection
- Wire cross section up to 0.5 mm<sup>2</sup>



## General technical data

| Type                                   | SEA-GS-M8                  | SEA-3GS-M8-S     |
|--|----------------------------|------------------|
| Electrical connection                  | Straight plug, 3-pin, M8x1 |                  |
|  | Solder lug                 | Screw terminal   |
| Type of mounting                       | Via threaded sleeve        |                  |
| Mounting position                      | Any                        |                  |
| Max. tightening torque of locking clip | [Nm]                       | 0.3              |
| Permissible cable diameter             | [mm]                       | 3.5 ... 5        |
| Connection cross section               | [mm <sup>2</sup> ]         | 0.25             |
| Acceptable current load at 40 °C       | [A]                        | 3                |
| Surge resistance                       | [kV]                       | 1.5              |
| Operating voltage range                | [V AC]                     | 60               |
|  | [V DC]                     | 60               |
| Protection class to EN 60529           | IP67 (assembled)           | IP65 (assembled) |
| Based on standard                      | EN 61076-2-101, EN 61984   |                  |

## Materials

| Type                                   | SEA-GS-M8           | SEA-3GS-M8-S                      |
|--|---------------------|-----------------------------------|
| Housing colour                         | Black               |                                   |
| Housing material                       | PA                  |                                   |
| Contact material                       | Gold-plated brass   |                                   |
| Union nut material                     | Nickel-plated brass | Nickel-plated/chrome-plated brass |
| Note on materials                      | RoHS-compliant      |                                   |
| Max. tightening torque of locking clip | [Nm]                | 0.3                               |

## Operating and environmental conditions

|  |      |                             |
|--|------|-----------------------------|
| Ambient temperature                          | [°C] | -40 ... +85                 |
| Corrosion resistance class CRC <sup>1)</sup> |      | 2                           |
| CE marking (see declaration of conformity)   |      | To EU Low Voltage Directive |
| Degree of contamination                      |      | 3                           |

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

# Universal plug connectors

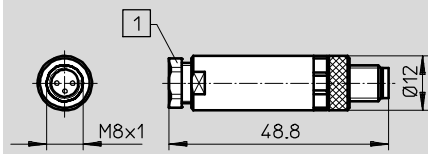
SEA-GS-M8, M8, 3-pin – Technical data

FESTO

## Dimensions

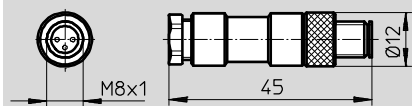
Download CAD data → [www.festo.com](http://www.festo.com)

SEA-3GS-M8-S



- 1 Cable connector:
- Black for cables 3.5 ... 5 mm
  - Blue for cables 2.5 ... 4 mm

SEA-GS-M8



## Ordering data

| Electrical connection                | Cable connector | Product weight [g] | Part No. | Type         |
|--------------------------------------|-----------------|--------------------|----------|--------------|
| Straight plug, 3-pin, screw terminal | Pg7             | 11                 | 192009   | SEA-3GS-M8-S |
| Straight plug, 3-pin, solder lug     | Pg7             | 9                  | 18696    | SEA-GS-M8    |



**Plug**

**SEA-GS**

**SEA-GS-HAR**

**SEA-4GS**

- Sensor plug for inputs/outputs
- Can be assembled with any cable lengths
- 4-pin
- Wire cross section up to 0.75 mm<sup>2</sup>



## General technical data

|   | SEA-GS ...                  | SEA-4GS ...         | SEA-GS-HAR ...                    |
|---|-----------------------------|---------------------|-----------------------------------|
| Electrical connection                       | Straight plug, 4-pin, M12x1 |                     |                                   |
|   | Screw terminal              | Screw terminal      | Insulation displacement connector |
| Type of mounting                            | Via threaded sleeve         | Via threaded sleeve | Via thread                        |
| Mounting position                           | Any                         | Any                 | Any                               |
| Max. tightening torque of locking clip [Nm] | 0.5                         | 0.5                 | 0.5                               |
| Connection cross section [mm <sup>2</sup> ] | 0.75                        | 0.14 ... 0.5        | 0.25 ... 0.5                      |
| Permissible individual wire diameter [mm]   | –                           | –                   | 0.1                               |
| Permissible wire diameter [mm]              | –                           | –                   | 1.2 ... 1.6                       |
| Acceptable current load at 40 °C [A]        | 4                           | 4                   | 4                                 |
| Surge resistance [kV]                       | 2.5                         | 2.5                 | 0.8                               |
| Operating voltage range [V AC]              | 250                         | 250                 | 32                                |
|   | [V DC]                      | 250                 | 32                                |
| Protection class to EN 60529                | IP67 (assembled)            | IP65 (assembled)    | IP67 (assembled)                  |
| Based on standard                           | EN 61076-2-101, EN 61984    |                     |                                   |

## Materials

|                             | SEA-GS ...                      | SEA-4GS ...                     | SEA-GS-HAR ...                |
|-----------------------------|---------------------------------|---------------------------------|-------------------------------|
| Housing colour              | Black                           | Black                           | –                             |
| Housing                     | PBT                             | PA                              | Nickel-plated die-cast zinc   |
| Contacts                    | Brass, coated with white bronze | Brass, coated with white bronze | Gold-plated copper base alloy |
| Union nut                   | PBT                             | PA                              | –                             |
| Permissible wire insulation | –                               | –                               | PVC                           |
| Note on materials           | RoHS-compliant                  |                                 |                               |

## Operating and environmental conditions

|  | SEA-GS ...                  | SEA-4GS ... | SEA-GS-HAR ... |
|--|-----------------------------|-------------|----------------|
| Ambient temperature [°C]                     | –40 ... +85                 |             | –25 ... +85    |
| Corrosion resistance class CRC <sup>1)</sup> | 2                           |             | 2              |
| CE marking (see declaration of conformity)   | To EU Low Voltage Directive |             | –              |
| Degree of contamination                      | 3                           |             | 3              |

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

# Universal plug connectors

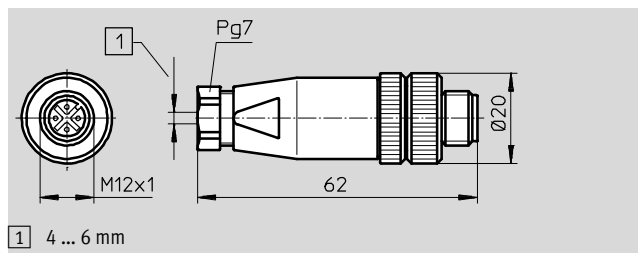
SEA-GS, M12, 4-pin – Technical data

FESTO

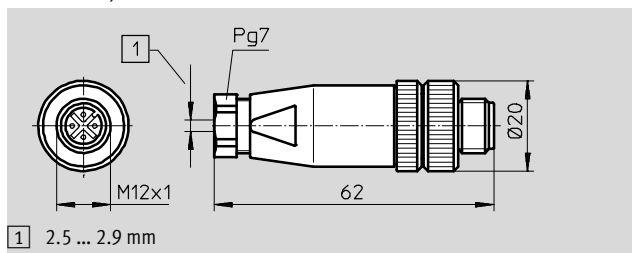
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

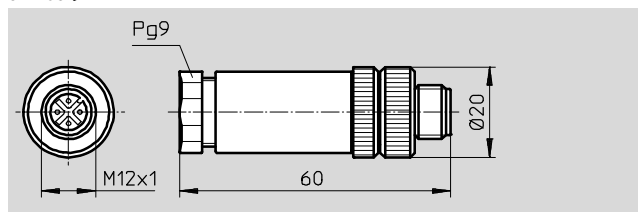
SEA-GS-7



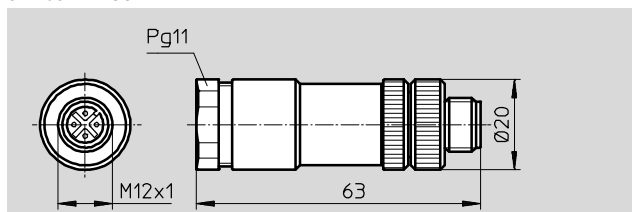
SEA-4GS-7-2,5



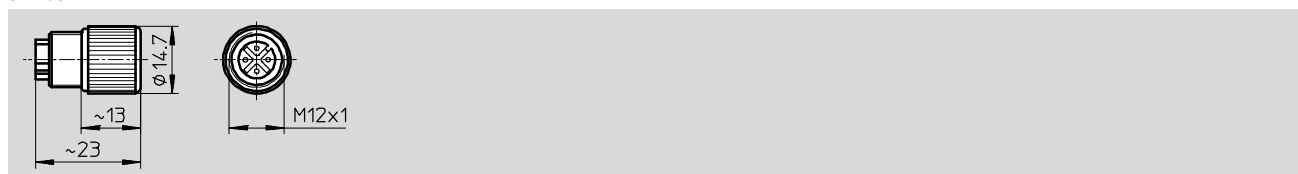
SEA-GS-9



SEA-GS-11-DUO



SEA-GS-HAR



## Ordering data

| Electrical connection  | Cable connector | Perm. cable Ø [mm] | Product weight [g] | Part No.      | Type                   |
|--|-----------------|--------------------|--------------------|---------------|------------------------|
| Straight plug (type A),<br>4-pin,<br>screw terminal              | Pg7             | 4 ... 6            | 17                 | <b>18666</b>  | <b>SEA-GS-7</b>        |
|  |                 | 2.5 ... 2.9        | 18                 | <b>192008</b> | <b>SEA-4GS-7-2,5</b>   |
|  | Pg9             | 6 ... 8            | 18                 | <b>18778</b>  | <b>SEA-GS-9</b>        |
| Straight plug,<br>4-pin,<br>insulation displacement<br>connector | Pg11            | 3 ... 5            | 24                 | <b>18779</b>  | <b>SEA-GS-11-DUO</b>   |
|  | Pg9             | 4 ... 5.1          | 11.5               | <b>525928</b> | <b>SEA-GS-HAR-4POL</b> |

**Plug**

**SEA-M12-5GS**

**SEA-5GS**

- Sensor plug for inputs/outputs
- Can be assembled with any cable lengths
- 5-pin
- Wire cross section up to 0.75 mm<sup>2</sup>



## General technical data

| Type  | SEA-M12-5GS-PG7                                      | SEA-5GS-11-DUO           |
|---|--|--------------------------|
| Electrical connection                       | Straight plug (type A), 5-pin<br>M12, screw terminal |                          |
| Type of mounting                            | Via threaded sleeve                                  |                          |
| Max. tightening torque of locking clip [Nm] | 0.5  |                          |
| Mounting position                           | Any  |                          |
| Permissible cable diameter [mm]             | 4 ... 6  | 2 x 2.5 ... 2.9 or 2 x 5 |
| Connection cross section [mm <sup>2</sup> ] | 0.75   | 0.14 ... 0.5             |
| Acceptable current load at 40 °C [A]        | 4  |                          |
| Surge resistance [kV]                       | 1.5  |                          |
| Operating voltage range                     | [V AC]   | 60                       |
|   | [V DC]   | 60                       |
| Protection class to EN 60529                | IP67 (assembled)                                     | IP65 (assembled)         |
| Based on standard                           | EN 61076-2-101, EN 61984                             |                          |

## Materials

| Type              | SEA-M12-5GS-PG7                 | SEA-5GS-11-DUO |
|-------------------|---------------------------------|----------------|
| Housing colour    | Black                           |                |
| Housing           | PBT                             | PA             |
| Contacts          | Brass, coated with white bronze |                |
| Union nut         | Nickel-plated die-cast zinc     | PA             |
| Note on materials | RoHS-compliant                  |                |

## Operating and environmental conditions

|  |                             |
|--|-----------------------------|
| Ambient temperature [°C]                     | -40 ... +85                 |
| Corrosion resistance class CRC <sup>1)</sup> | 2                           |
| CE marking (see declaration of conformity)   | To EU Low Voltage Directive |
| Degree of contamination                      | 3                           |

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

# Universal plug connectors

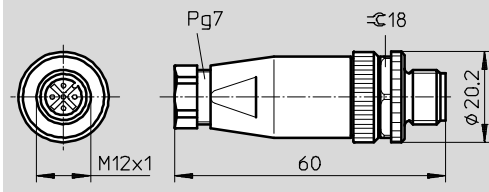
SEA-...-5GS, M12, 5-pin – Technical data

FESTO

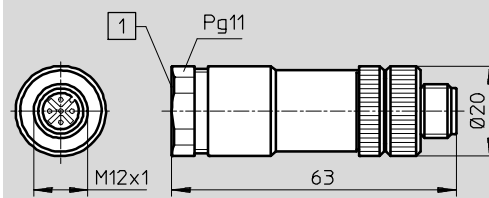
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

SEA-M12-5GS-PG7



SEA-5GS-11-DUO



1 Included in the scope of delivery:

- 1 seal insert for 2 cables with  $\varnothing$  2.5 ... 2.9 mm
- 1 seal insert for 2 cables with  $\varnothing$  5 mm
- 1 cable tie

## Ordering data

| Electrical connection                               | Cable connector | Product weight [g] | Part No. | Type            |
|---|-----------------|--------------------|----------|-----------------|
| Straight plug (type A),<br>5-pin,<br>screw terminal | Pg7             | 21.5               | 175487   | SEA-M12-5GS-PG7 |
|   | Pg11            | 24                 | 192010   | SEA-5GS-11-DUO  |

**Plug socket**  
**SEA-M12-4WD**

- Plug socket for inputs/outputs
- Can be assembled with any cable lengths
- 4-pin
- Wire cross section up to 0.75 mm<sup>2</sup>



## General technical data

|  |   |         |
|--|---|---------|
| Electrical connection                  | Angled plug socket (type A), 4-pin<br>M12, screw terminal |         |
| Type of mounting                       | Via union nut   |         |
| Mounting position                      | Any   |         |
| Permissible cable diameter             | [mm]  | 4 ... 6 |
| Max. tightening torque of locking clip | [Nm]  | 0.5     |
| Connection cross section               | [mm <sup>2</sup> ]  | 0.75    |
| Acceptable current load at 40 °C       | [A]   | 4       |
| Surge resistance                       | [kV]  | 2.5     |
| Operating voltage range                | [V AC]  | 250     |
|  | [V DC]  | 250     |
| Protection class to EN 60529           | IP67 (assembled)  |         |
| Based on standard                      | EN 61076-2-101, EN 61984                                  |         |

## Materials

|                   |                                 |
|-------------------|---------------------------------|
| Housing colour    | Black                           |
| Housing           | PBT                             |
| Contacts          | Brass, coated with white bronze |
| Seals             | Nitrile rubber                  |
| Union nut         | Nickel-plated die-cast zinc     |
| Note on materials | RoHS-compliant                  |

## Operating and environmental conditions

|  |                             |             |
|--|-----------------------------|-------------|
| Ambient temperature                        | [°C]                        | –40 ... +85 |
| CE marking (see declaration of conformity) | To EU Low Voltage Directive |             |
| Degree of contamination                    | 3                           |             |

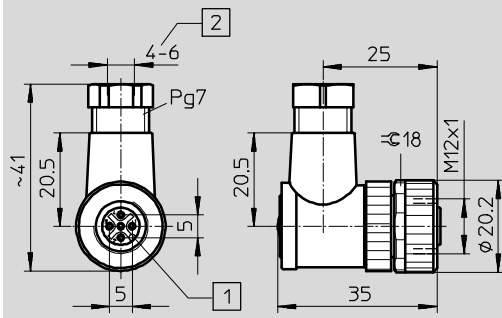
# Universal plug connectors

SEA-M12-4WD, M12, 4-pin – Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

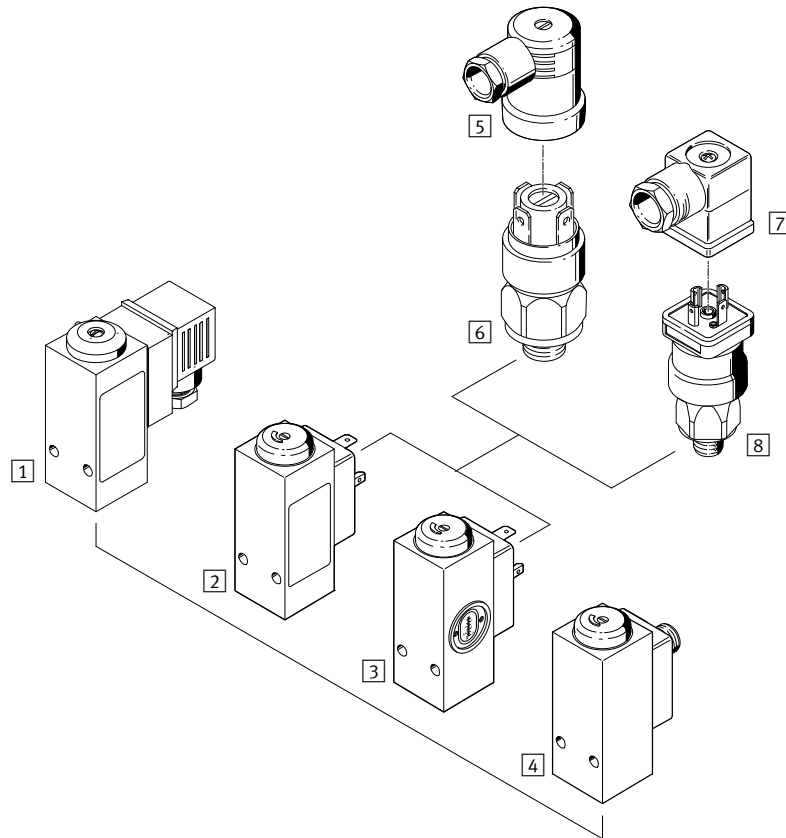


- 1 Insert rotatable in steps of 90°
- 2 Cable  $\varnothing$  4 ... 6 mm

## Ordering data

| Electrical connection                                    | Cable connector | Product weight<br>[g] | Part No.      | Type                   |
|--|-----------------|-----------------------|---------------|------------------------|
| Angled plug socket (type A),<br>4-pin,<br>screw terminal | Pg7             | 30                    | <b>185498</b> | <b>SEA-M12-4WD-PG7</b> |

## Pressure and vacuum switches PEV/VPEV

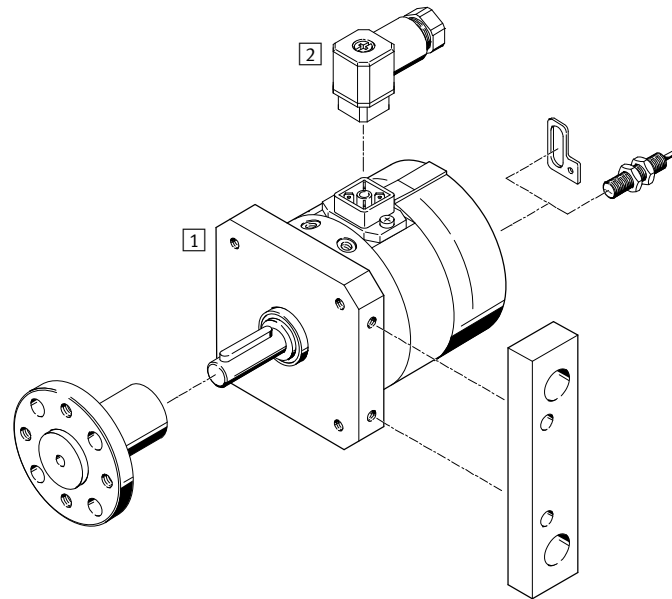


|  | Type                          | → Page/Internet |
|--|-------------------------------|-----------------|
| 1 Pressure switch<br>Vacuum switch                   | PEV-1/4-B-...<br>VPEV-1/8     | pev             |
| 2 Pressure switch                                    | PEV-1/4-B-OD-...              | pev             |
| 3 Pressure switch with scale for pressure adjustment | PEV-1/4-SC-OD-...             | pev             |
| 4 Pressure switch<br>Vacuum switch                   | PEV-1/4-B-M12<br>VPEV-1/8-M12 | pev             |
| 5 Angled socket                                      | PEV-1/4-A-WD                  | see below       |
| 6 Pressure switch                                    | PEV-1/4-A-SW27                | pev             |
| 7 Angled socket                                      | PEV-1/4-WD-LED-24             | see below       |
| Angled socket  | PEV-1/4-WD-LED-230            | see below       |
| Angled socket  | MSSD-C-4P                     | see below       |
| 8 Pressure switch                                    | PEV-1/4-A-SW27-B-OD           | pev             |

### Ordering data


|  | Description                      | Operating voltage range |        | Part No. | Type               |
|--|----------------------------------|-------------------------|--------|----------|--------------------|
|  |                                  | [V DC]                  | [V AC] |          |                    |
|  | Without switching status display | ≤180                    | ≤230   | 161209   | PEV-1/4-A-WD       |
|  | With switching status display    | 15 ... 30               | -      | 161274   | PEV-1/4-WD-LED-24  |
|  | With switching status display    | ≤180                    | ≤230   | 161275   | PEV-1/4-WD-LED-230 |
|  | With switching status display    | ≤300                    | ≤250   | 171157   | MSSD-C-4P          |

## Swivel module DSMI

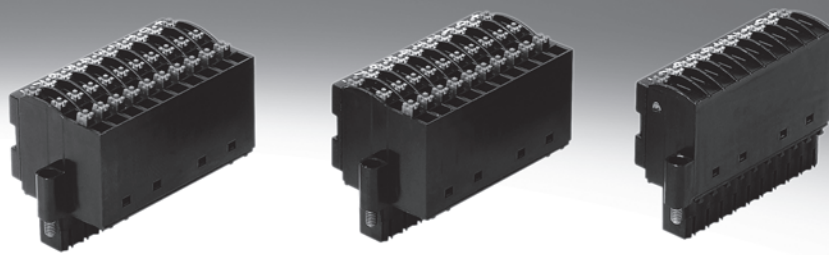


|                 | Type      | → Page/Internet |
|-----------------|-----------|-----------------|
| 1 Swivel module | DSMI      | dsmi            |
| 2 Plug socket   | SD-4-WD-7 | see below       |

### Ordering data

|   | Pin | Pin allocation        | Designation | Part No. | Type      |
|---|-----|-----------------------|-------------|----------|-----------|
|  | 1   | Power supply          | Plug socket | 194332   | SD-4-WD-7 |
|   | 2   | Signal                |             |          |           |
|   | 3   | 0 V                   |             |          |           |
|   | 4   | PE (yellow), screened |             |          |           |





























































# Plug connectors for control systems















Selection aid

FESTO

| Version   | Type              | Higher-order controller  |   |   |  |  |   |  |  | Page/Internet                         |
|---|-------------------|--|---|---|--|--|---|--|--|---------------------------------------|
|   |                   |  CDPX-X-A-W     |  CMXR-C1/CECX PROFIBUS |  CMXR-C2 CODESYS |  Basic unit CPX | Controller   |   |  |  |                                       |
|   |                   |  CECC-LK/CECC-S |  CDPX-F-CO             |  CECX-B-CO         |  CECX-F-PB-V1     |  CECX-F-CO |  CECX-C-ET |  CECX-C-PB-V1 |  CPX-CM-HPP | Operating mode / interface controller |
|   |                   | IO-Link/(-Port)  | Modbus RTU Server/Modbus TCP Server/CODESYS   | CAN interface   | PROFIBUS interface   | Can Open   | EtherNet  | PROFIBUS   | Can Open   | → Page/Internet                       |
|  | NECU-S1W9-C2-APB  |  |   |   | ■  |  |   | ■  |  | 263                                   |
|  | NECU-S1W9-C2-ACO  |  | ■   | ■   |  | ■  |   |  |  | 265                                   |
|  | FBS-SUB-9-WS-CO-K |  |   | ■   |  | ■  |   |  | ■  | 280                                   |
|  | FBS-SUB-9-WS-PB-K |  |   |   | ■  |  |   | ■  |  | 280                                   |
|  | NECC-S1G9-C2-M    | ■  | ■   | ■   |  | ■  |   |  |  | 302                                   |
|  | NECC-L2G...-C1    | ■  |   |   |  |  |   |  |  | 302                                   |
|  | NECC-L2G4-C1-M    | ■  |   |   |  |  |   |  |  | 302                                   |

| Version   | Type                  | Higher-order controller   |   |   |   |  |   | Page/Internet<br>→ |
|---|-----------------------|---|---|---|---|--|---|--------------------|
|   |                       | <br>CMXR-C2<br>CODESYS | <br>Basic unit CPX |   |   |  |   |                    |
|   |                       | Controller  |   |   |   |  |   |                    |
|   |                       | <br>CAMI-C             | <br>CPX-CEC-C1       | <br>CPX-CEC-M1 | <br>CPX-CMXX | <br>CPX-CMAX-C1 | <br>CPX-CMPX |                    |
|   |                       | Operating mode / interface controller   |   |   |   |  |   |                    |
|   |                       |   | CANopen   | CANopen + Softmotion  |   | CANopen<br>CPI   | CANopen<br>CPI  |                    |
|  | CAMF-B-M25-G4         | ■   |   |   |   |  |   | 246                |
|  | FBS-RJ45-8-GS         |   | ■   | ■   | ■   |  |   | 251                |
|  | FBSD-GD-9-5POL        |   | ■   | ■   | ■   |  |   | 269                |
|  | FBS-M12-5GS-PG9       |   | ■   | ■   | ■   |  |   | 269                |
|  | FBSD-KL-2x5POL        |   | ■   | ■   | ■   |  |   | 272                |
|  | FBS-SUB-9-BU-2x5POL-B |   | ■   | ■   | ■   |  |   | 278                |
|  | FBA-2-M12-5POL        |   | ■   | ■   | ■   |  |   | 282                |
|  | FBA-1-SL-5POL         |   | ■   | ■   | ■   |  |   | 282                |
|  | KVI-CP-3-SSD          |   |   |   |   | ■  | ■   | 287                |

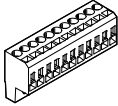
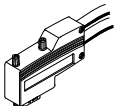
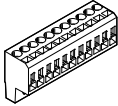
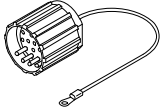
| Version   | Type                | Controller  |   |   |   |   |   |   | Page/Internet      |
|---|---------------------|---|---|---|---|---|---|---|--------------------|
|   |                     |  |              |  |  |  |  |  |                    |
|   |                     | CMMP-AS-MO<br>No slot   | CMMP-AS-M3<br>With 3 slots  | CMMP-AS-C20-11A-P3<br>With 2 slots  | CMMS-AS-C4-3A   | CMMD-AS-C8-3A   | CMMO-ST-C5-1-DIOP/DION  | CMMS-ST   |                    |
|   |                     | Operating mode / interface controller   |   |   |   |   |   |   |                    |
|   |                     | FHPP / Modbus/TCP<br>I/O interface<br>CANopen                                     | FHPP / Modbus/TCP / I/O interface<br>CANopen/PROFIBUS/EtherCAT<br>EtherNet/PROFINET/DeviceNet | FHPP / I/O interface<br>CANopen / PROFIBUS<br>EtherCAT / DeviceNet                | CODESYS/ TwinCat<br>Step7 / CANopen<br>PROFIBUS / DeviceNet                       | CODESYS / TwinCat<br>Step7 / CANopen<br>PROFIBUS / DeviceNet                        | FCT<br>EtherNet TCP/IP<br>RS422   | CODESYS / TwinCat<br>Step7 / CANopen<br>PROFIBUS / DeviceNet                        | ↑<br>Page/Internet |
|  | NECC-A-S-S1G9-C2M   | ■   | ■   | ■   | ■   | ■   |   | ■   | 248                |
|  | NEKM-C-1            |   |   |   |   |   |   | ■   | 248                |
|  | NEKM-C-3            | ■   | ■   |   |   |   |   |   | 248                |
|  | NEKM-C-5            |   | ■   | ■   |   |   |   |   | 248                |
|  | NEKM-C-6            |   |   | ■   |   |   |   |   | 248                |
|  | NEKM-C-7            | ■   | ■   |   |   |   |   |   | 248                |
|  | NEKM-C-8            | ■   | ■   |   |   |   |   |   | 248                |
|  | NEKM-C-4            |   |   |   | ■   | ■   |   |   | 248                |
|  | NEKM-C-10           |   |   |   |   |   | ■   |   | 248                |
|  | FBS-SUB-9-WS-CO-K   | ■   | ■   |   |   | ■   |   | ■   | 280                |
|  | FBS-SUB-9-WS-PB-K   |   | ■   |   | ■   | ■   |   | ■   | 280                |
|  | FBSD-KL-2X5POL      | ■   | ■   | ■   | ■   | ■   |   | ■   | 248                |
|  | NEFC-S1G25-C2W25-S6 | ■   | ■   | ■   |   |   | ■   | ■   | 248                |

| Version   | Type                  | Controller  |   |   |   |   |   | Page/Internet<br>→ |
|---|-----------------------|---|---|---|---|---|---|--------------------|
|   |                       |  |  |  |  |  |  |                    |
|   |                       | SFC-LACI-YD-10-E-H2-10  | CMMP-AS-M3  | CMMS-AS-C4-3A   | CMMD-AS-C8-3A   | CMMS-ST   | SFC-DC  |                    |
|   |                       | Operating mode / interface controller   |   |   |   |   |   |                    |
|   |                       | FHPP / I/O interface<br>PROFIBUS/CanOpen<br>DeviceNet                             | FHPP / I/O interface<br>CanOpen/PROFIBUS/EtherCAT<br>EtherNet/PROFINET/DeviceNet  | CODESYS / TwinCat<br>Step7 / CanOpen<br>PROFIBUS / DeviceNet                      | CODESYS / TwinCat<br>Step7 / CanOpen<br>PROFIBUS / DeviceNet                        | CODESYS / TwinCat<br>Step7 / CanOpen<br>PROFIBUS / DeviceNet                        | FCT/PROFIBUS<br>CanOpen/DeviceNet   |                    |
|  | FBS-GD-9-5POL         | ■   |   |   |   |   |   | 269                |
|  | FBS-M12-5GS-PG9       | ■   |   |   |   |   |   | 269                |
|  | FBS-KL-2x5POL         | ■   | ■   | ■   | ■   | ■   | ■   | 272                |
|  | FBS-SUB-9-BU-2x5POL-B | ■   |   |   |   |   | ■   | 278                |
|  | FBS-SUB-9-GS-DP-B     | ■   |   |   |   |   | ■   | 280                |
|  | FBA-2-M12-5POL-RK     | ■   |   |   |   |   | ■   | 282                |
|  | FBA-2-M12-5POL        | ■   |   |   |   |   | ■   | 282                |
|  | FBA-1-SL-5POL         | ■   |   |   |   |   | ■   | 282                |

# Plug connectors for control systems

NECC/FBS-SUB/CAMF, for modular control systems and multi-axis control systems

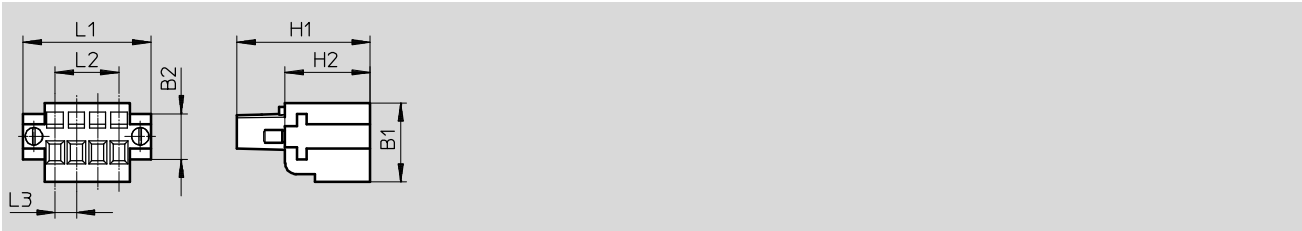
FESTO

| Ordering data  |  | Part No. | Type              |
|--|--|----------|-------------------|
| Plug connectors for modular control systems CECX and multi-axis control systems CMXR |  |          |                   |
|     | Plug for peripheral modules, 2-pin   | 553857   | NECC-L1G2-C1      |
|  | Plug for peripheral modules, 4-pin   | 553858   | NECC-L1G4-C1      |
|  | Plug for peripheral modules, 6-pin   | 553859   | NECC-L1G6-C1      |
|  | Plug for peripheral modules, 8-pin   | 553860   | NECC-L1G8-C1      |
|  | Plug for peripheral modules, 18-pin  | 553861   | NECC-L1G18-C1     |
|     | Plug for Profibus interface,<br>Sub-D, 9-pin, without terminating resistor                   | 533780   | FBS-SUB-9-WS-PB-K |
|  | Plug for CAN bus interface,<br>Sub-D, 9-pin, without terminating resistor                    | 533783   | FBS-SUB-9-WS-CO-K |
| Plug for multi-axis control systems CMXR   |  |          |                   |
|     | Plug for interface housing CAMI-C, 11-pin  | 558328   | NECC-L1G11-C1     |
|     | Plug:<br>is used to bridge the emergency stop circuit when the teach pendant is disconnected | 555676   | CAMF-B-M25-G4     |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Plug

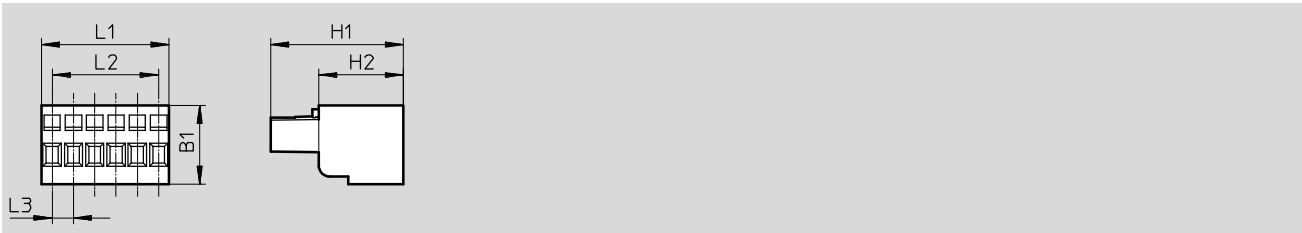


| Type           | B1 | B2  | H1   | H2 | L1 | L2   | L3  |
|----------------|----|-----|------|----|----|------|-----|
| NECC-L2G4-C1-M | 13 | 7.5 | 21.9 | 14 | 21 | 10.5 | 3.5 |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Plug



| Type          | B1 | H1   | H2 | L1   | L2   | L3  |
|---------------|----|------|----|------|------|-----|
| NECC-L2G2-C1  | 13 | 21.9 | 14 | 7    | 3.5  | 3.5 |
| NECC-L2G5-C1  |    |      |    | 17.5 | 14   |     |
| NECC-L2G6-C1  |    |      |    | 21   | 17.5 |     |
| NECC-L2G8-C1  |    |      |    | 28   | 24.5 |     |
| NECC-L2G24-C1 |    |      |    | 84   | 80.5 |     |

## Materials

|  |                |
|--|----------------|
| Corrosion resistance class CRC <sup>1)</sup> | 1              |
| Note on materials                            | RoHS-compliant |

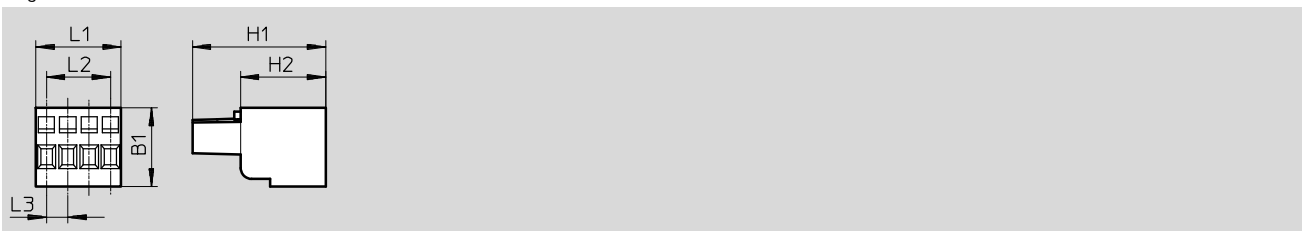
1) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Plug

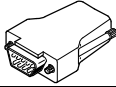
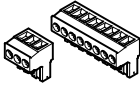
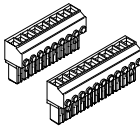
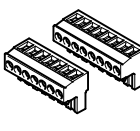
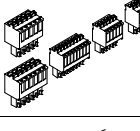
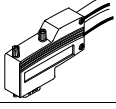
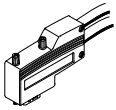
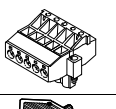
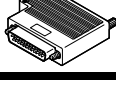


| Type         | B1 | H1   | H2 | L1 | L2   | L3  |
|--------------|----|------|----|----|------|-----|
| NECC-L2G4-C1 | 13 | 21.9 | 14 | 14 | 10.5 | 3.5 |

# Plug connectors for control systems

NECC/NEKM/FBS-SUB/FBSD for motor controllers

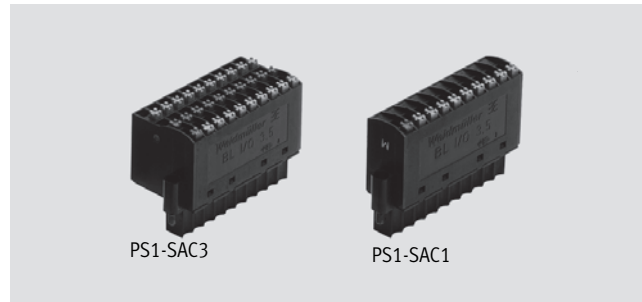
FESTO

| Ordering data   |  | for motor controller |         |         |         |         | Part No.           | Type                 |
|---|--|----------------------|---------|---------|---------|---------|--------------------|----------------------|
|   | Brief description  | CMMP-AS              | CMMS-AS | CMMD-AS | CMMO-ST | CMMS-ST |                    |                      |
|    | Encoder plug   | ■                    | ■       | ■       | –       | ■       | 564264             | NECC-A-S-S1G9-C2M    |
|    | Assortment of plugs, comprising plug for power supply and plug for motor connection. The assortment of plugs is included in the scope of delivery of the motor controller. | –                    | –       | –       | –       | ■       | 547452             | NEKM-C-1             |
|    | Assortment of plugs for CMMP-AS-...-11A-P3   | ■                    | –       | –       | –       | –       | 552256             | NEKM-C-3             |
|   | Assortments of plugs interface CAMC-D-8E8A   | ■                    | –       | ■       | –       | –       | 569959             | NEKM-C-5             |
|   | Assortment of plugs for CMMP-AS-C20-11A-P3   | ■                    | –       | –       | –       | –       | 1425453            | NEKM-C-6             |
|   | Assortment of plugs for CMMP-AS-C2/-C5-3A-M0, CMMP-AS-C2/-C5-3A-M3   | ■                    | –       | –       | –       | –       | 1659228<br>1660640 | NEKM-C-7<br>NEKM-C-8 |
|   | Assortment of plugs, comprising plug for power supply and plug for motor connection. The assortment of plugs is included in the scope of delivery                          | –                    | ■       | ■       | –       | –       | 560504             | NEKM-C-4             |
|  | Plug assortment for motor cable, encoder cable, power supply, reference switch, STO safety function  | –                    | –       | –       | ■       | –       | 576005             | NEKM-C-10            |
|  | Plug for CANopen interface   | ■                    | –       | ■       | –       | ■       | 533783             | FBS-SUB-9-WS-CO-K    |
|  | Plug for PROFIBUS interface  | ■                    | ■       | ■       | –       | ■       | 533780             | FBS-SUB-9-WS-PB-K    |
|  | Plug for DeviceNet interface   | ■                    | ■       | ■       | –       | ■       | 525635             | FBSD-KL-2X5POL       |
|  | 25-pin Sub-D plug. Each wire can be individually assembled using screw terminals   | ■                    | ■       | –       | ■       | ■       | 8001372            | NEFC-S1G25-C2W25-S6  |



**Plug connector PS1-SAC**  
Connection set SEA-KL

- Plug connector for power supply, 10-pin or 30-pin
- Individually or as a set
- Simple cable connection using clamping technology



### General technical data

| Type                                       | PS1-SAC1...                          | PS1-SAC3...                          | SEA-KL-SAC10/30                         |
|--|--------------------------------------|--------------------------------------|---|
| Electrical connection                      | 10-pin socket, 10-pin terminal strip | 10-pin socket, 30-pin terminal strip | 10-pin socket, 10/30-pin terminal strip |
| Operating voltage range [V AC]             | Max. 50                              |                                      |   |
| Mounting components                        | 2 M2x7 screws                        |                                      |   |
| Max. wire cross section [mm <sup>2</sup> ] | 0.08 ... 0.75                        |                                      |   |
| Mounting                                   | Via through-hole                     |                                      |   |

### Materials

|         |     |
|---------|-----|
| Housing | PBT |
|---------|-----|

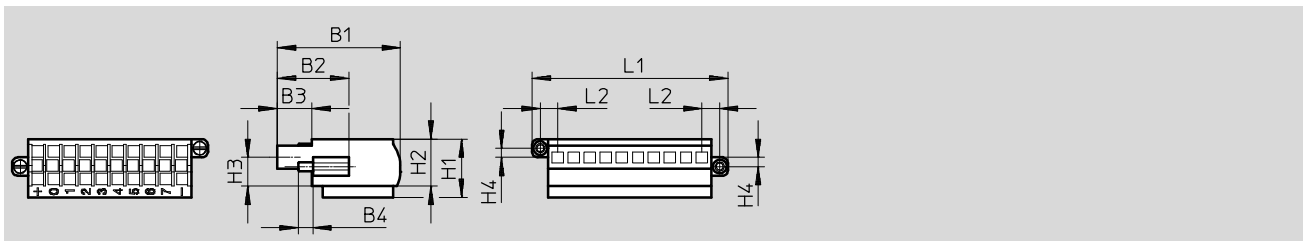
### Operating and environmental conditions

|                          |              |
|--------------------------|--------------|
| Ambient temperature [°C] | -20 ... +100 |
|--------------------------|--------------|

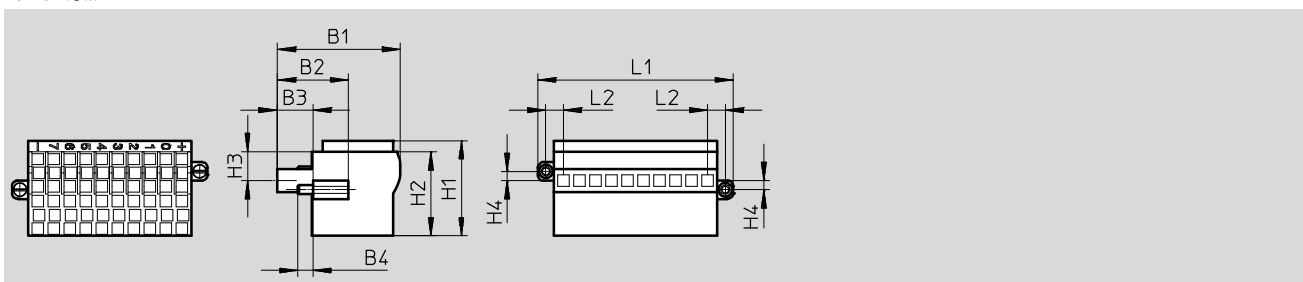
### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

PS1-SAC1...



PS1-SAC3...





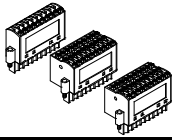
|             | B1   | B2   | B3  | B4          | H1   | H2   | H3  | H4 | L1   | L2  |
|-------------|------|------|-----|-------------|------|------|-----|----|------|-----|
| PS1-SAC1... | 26.9 | 15.6 | 7.6 | 3.3 ... 3.9 | 12.7 | 10.3 | 6.3 | 2  | 42.7 | 3.9 |
| PS1-SAC3... | 26.9 | 15.6 | 7.6 | 3.3 ... 3.9 | 20.8 | 18.4 | 6.3 | 2  | 42.7 | 3.9 |

# Plug connectors for control systems

PS1-SAC/SEA-KL – Technical data

**FESTO**

## Ordering data

|   | Electrical connection                      | Acceptable current load<br>[A] | Weight<br>[g] | Part No.      | Type                       |
|---|--|--------------------------------|---------------|---------------|----------------------------|
|  | 10-pin socket,<br>10-pin terminal strip    | 4                              | 14            | <b>197159</b> | <b>PS1-SAC10-10POL</b>     |
|   | 10-pin socket,<br>10-pin terminal strip    | 4                              | 40            | <b>197160</b> | <b>PS1-SAC11-10POL+LED</b> |
|  | 10-pin socket,<br>30-pin terminal strip    | 0.5                            | 25            | <b>197161</b> | <b>PS1-SAC30-30POL</b>     |
|   | 10-pin socket,<br>30-pin terminal strip    | 0.5                            | 25            | <b>197162</b> | <b>PS1-SAC31-30POL+LED</b> |
|  | 10-pin socket,<br>10/30-pin terminal strip | 0.5/4                          | 71            | <b>526256</b> | <b>SEA-KL-SAC10/30</b>     |

## Plug FBS-RJ45

- Ethernet plug with 8-pin RJ45 connection
- Reverse polarity protected
- High transmission quality
- Detachable connection



### General technical data

| Type   | FBS-RJ45-8-GS                              | FBS-RJ45-PP-GS                         |
|--|--|--|
| Permissible cable diameter [mm]                | 4 ... 5.4                                  | 5 ... 8                                |
| Protection class to EN 60529                   | IP65/IP67                                  | IP65/IP67                              |
| Protection against direct and indirect contact | PELV (Protective Extra-Low Voltage)        | PELV (Protective Extra-Low Voltage)    |
| Ethernet cable specification                   | Type: CAT.5                                | Type: CAT.5                            |
|  | Individual wire diameter: 0.89 ... 0.99 mm | Individual wire diameter: max. 1.6 mm  |
|  | AWG 24-26 fine wire                        | 0.13 ... 0.36 mm <sup>2</sup> , 1-wire |
|  | –  | 0.13 ... 0.36 mm <sup>2</sup> , 7-wire |
| Product weight [g]                             | 15   | 60                                     |

### Materials

| Type              | FBS-RJ45-8-GS | FBS-RJ45-PP-GS                             |
|-------------------|---------------|--|
| Housing           | Reinforced PA | Nickel-plated die-cast zinc                |
| Screws            | Steel         | –  |
| Seals             | NBR           | NBR  |
| Pin contacts      | –             | Nickel-plated and gold-plated copper alloy |
| Note on materials | –             | RoHS-compliant                             |

### Operating and environmental conditions

| Type                      | FBS-RJ45-8-GS                                | FBS-RJ45-PP-GS |
|---------------------------|--|----------------|
| Ambient temperature [°C]  | –5 ... +60                                   | –40 ... +70    |
| Storage temperature [°C]  | –20 ... +70                                  | –40 ... +70    |
| Relative air humidity [%] | 0 ... 90, non-condensing, in assembled state | –              |

# Plug connectors for control systems

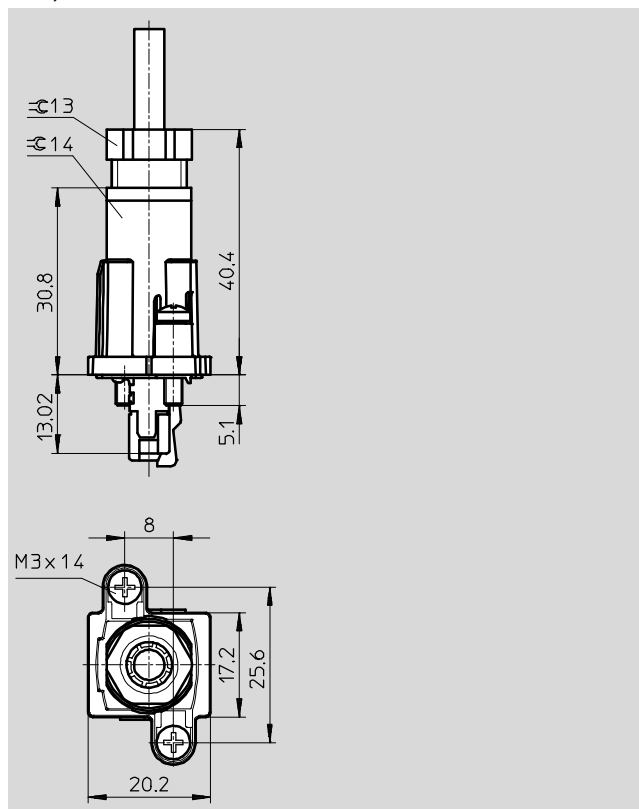
FBS-RJ45, for Ethernet – Technical data

FESTO

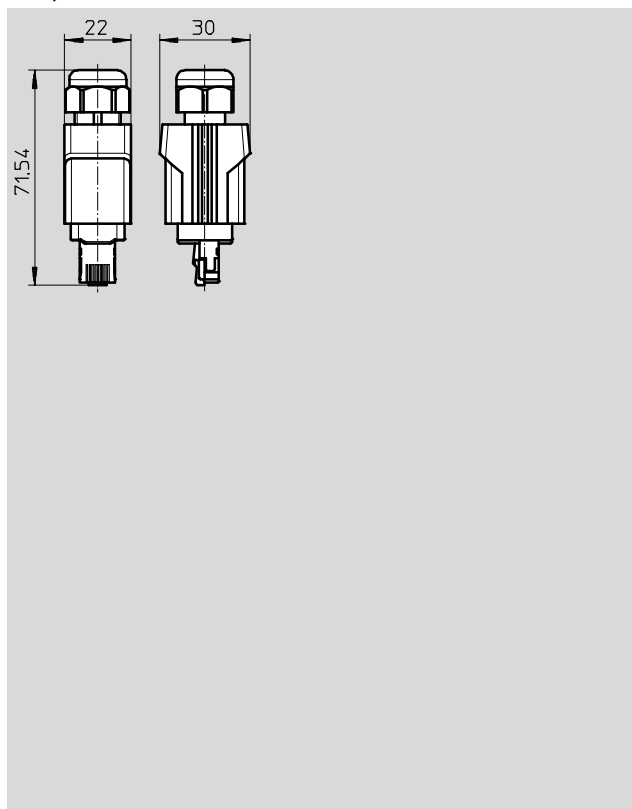
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

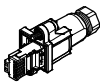
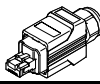
FBS-RJ45-8-GS

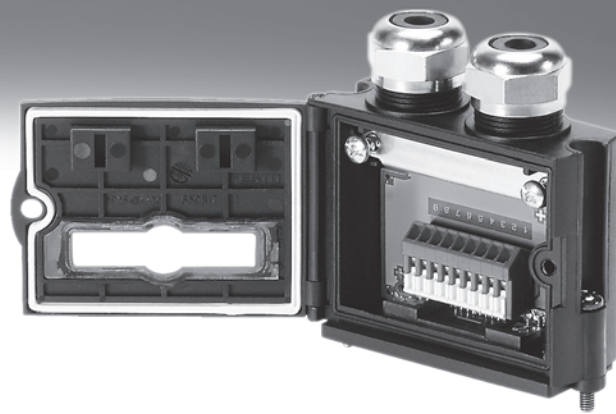


FBS-RJ45-PP-GS



## Ordering data

































|   | Electrical connection           | Part No. | Type           |
|---|---------------------------------|----------|----------------|
|  | Straight plug, 8-pin            | 534494   | FBS-RJ45-8-GS  |
|  | Straight plug, push-pull, 8-pin | 552000   | FBS-RJ45-PP-GS |




















# Plug connectors for fieldbuses

Selection aid

FESTO

| Version   | Type                  | Fieldbus protocols |          |           |             |         |         | EtherNet protocols |          |          |                             |                               | Page/Internet<br>➔ |
|---|-----------------------|--------------------|----------|-----------|-------------|---------|---------|--------------------|----------|----------|-----------------------------|-------------------------------|--------------------|
|   |                       | CPX-FEC-1-IE       | Interbus | DeviceNet | Profibus-DP | CanOpen | CC-Link | EtherCat           | EtherNet | ProfiNet | Profinet<br>CPX-M-FB34-RJ45 | PROFINET RT<br>CPX-M-FB35-LWL |                    |
|    | NECU-M-S-D12G4-C2-ET  |                    |          |           |             |         |         | ■                  | ■        | ■        |                             |                               | 190                |
|    | FBS-RJ45-8-GS         | ■                  |          |           |             |         |         |                    |          |          |                             |                               | 251                |
|    | NECU-S1W9-C2-APB      |                    |          |           | ■           |         |         |                    |          |          |                             |                               | 263                |
|    | NECU-S1W9-C2-ACO      |                    |          |           |             | ■       |         |                    |          |          |                             |                               | 265                |
|    | FBSD-GD-9-5POL        |                    |          | ■         |             | ■       |         |                    |          |          |                             |                               | 269                |
|    | FBS-M12-5GS-PG9       |                    |          | ■         |             | ■       |         |                    |          |          |                             |                               | 269                |
|    | FBSD-KL-2x5POL        |                    |          | ■         |             | ■       |         |                    |          |          |                             |                               | 272                |
|    | NECU-M-S-B12G5-C2-PB  |                    |          |           | ■           |         |         |                    |          |          |                             |                               | 273                |
|   | NECU-M-B12G5-C2-PB    |                    |          |           | ■           |         |         |                    |          |          |                             |                               | 275                |
|  | CACR-B12G5-220-PB     |                    |          |           | ■           |         |         |                    |          |          |                             |                               | 277                |
|  | FBS-SUB-9-BU-2x5POL-B |                    |          | ■         |             | ■       |         |                    |          |          |                             |                               | 278                |
|  | FBS-SUB-9-BU-IB-B     | ■                  |          |           |             |         |         |                    |          |          |                             |                               | 278                |
|  | FBS-SUB-9-GS-DP-B     |                    |          |           | ■           |         |         |                    |          |          |                             |                               | 280                |
|  | FBS-SUB-9-WS-PB-K     |                    |          |           | ■           |         |         |                    |          |          |                             |                               | 280                |
|  | FBS-SUB-9-WS-CO-K     |                    |          |           |             | ■       |         |                    |          |          |                             |                               | 280                |
|  | FBS-SUB-9-GS-IB-B     | ■                  |          |           |             |         |         |                    |          |          |                             |                               | 280                |
|  | FBS-SUB-9-GS-2x4POL-B |                    |          |           |             |         | ■       |                    |          |          |                             |                               | 280                |
|  | FBS-SUB-9-GS-1x9POL-B | ■                  |          |           |             |         |         |                    |          |          |                             |                               | 280                |
|  | FBA-2-M12-5POL-RK     |                    |          |           | ■           |         |         |                    |          |          |                             |                               | 282                |
|  | FBA-2-M12-5POL        |                    |          | ■         |             | ■       |         |                    |          |          |                             |                               | 282                |
|  | FBA-1-SL-5POL         |                    |          |           |             | ■       |         |                    |          |          |                             |                               | 282                |
|  | FBA-1-SL-5POL         |                    |          | ■         |             |         |         |                    |          |          |                             |                               | 282                |
|  | FBA-1-KL-5POL         |                    |          |           |             |         | ■       |                    |          |          |                             |                               | 282                |
|  | CPX-SK-2              |                    |          |           |             |         |         |                    |          | ■        | ■                           | ■                             | 298                |
|  | CPX-M-AK-C            |                    |          |           |             |         |         |                    |          |          | ■                           | ■                             | 298                |
|  | NEFC-M12G5-0.3-U1G5   |                    | ■        | ■         | ■           |         | ■       |                    |          | ■        | ■                           |                               | 298                |
|  | FBS-RJ45-PP-GS        |                    |          |           |             |         |         |                    |          |          | ■                           |                               | 298                |
|  | FBS-SCRJ-PP-GS        |                    |          |           |             |         |         |                    |          |          |                             | ■                             | 299                |
|  | CPX-AB-2-M12-RK-IB    | ■                  |          |           |             |         |         |                    |          |          |                             |                               | 300                |
|  | CPX-AB-2-M12-RK-DP    |                    |          |           | ■           |         |         |                    |          |          |                             |                               | 301                |
|  | CPX-AB-1-7/8-DN       |                    |          | CPX       |             |         |         |                    |          |          |                             |                               | 301                |
|  | NECC-S1G9-C2-M        |                    |          |           |             | ■       |         |                    |          |          |                             |                               | 302                |

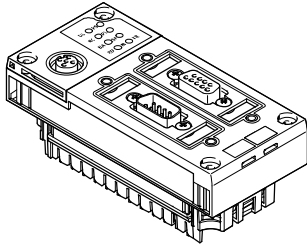
| Version | Type                  | Technological modules |                |                   |                     |                   |                               |                             |                                | Page/Internet<br>➔ |
|---------|-----------------------|-----------------------|----------------|-------------------|---------------------|-------------------|-------------------------------|-----------------------------|--------------------------------|--------------------|
|         |                       | CPX-CMXX-T30          | CPX-CM-HPP-T31 | CPX-CMAX-C1-1-T21 | CPX-CMPX-C-1-H1-T20 | CPX-CMIX-M1-1-T23 | CPX-CEC-XX CODESYS<br>T06-T08 | CPX-FEC-1-IE-<br>Modbus T05 | CP-Installationssystem<br>CTEC |                    |
|         | FBS-RJ45-8-GS         |                       |                |                   |                     |                   | ■                             | ■                           |                                | 251                |
|         | FBSD-GD-9-5POL        | ■                     |                |                   |                     |                   | ■                             |                             |                                | 269                |
|         | FBS-M12-5GS-PG9       | ■                     |                |                   |                     |                   | ■                             |                             |                                | 269                |
|         | FBSD-KL-2x5POL        | ■                     |                |                   |                     |                   | ■                             |                             |                                | 272                |
|         | FBS-SUB-9-BU-2x5POL-B |                       |                |                   |                     |                   | ■                             |                             |                                | 278                |
|         | FBS-SUB-9-WS-CO-K     |                       | ■              |                   |                     |                   |                               |                             |                                | 280                |
|         | FBS-SUB-9-GS-1x9POL-B |                       |                |                   |                     |                   |                               | ■                           |                                | 280                |
|         | FBA-2-M12-5POL        | ■                     |                |                   |                     |                   | ■                             |                             |                                | 282                |
|         | FBA-1-SL-5POL         | ■                     |                |                   |                     |                   | ■                             |                             |                                | 282                |
|         | KVI-CP-3-SSD          |                       |                | ■                 | ■                   | ■                 |                               |                             | ■                              | 287                |
|         | FBS-SCRJ-PP-GS        | ■                     |                |                   |                     |                   |                               |                             |                                | 299                |

| Version   | Type                      | IO-Link/I-Port-compatible      |                                  |   | AS-interface                                   |   |   | → Page/Internet |
|---|---------------------------|--------------------------------|----------------------------------|---|--|---|---|-----------------|
|   |                           | CPX-CTEL-4-M12-5POL<br>T40-T44 | CPX-IO-Link<br>Master<br>T46-T48 | CECC-LK<br>CECC-S<br>IO-Link-compatible | ASI-4DI3DO-<br>M12x2-5POL-Z<br>ASI-8DI-M8-3POL | AS-interface<br>Valve terminal with M12<br>bus connection | AS-interface flat cable<br>bus connection |                 |
|    | SEA-GS-11-DUO             |                                |                                  |   |  | ■   |   | 233             |
|    | SEA-5GS-11-DUO            |                                |                                  |   |  | ■   |   | 235             |
|   | NEDU-L2R1-V10-M12G5-M12G5 | ■                              | ■                                |   |  |   |   | 259             |
|   | NEDU-L2R1-V8-M12G5-M12G5  | ■                              | ■                                |   |  |   |   | 259             |
|    | NEFU-X24F-M12G4           |                                |                                  |   |  | ■   |   | 267             |
|    | NEFU-X22F-M12G4           |                                |                                  |   |  | ■   |   | 267             |
|    | NEFU-X24F-1-M12G4         |                                |                                  |   | ■  | ■   |   | 267             |
|    | FBSD-GD-9-5POL            |                                |                                  |   | ■  | ■   |   | 269             |
|    | ASI-SD-PG-M12             |                                |                                  |   | ■  | ■   |   | 292             |
|    | ASI-SD-FK-M12             |                                |                                  |   |  | ■   |   | 292             |
|    | ASI-SD-FK                 |                                |                                  |   |  |   | ■   | 294             |
|   | ASI-SD-FK180              |                                |                                  |   |  |   | ■   | 294             |
|  | ASI-SD-FK-BL              |                                |                                  |   |  |   | ■   | 294             |
|  | NECC-S1G9-C2-M            |                                |                                  | ■                                       |  |   |   | 302             |
|  | NECC-L2G2-C1              |                                |                                  | ■                                       |  |   |   | 302             |
|  | NECC-L2G4-C1              |                                |                                  | ■                                       |  |   |   | 302             |
|  | NECC-L2G5-C1              |                                |                                  | ■                                       |  |   |   | 302             |
|  | NECC-L2G6-C1              |                                |                                  | ■                                       |  |   |   | 302             |
|  | NECC-L2G8-C1              |                                |                                  | ■                                       |  |   |   | 302             |



## Individual overview of modules

### Bus node

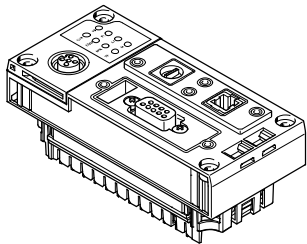


- Bus node for
- PROFIBUS DP
  - INTERBUS
  - DeviceNet
  - CANopen
  - CC-LINK

- Ethernet/IP (integrated web server)
- PROFINET (integrated web server)
- POWERLINK
- EtherCAT

→ cpx

### Control block

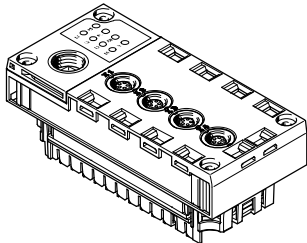


- CPX-FEC
- Programming with FST
  - Ethernet interface
  - Modbus/TCP
  - EasyIP
  - Integrated web server
  - Sub-D programming interface

- CPX-CEC
- Programming with CODESYS
  - Ethernet interface
  - Modbus/TCP
  - EasyIP
  - CANopen master

→ cpx-fec

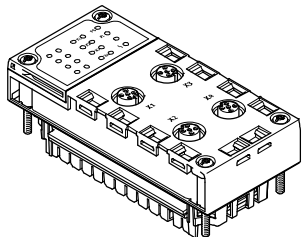
### CP interface



- Interface CPX-CP
- 4 CP strings
  - Max. 4 modules per string
  - 32 inputs/32 outputs per string
  - CPI functionality

→ cpx-cp

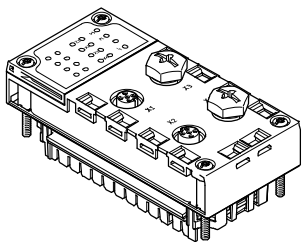
### CTEL interface



- CPX-CTEL interface
- CTEL master
  - Max. 4 devices with individual electronic fuse protection
  - Max. 64 inputs/64 outputs per I-Port interface
  - The maximum length of a string is 20 m

→ cpx-ctel

### Electrical interface CPX-CTEL-2

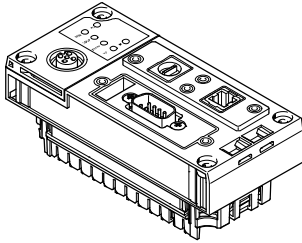


- Interface CPX-CTEL-2
- Master for IO-Link
  - Max. 2 devices with individual electronic protection
  - Process data length of the inputs and outputs is limited to 16 bytes for inputs and 16 bytes for outputs per port
  - The maximum length of a string is 20 m

→ cpx-ctel

## Individual overview of modules

### Modules for actuating electric drive units



#### CPX-CMXX

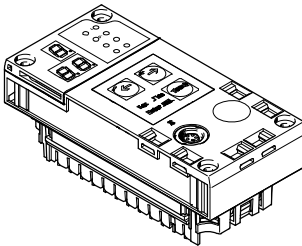
- Multi-axis interface
- Ethernet interface
- 2 axis groups with max. 4 axes per group
- Max. 1024 positioning records per axis group

#### CPX-CM-HPP

- Axis interface
- CAN bus for up to 4 individual electric axes

→ cpx-cmxx

### Modules for controlling pneumatic drive units



#### CPX-CMAX

- Axis controller
- Position and force control
- 64 configurable positioning records
- Auto-identification
- Control of a brake or clamping unit via the proportional directional control valve VPWP

#### CPX-CMPX

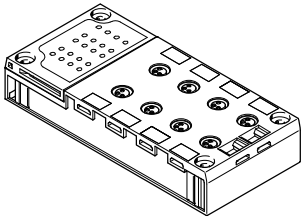
- End-position controller
- Fast travel between the mechanical end stops of the cylinder
- Smooth travel into the end position
- Improved control of downtime
- Control of a brake via the proportional directional control valve VPWP

→ cpx-cax

#### CPX-CMIX

- Measuring module
- CAN input (Festo specification) for measuring signal
- Recording of the absolute position values or speed values of the connected drive

### Plastic connection block



#### Direct machine mounting (protection class IP65, IP67)

- M8-3POL
- M8-4POL
- M12-5POL
- M12-5POL quick lock, metal thread screened
- M12-8POL
- Sub-D
- Quick connector
- Spring-loaded terminal with cover

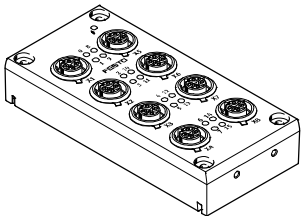
#### Protected fitting space (protection class IP20)

- Spring-loaded terminal

#### Screening concept

- Optional screening plate for connection blocks with M12 connection technology

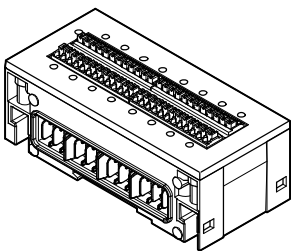
### Metal manifold block



#### Direct machine mounting (protection class IP65, IP67)

- M12-5POL

### Connection block including electronics module and interlinking block



#### Installation in the control cabinet (protection class IP20)

- Plastic connection block
- Spring-loaded terminal
- Digital input module with 16 inputs
- Digital I/O module with 8 inputs and 8 outputs

**T-adapter**  
**FB-TA**  
**NEDU-L2R1-V10**

- T-adapter
- Branch line for connecting and disconnecting fieldbus components
- Connected fieldbus components can be disconnected without interrupting signal transmission (to other components)



## General technical data

| Type                           | FB-TA                    | NEDU-L2R1-V10                        |
|--------------------------------|--------------------------|--------------------------------------|
| Electrical connection 3        | Plug, M12, 5-pin         | Straight plug, M12, 5-pin, A-coded   |
| Electrical connection 1        | Socket, M8, 5-pin        | Straight socket, M12, 5-pin, A-coded |
| Electrical connection 2        | Socket, M8, 5-pin        | Straight socket, M12, 5-pin, A-coded |
| Type of mounting               | Via through-hole         | Screw-in                             |
| Max. tightening torque [Nm]    | –                        | 0.6                                  |
| Operating voltage range [V DC] | 10 ... 30                | 0 ... 30                             |
| Surge strength [kV]            | –                        | 1.5                                  |
| Acceptable current load [A]    | 4                        | 4                                    |
| Protection class to EN 60529   | IP67, in assembled state | IP65, IP67, in assembled state       |

## Materials

| Type              | FB-TA | NEDU-L2R1-V10                |
|-------------------|-------|------------------------------|
| Housing           | –     | TPE-U(PUR)                   |
| Housing colour    | –     | Black                        |
| Union nut         | –     | Die-cast zinc, nickel plated |
| Seals             | –     | FPM                          |
| Pin contacts      | –     | Gold-plated copper alloy     |
| Note on materials | –     | RoHS-compliant               |

## Operating and environmental conditions

| Type   | FB-TA       | NEDU-L2R1-V10 |
|--|-------------|---------------|
| Ambient temperature [°C]                     | –25 ... +90 | –25 ... +85   |
| Corrosion resistance class CRC <sup>1)</sup> | –           | 2             |
| Degree of contamination                      | –           | 3             |

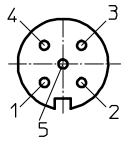
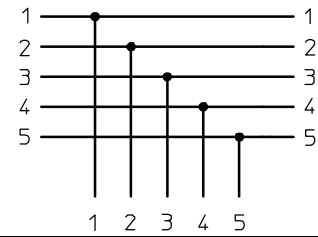
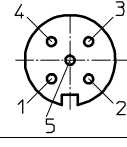
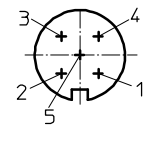
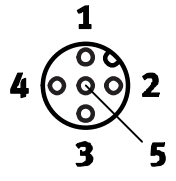
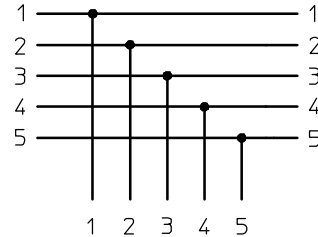
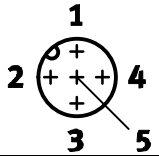
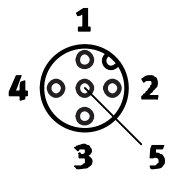
1) Corrosion resistance class 2 according to Festo standard 940 070  
 Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

# Plug connectors for fieldbuses

NEDU-L2R1-V10, M12, 5-pin – Technical data

FESTO

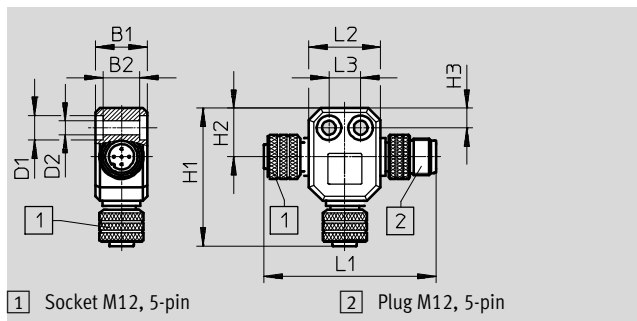
## Circuitry (socket/plug view)

| Socket  | Circuitry   | Plug   |
|---|---|--|
| <p>FB-TA</p>           | <br>    |   |
| <p>NEDU-L2R1-V10</p>  | <br> |  |

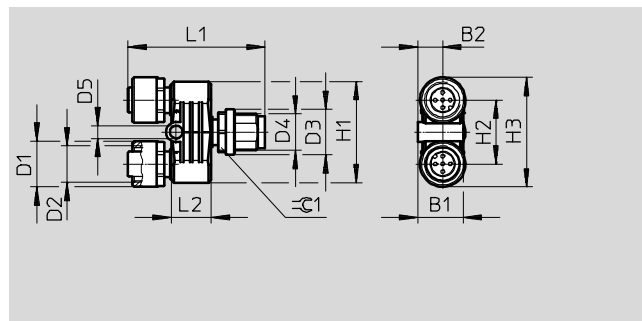
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

FB-TA



NEDU-L2R1-V10



8

| Type          | B1 | B2  | D1 | D2  | D3 | D4  | D5  | H1   | H2 | H3  | L1 | L2   | L3   | ⌀1 |
|---------------|----|-----|----|-----|----|-----|-----|------|----|-----|----|------|------|----|
| FB-TA         | 17 | 12  | 8  | 4.5 | –  | –   | –   | 45.2 | 16 | 6.5 | 57 | 23.5 | 10.4 | –  |
| NEDU-L2R1-V10 | 15 | 8.3 | 15 | M12 | 15 | M12 | 4.2 | 33.3 | 21 | 36  | 45 | 13.2 | –    | 13 |

## Ordering data

| Electrical connection | Product weight [g] | Part No. | Type                      |
|-----------------------|--------------------|----------|---------------------------|
| Plug M12, 5 pin       | –                  | 171175   | FB-TA-M12-5POL            |
| 2x socket, M8, 5-pin  | –                  | 2839867  | NEDU-L2R1-V10-M12G5-M12G5 |
| 2x socket, M12, 5-pin | 25                 |          |                           |

## T-adapter FB-TA

- Branch line for connecting and disconnecting fieldbus components
- Connected fieldbus components can be disconnected without interrupting signal transmission (to other components)



### General technical data

|                              |                    |               |
|------------------------------|--------------------|---------------|
| Type of mounting             |                    | Via union nut |
| Mounting position            |                    | Any           |
| Operating voltage range      | [V AC]             | Max. 10       |
|                              | [V DC]             | Max. 30       |
| Acceptable current load      | [A]                | 4             |
| Cable composition            | [mm <sup>2</sup> ] | 2x 0.25       |
| Cable diameter               | [mm]               | 5             |
| Protection class to EN 60529 |                    | IP67          |

### Materials

|              |  |                                |
|--------------|--|--------------------------------|
| Housing      |  | PA                             |
| Cable sheath |  | PVC                            |
| Pin contacts |  | Nickel-plated/tin-plated brass |

### Operating and environmental conditions

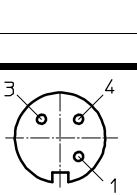


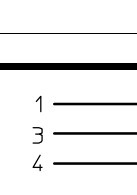
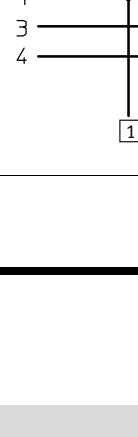

|                     |      |             |
|---------------------|------|-------------|
| Ambient temperature | [°C] | -25 ... +90 |
|---------------------|------|-------------|

# Plug connectors for fieldbuses

FB-TA, M12, 5-pin – Technical data

FESTO

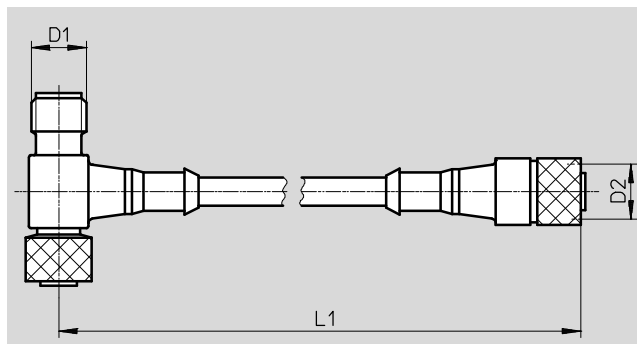
## Circuitry (socket/plug view)

| FB-TA   |  |   |
|---|--|---|
| Socket  | Circuitry  | Plug  |
|  |    |  |
| FB-TA-1   |  |   |
| Socket  | Circuitry  | Plug  |
|  | <br><div style="display: flex; flex-direction: column; gap: 5px;"> <div><span style="border: 1px solid black; padding: 2px;">1</span> White</div> <div><span style="border: 1px solid black; padding: 2px;">2</span> Black</div> <div><span style="border: 1px solid black; padding: 2px;">3</span> Screening</div> </div> |  |

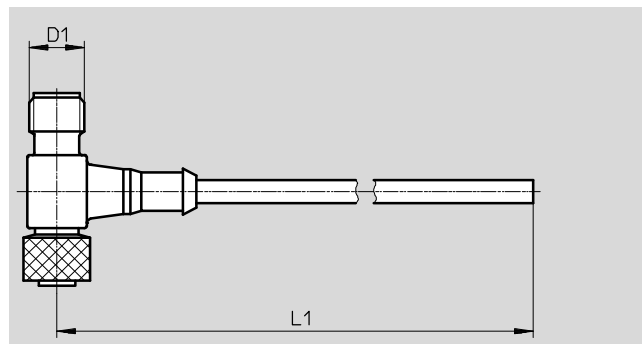
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

FB-TA



FB-TA-1



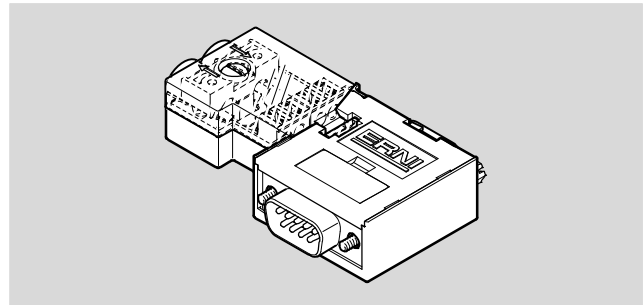
| Type    | D1  | D2  | L1  |
|---------|-----|-----|-----|
| FB-TA   | M12 | M12 | 150 |
| FB-TA-1 | M12 | -   | 140 |

## Ordering data

| Electrical connection  | Weight [g] | Part No.     | Type           |
|------------------------|------------|--------------|----------------|
| Plug M12, 5 pin        | 37         | <b>18498</b> | <b>FB-TA</b>   |
| Open cable end, 2-wire | 23         | <b>18499</b> | <b>FB-TA-1</b> |

**Plug**  
**NECU-S1W9**

- Plug
- 9-pin
- Can be assembled with any cable lengths
- Plug for PROFIBUS with terminating resistor and programming interface



## General technical data

|   |              |
|---|--------------|
| Electrical connection                       | Sub-D plug   |
|   | 9-pin        |
|   | IDC terminal |
| Programming interface                       | Sub-D socket |
|   | 9-pin        |
| Baud rate [Mbps]                            | 12           |
| Permissible cable Ø [mm]                    | 8            |
| Connection cross section [mm <sup>2</sup> ] | 0.08 ... 0.5 |
| Type of mounting                            | 4-40UNC      |
| Protection class                            | IP20         |

## Materials

|                   |                          |
|-------------------|--------------------------|
| Housing           | Reinforced polycarbonate |
| Note on materials | RoHS-compliant           |

## Operating and environmental conditions

|  |             |
|--|-------------|
| Ambient temperature [°C]                     | -20 ... +70 |
| Corrosion resistance class CRC <sup>1)</sup> | 1           |
| Relative air humidity [%]                    | 75 at 25 °C |

1) Corrosion resistance class 1 according to Festo standard 940 070  
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

# Plug connectors for fieldbuses

NECU-S1W9, Plug, Sub-D, 9-pin – Technical data

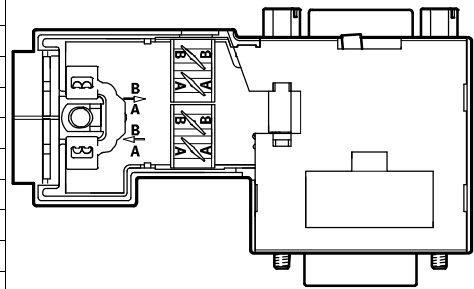
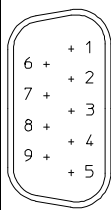
FESTO

## Pin allocation

Sub-D

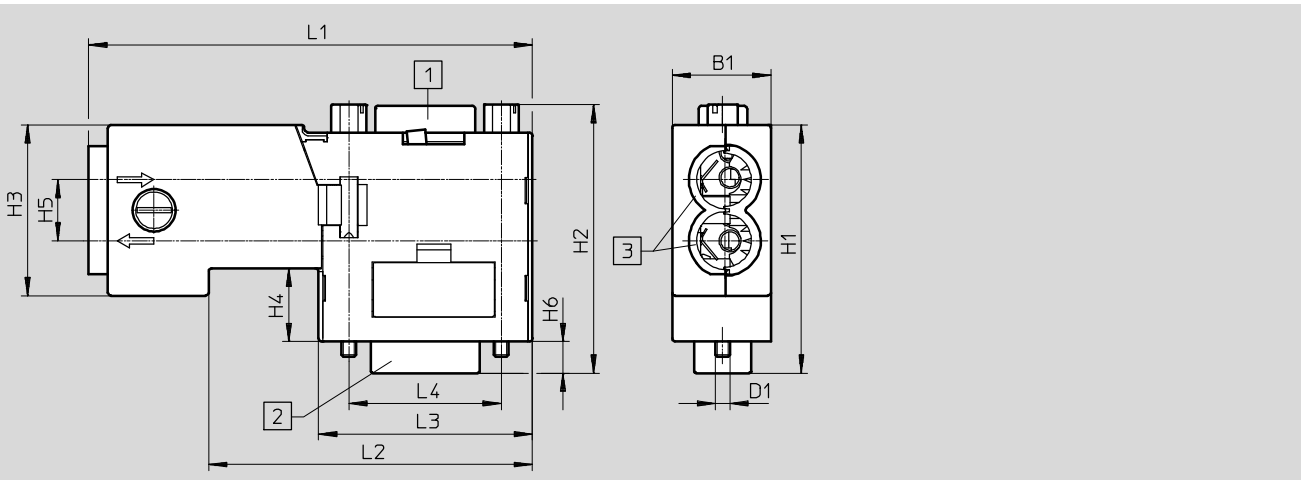
9-pin

| Pin        | Wire colour | Signal              | Terminal |
|------------|-------------|---------------------|----------|
| Sub-D plug |             |                     |          |
| 1          | -           | -                   | -        |
| 2          | -           | -                   | -        |
| 3          | Red         | RxD/TxD-P           | B        |
| 4          | -           | -                   | -        |
| 5          | -           | CAN                 | -        |
| 6          | -           | VP (supply voltage) | -        |
| 7          | -           | -                   | -        |
| 8          | Green       | RxD/TxD-N           | A        |
| 9          | -           | -                   | -        |
| Housing    | -           | -                   | -        |



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type             | B1   | D1      | H1   | H2   | H3 | H4 | H5 | H6  | L1   | L2   | L3   | L4 |
|------------------|------|---------|------|------|----|----|----|-----|------|------|------|----|
| NECU-S1W9-C2-APB | 16.2 | 4-40UNC | 40.7 | 44.2 | 28 | 12 | 10 | 5.2 | 72.8 | 53.1 | 35.1 | 25 |

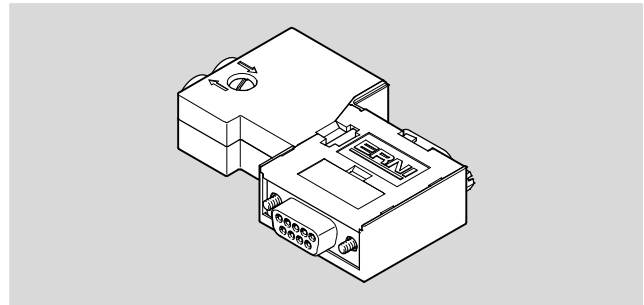
## Ordering data

| Electrical connection | Connection cross section [mm] | Part No.     | Type                           |
|-----------------------|-------------------------------|--------------|--------------------------------|
| Sub-D plug, 9-pin     | IDC terminal                  | 0.08 ... 0.5 | <b>574589</b> NECU-S1W9-C2-APB |



**Socket  
NECU-S1W9**

- Socket
- 9-pin
- Can be assembled with any cable lengths
- Socket for CANopen with terminating resistor and programming interface



## General technical data

|                          |                                 |
|--------------------------|---------------------------------|
| Electrical connection    | Sub-D socket                    |
|                          | 9-pin                           |
|                          | Screw terminal, can be screened |
| Programming interface    | Sub-D plug                      |
|                          | 9-pin                           |
| Baud rate                | [Mbps] 1                        |
| Permissible cable Ø      | [mm] 8                          |
| Connection cross section | [mm <sup>2</sup> ] 0.14 ... 0.5 |
| Type of mounting         | 4-40UNC                         |
| Protection class         | IP20                            |

## Materials

|                   |                          |
|-------------------|--------------------------|
| Housing           | Reinforced polycarbonate |
| Note on materials | RoHS-compliant           |

## Operating and environmental conditions

|  |                  |
|--|------------------|
| Ambient temperature                          | [°C] -20 ... +70 |
| Corrosion resistance class CRC <sup>1)</sup> | 1                |
| Relative air humidity                        | [%] 75 at 25 °C  |

1) Corrosion resistance class 1 according to Festo standard 940 070  
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

# Plug connectors for fieldbuses

NECU-S1W9, Sub-D, 9-pin – Technical data

FESTO

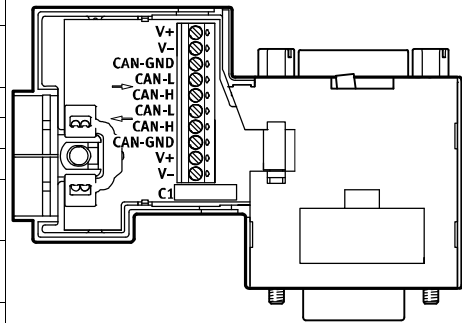
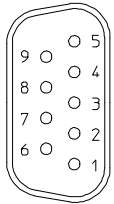
## Pin allocation

Sub-D

9-pin

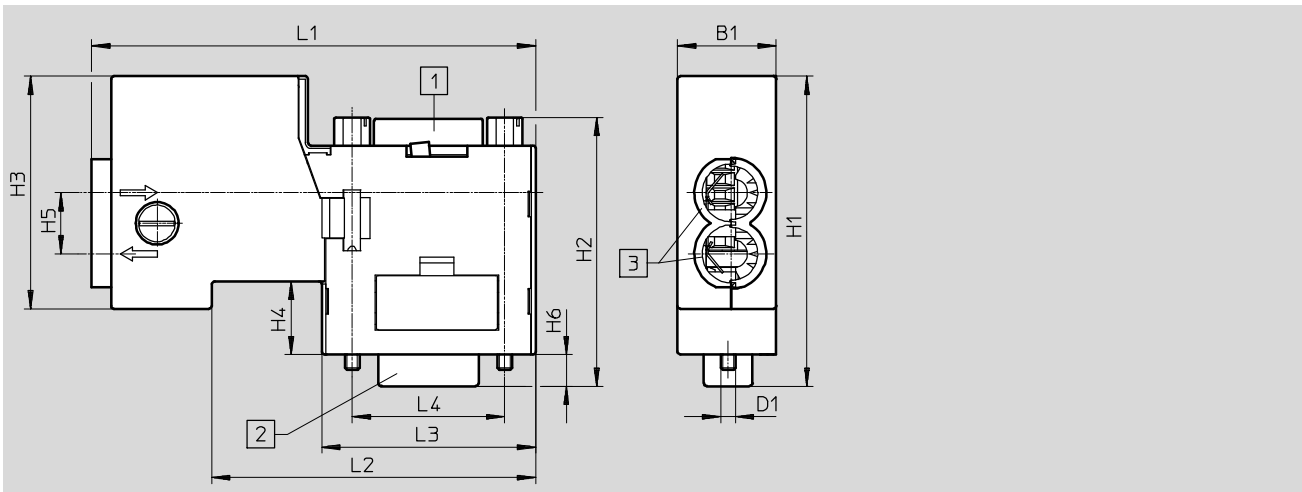
Sub-D plug

| Pin     | Wire colour | Signal                         | Terminal |
|---------|-------------|--------------------------------|----------|
| 1       | –           | –                              | –        |
| 2       | White       | Received/transmitted data low  | C-L      |
| 3       | Screening   | 0 V CAN interface              | GND      |
| 4       | –           | –                              | –        |
| 5       | –           | –                              | –        |
| 6       | Optional    | Optional screened connection   | V–       |
| 7       | Brown       | Received/transmitted data high | C-H      |
| 8       | –           | –                              | –        |
| 9       | Optional    | 24 V DC supply CAN interface   | V+       |
| Housing | –           | –                              | –        |



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type             | B1   | D1      | H1   | H2   | H3   | H4 | H5 | H6  | L1   | L2   | L3   | L4 |
|------------------|------|---------|------|------|------|----|----|-----|------|------|------|----|
| NECU-S1W9-C2-ACO | 16.2 | 4-40UNC | 50.8 | 43.8 | 38.1 | 12 | 10 | 5.2 | 72.8 | 53.1 | 35.1 | 25 |

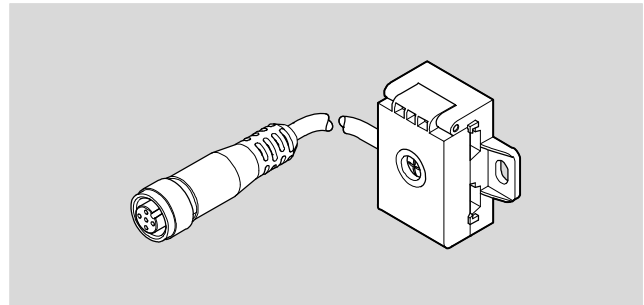
8

## Ordering data

| Electrical connection | Connection cross section [mm]                   | Part No. | Type             |
|-----------------------|---|----------|------------------|
| Sub-D socket, 9-pin   | Screw terminal, can be screened<br>0.14 ... 0.5 | 574588   | NECU-S1W9-C2-ACO |

## Cable socket NEFU-X2

- Cable socket for branching the AS-interface network at any desired point
- Reconnection from AS-interface flat cable to 5-pin M12 socket
- Reverse polarity protected



## General technical data

| Type  | NEFU-X22F-M12G4               | NEFU-X24F-1-M12G4 | NEFU-X24F-M12G4 |
|---|-------------------------------|-------------------|-----------------|
| Fieldbus interface                                | Socket, 4-pin, M12x1, A-coded |                   |                 |
| Nominal operating voltage, [V DC]<br>AS-interface | 26.5                          |                   |                 |
| Operating voltage, [V DC]<br>AS-interface         | 26.5 ... 31.6                 |                   |                 |
| Nominal operating voltage, [V DC]<br>load voltage | –                             | 24                | 24              |
| Operating voltage, [V DC]<br>load voltage         | –                             | 20.4 ... 26.4     | 20.4 ... 26.4   |
| Type of mounting                                  | Via through-hole              |                   |                 |
| Max. tightening torque [Nm]                       | 1.65                          |                   |                 |
| Protection class to EN 60529                      | IP65 (assembled)              |                   |                 |

## Materials

|                   |                |
|-------------------|----------------|
| Housing           | PA             |
| Cover             | PA             |
| Note on materials | RoHS-compliant |

## Operating and environmental conditions

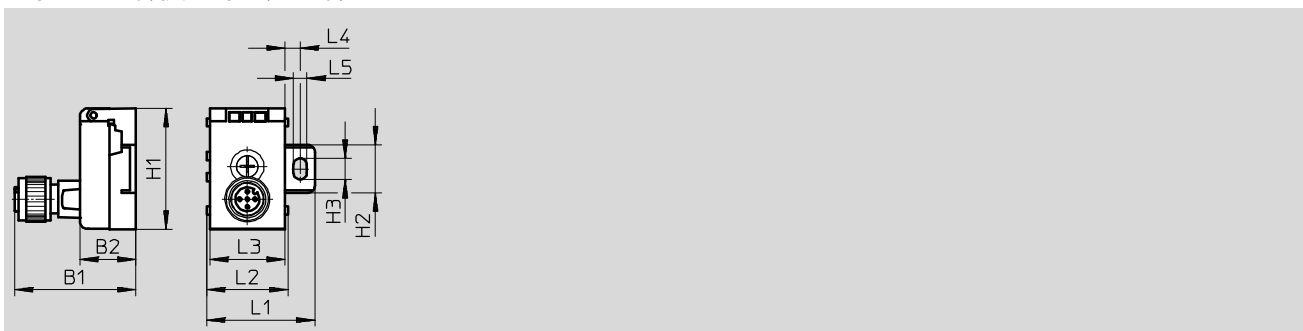
|   |                                   |
|---|-----------------------------------|
| Ambient temperature [°C]                      | –25 ... +75                       |
| Storage temperature [°C]                      | –25 ... +85                       |
| CE marking<br>(see declaration of conformity) | To EU EMC Directive <sup>1)</sup> |

1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: [www.festo.com](http://www.festo.com) → Support → User documentation.  
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

NEFU-X22F-M12G4 and NEFU-X24F-M12G4

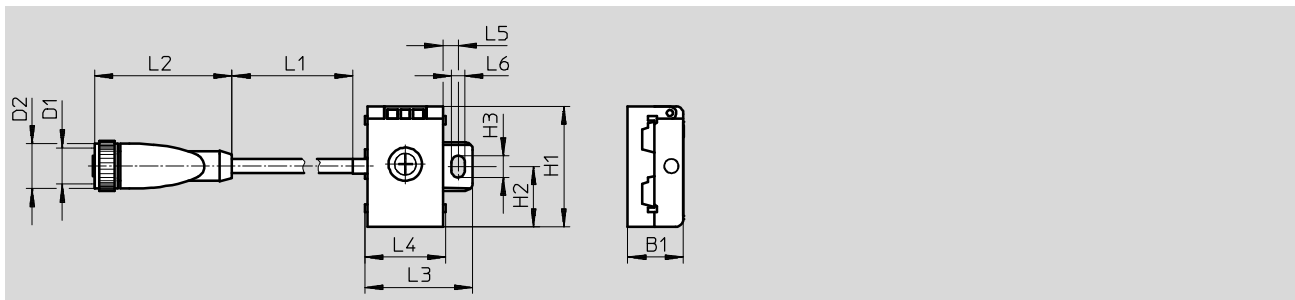


| Type            | B1 | B2 | H1 | H2 | H3 | L1 | L2 | L3 | L4 | L5 |
|-----------------|----|----|----|----|----|----|----|----|----|----|
| NEFU-X22F-M12G4 | 40 | 19 | 40 | 16 | 7  | 36 | 26 | 25 | 5  | 4  |
| NEFU-X24F-M12G4 |    |    |    |    |    |    |    |    |    |    |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

NEFU-X24F-1-M12G4



| Type              | B1 | D1  | D2 | H1 | H2 | H3 | L1   | L2 | L3 | L4 | L5 | L6 |
|-------------------|----|-----|----|----|----|----|------|----|----|----|----|----|
| NEFU-X24F-1-M12G4 | 19 | M12 | 15 | 40 | 20 | 7  | 1000 | 45 | 36 | 26 | 5  | 4  |

## Ordering data

|  | AS-interface connection     | Weight | Cable length | Part No. | Type              |
|--|-----------------------------|--------|--------------|----------|-------------------|
|  | Without load voltage supply | 30 g   | –            | 572225   | NEFU-X22F-M12G4   |
|  | With load voltage supply    | 30 g   | –            | 572226   | NEFU-X24F-M12G4   |
|  | With load voltage supply    | 60 g   | 1 m          | 572227   | NEFU-X24F-1-M12G4 |

## Ordering data – Accessories

|  | Designation                                      |                         | Part No. | Type                   |
|--|--|-------------------------|----------|------------------------|
|  | Straight sensor plug for cable Ø 2.5 mm          | M12, 4-pin              | 192008   | SEA-4GS-7-2,5          |
|  | Straight sensor plug                             | M12, 4-pin, PG7         | 18666    | SEA-GS-7               |
|  |  | M12, PG9, 4-pin         | 18778    | SEA-GS-9               |
|  | Plug M12 for 2 connecting cables                 | 4-pin, PG11             | 18779    | SEA-GS-11-DUO          |
|  | Connecting cable, straight plug, straight socket | M12, 4-pin/5-pin, 0.2 m | 542129   | NEBU-M12G5-F-0.2-M12G4 |
|  |  | M12, 4-pin, 2.5 m       | 18684    | KM12-M12-GSGD-2,5      |
|  |  | M12, 4-pin, 5 m         | 18686    | KM12-M12-GSGD-5        |
|  | Connecting cable, straight plug, angled socket   | M12, 4-pin, 1 m         | 185499   | KM12 M12-GSWD-1-4      |

**Plug/plug socket  
FBS/FBSD**

- Plug/plug socket for fieldbus connection
- Can be assembled with any cable length
- 5-pin plug/4-pin or 5-pin socket
- With screw terminals
- Wire cross section of up to 0.75 mm<sup>2</sup>



**General technical data**




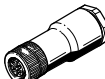

| Type                                    | FBSD...                     | FBS...  |                                     |
|---|-----------------------------|---|-------------------------------------|
| Type of mounting                        | Union nut M12               |   |                                     |
| Mounting position                       | Any                         |   |                                     |
| Electrical connection                   | Type A                      |   |                                     |
| Based on standard                       | EN 61076-2-101, EN 61984    |   |                                     |
| Connection cross section                | [mm <sup>2</sup> ]          | 0.25 ... 0.75                                       |                                     |
| Max. tightening torque for locking      | [Nm]                        | 0.5   |                                     |
| Acceptable current load at 40 °C        | [A]                         | 4   |                                     |
| Protection class to EN 60529            | IP67 (assembled)            |   |                                     |
| Material                                | of housing                  | Reinforced polyamide                                |                                     |
|   | of contacts                 | Brass, coated with white bronze                     | Nickel-plated and gold-plated brass |
|   |                             | FBSD-GD-9-5POL: nickel-plated and gold-plated brass |                                     |
|   | of union nut                | Nickel-plated die-cast zinc                         |                                     |
| of seals                                | Nitrile rubber              |   |                                     |
| Note on materials                       | Conforms to RoHS            |   |                                     |
| Fire protection classification to UL94  | HB, V2                      |   |                                     |
| CE mark (see declaration of conformity) | To EU Low Voltage Directive |   |                                     |
| Degree of contamination                 | 3                           |   |                                     |
| Ambient temperature                     | [°C]                        | -40 ... +85   |                                     |

# Plug connectors for fieldbuses

FBS/FBSD – Technical data

FESTO

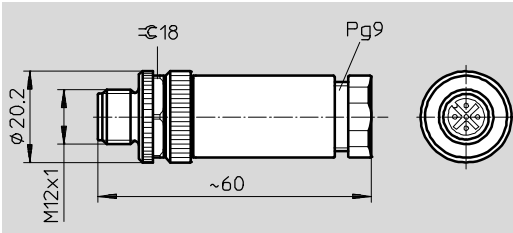
## Ordering data

|  | Electrical connection                              | Operating voltage range |        | Cable connection | Permitted cable Ø [mm] | Product weight [g] | Part No.      | Type                   |
|--|--|-------------------------|--------|------------------|------------------------|--------------------|---------------|------------------------|
|  |  | [V AC]                  | [V DC] |                  |                        |                    |               |                        |
|   | Straight plug, 5-pin, screw terminal               | 60                      | 60     | Pg9              | 6 ... 8                | 23.5               | <b>175380</b> | <b>FBS-M12-5GS-PG9</b> |
|   | Straight socket, 4-pin, screw terminal             | 250                     | 250    | Pg7              | 4 ... 6                | 28                 | <b>18497</b>  | <b>FBSD-GD-7</b>       |
|   | Straight socket, 4-pin, screw terminal             | 250                     | 250    | Pg9              | 8 ... 9.5              | 29                 | <b>18495</b>  | <b>FBSD-GD-9</b>       |
|  | Straight socket, 5-pin, screw terminal (DeviceNet) | 60                      | 60     | Pg9              | 6 ... 8                | 33                 | <b>18324</b>  | <b>FBSD-GD-9-5POL</b>  |
|   | Straight socket, 4-pin, screw terminal             | 250                     | 250    | Pg13.5           | 10 ... 12              | 40                 | <b>18496</b>  | <b>FBSD-GD-13,5</b>    |
|  | Angled socket, 4-pin, screw terminal               | 250                     | 250    | Pg7              | 4 ... 6                | 25                 | <b>18524</b>  | <b>FBSD-WD-7</b>       |
|  | Angled socket, 4-pin, screw terminal               | 250                     | 250    | Pg9              | 6 ... 8                | 30                 | <b>18525</b>  | <b>FBSD-WD-9</b>       |

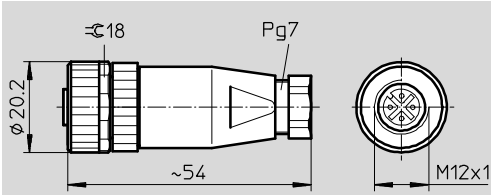
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

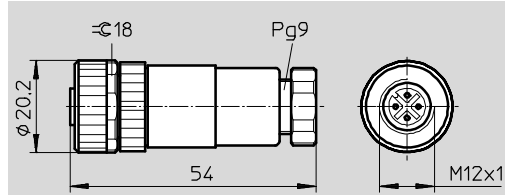
FBS-M12-5GS-PG9



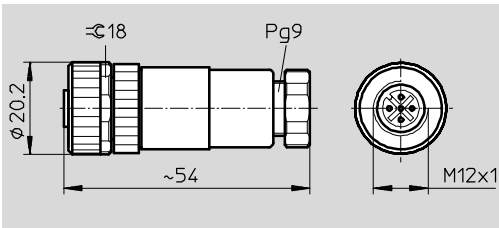
FBSD-GD-7



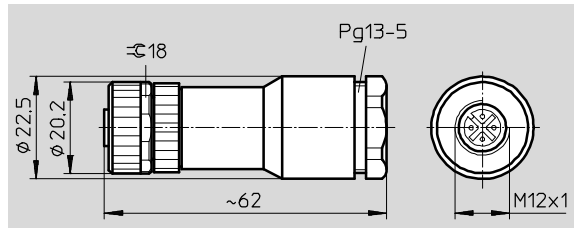
FBSD-GD-9



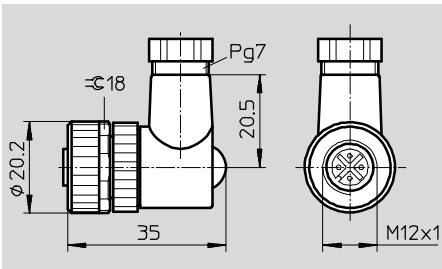
FBSD-GD-9-5POL



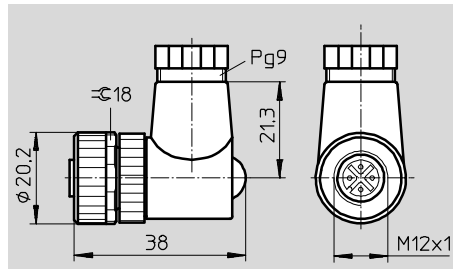
FBSD-GD-13,5



FBSD-WD-7



FBSD-WD-9



**Bus connection FBSD-KL**

- Plug socket for fieldbus connection



## General technical data

|   |   |
|---|---|
| Electrical connection                       | Angled socket, 5-pin; screw terminal, 5-pin |
| Operating voltage range [V DC]              | 24  |
| Acceptable current load [A]                 | 12  |
| Connection cross section [mm <sup>2</sup> ] | 0.2 ... 2.5                                 |
| Type of mounting                            | 2x M2.5x12 screws                           |
| Mounting position                           | Any   |
| Protection class                            | IP20  |

## Materials

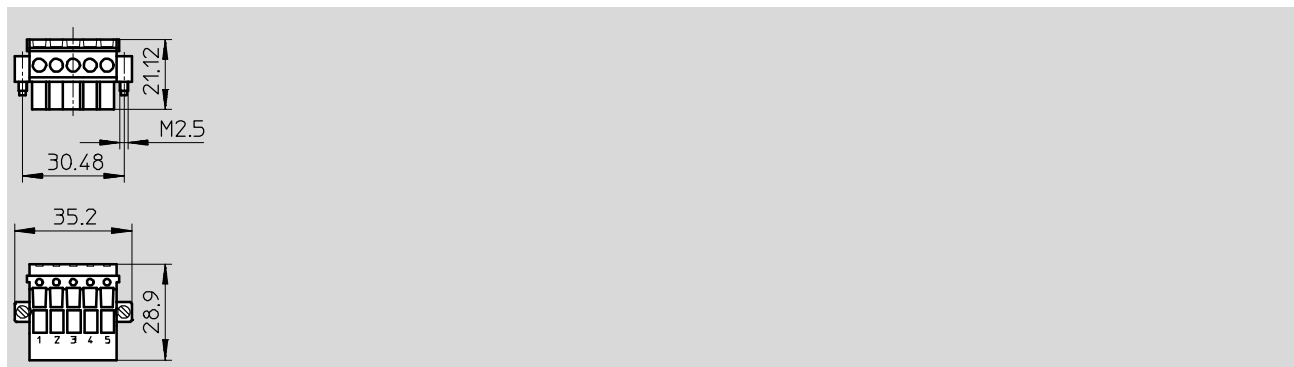
|             |                           |
|-------------|---------------------------|
| Pin contact | Gold-plated bronze        |
| Housing     | Polyamide (colour: black) |

## Operating and environmental conditions

|                          |             |
|--------------------------|-------------|
| Ambient temperature [°C] | -5 ... +50  |
| Storage temperature [°C] | -20 ... +70 |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



## Ordering data

| Electrical connection                       | Weight [g] | Part No. | Type           |
|---|------------|----------|----------------|
| Angled socket, 5-pin; screw terminal, 5-pin | 20         | 525635   | FBSD-KL-2x5POL |



**Plug**  
**NECU-M-S-B12G5**

- Plug
- 5-pin
- B-coded for PROFIBUS
- Can be assembled with any cable lengths



## General technical data

|                                  |                                 |               |
|----------------------------------|---------------------------------|---------------|
| Electrical connection            | Straight plug, M12x1            |               |
|                                  | 5-pin                           |               |
|                                  | Screw terminal, can be screened |               |
| Plug coding                      | B-coded                         |               |
| Operating voltage range          | [V DC]                          | 0 ... 60      |
|                                  | [V AC]                          | 0 ... 60      |
| Surge resistance                 | [kV]                            | 1.5           |
| Acceptable current load at 40 °C | [A]                             | 4             |
| Based on standard                | EN 61076-2-101                  |               |
|                                  | EN 61984                        |               |
| Transmission characteristics     | DIN EN 50173/CAT 5              |               |
| Permissible cable Ø              | [mm]                            | 6 ... 8       |
| Connection cross section         | [mm <sup>2</sup> ]              | 0.14 ... 0.75 |
| Protection class                 | IP67                            |               |

## Materials

|                   |                             |
|-------------------|-----------------------------|
| Housing           | Nickel-plated die-cast zinc |
| Pin contact       | Gold-plated brass           |
| Note on materials | Free of copper and PTFE     |
|                   | RoHS-compliant              |

## Operating and environmental conditions

|   |                             |             |
|---|-----------------------------|-------------|
| Ambient temperature                           | [°C]                        | -25 ... +85 |
| Corrosion resistance class CRC <sup>1)</sup>  |                             | 1           |
| Degree of contamination                       |                             | 3           |
| CE marking<br>(see declaration of conformity) | To EU Low Voltage Directive |             |

1) Corrosion resistance class 1 according to Festo standard 940 070  
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

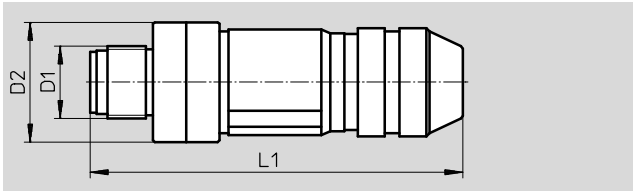
# Plug connectors for fieldbuses

NECU-M-S-B12G5, M12, 5-pin – Technical data

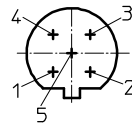
FESTO

## Dimensions

NECU-M-S-B12G5



Pin allocation



Download CAD data → [www.festo.com](http://www.festo.com)

| Type           | D1  | D2 | L1   |
|----------------|-----|----|------|
| NECU-M-S-B12G5 | M12 | 20 | 62.5 |

## Ordering data

| Electrical connection       |                                 | Connection cross section<br>[mm <sup>2</sup> ] | Weight<br>[g] | Part No.       | Type                        |
|-----------------------------|---------------------------------|--|---------------|----------------|-----------------------------|
| Plug M12x1, 5-pin, straight | Screw terminal, can be screened | 0.14 ... 0.75                                  | 46            | <b>1066354</b> | <b>NECU-M-S-B12G5-C2-PB</b> |

**Socket**  
**NECU-M-B12G5**

- Socket
- 5-pin
- Can be assembled with any cable lengths



## General technical data

|                                  |                                 |               |
|----------------------------------|---------------------------------|---------------|
| Electrical connection            | Straight socket, M12x1          |               |
|                                  | 5-pin                           |               |
|                                  | Screw terminal, can be screened |               |
| Plug coding                      | B-coded                         |               |
| Operating voltage range          | [V DC]                          | 0 ... 125     |
|                                  | [V AC]                          | 0 ... 125     |
| Surge resistance                 | [kV]                            | 1.25          |
| Acceptable current load at 40 °C | [A]                             | 4             |
| Based on standard                | EN 61076-2-101                  |               |
|                                  | EN 61984                        |               |
| Transmission characteristics     | DIN EN 50173/CAT 5              |               |
| Permissible cable Ø              | [mm]                            | 6 ... 8       |
| Connection cross section         | [mm <sup>2</sup> ]              | 0.14 ... 0.75 |
| Protection class                 | IP67                            |               |

## Materials

|                   |                             |
|-------------------|-----------------------------|
| Housing           | Nickel-plated die-cast zinc |
| Pin contact       | Gold-plated brass           |
| Note on materials | RoHS-compliant              |

## Operating and environmental conditions

|  |                             |             |
|--|-----------------------------|-------------|
| Ambient temperature                          | [°C]                        | -25 ... +85 |
| Corrosion resistance class CRC <sup>1)</sup> |                             | 1           |
| Degree of contamination                      |                             | 3           |
| CE marking (see declaration of conformity)   | To EU Low Voltage Directive |             |

1) Corrosion resistance class 1 according to Festo standard 940 070  
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

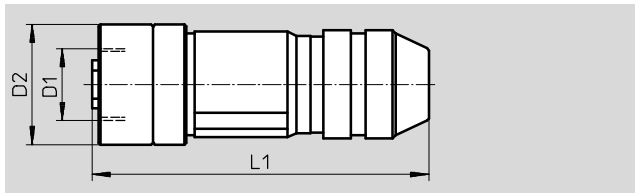
# Plug connectors for fieldbuses

NECU-M-B12G5, M12, 5-pin – Technical data

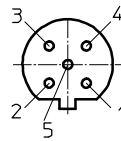
FESTO

## Dimensions

NECU-M-B12G5



Pin allocation



Download CAD data → [www.festo.com](http://www.festo.com)

| Type         | D1  | D2 | L1 |
|--------------|-----|----|----|
| NECU-M-B12G5 | M12 | 20 | 56 |

## Ordering data

| Electrical connection         | Connection cross section [mm <sup>2</sup> ] | Part No.       | Type                      |
|-------------------------------|---|----------------|---------------------------|
| Socket M12x1, 5-pin, straight | 0.14 ... 0.75                               | <b>1067905</b> | <b>NECU-M-B12G5-C2-PB</b> |

**Terminating resistor CACR-B12G5**

- Terminating resistor for PROFIBUS



### General technical data

|                                |                  |
|--------------------------------|------------------|
| Electrical connection          | Straight plug    |
|                                | 4-pin            |
|                                | M12x1            |
| Plug coding                    | B (for PROFIBUS) |
| Operating voltage range [V DC] | 0 ... 5          |
| Degree of contamination        | 3                |
| Protection class to EN 60529   | IP67             |

### Materials

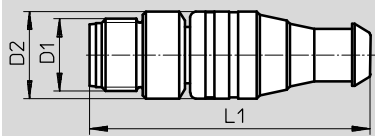
|                   |                   |
|-------------------|-------------------|
| Housing           | TPE-U(PU)         |
| Pin contact       | Gold-plated brass |
| Note on materials | RoHS-compliant    |

### Operating and environmental conditions

|                          |             |
|--------------------------|-------------|
| Ambient temperature [°C] | -25 ... +80 |
|--------------------------|-------------|

### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type         | D1  | D2   | L1    |
|--------------|-----|------|-------|
| CACR-S-B12G5 | M12 | 14.5 | 46.75 |

### Ordering data

|                                   | Part No. | Type                |
|-----------------------------------|----------|---------------------|
| Terminating resistor for PROFIBUS | 1072128  | CACR-S-B12G5-220-PB |

# Plug connectors for fieldbuses

FBS-SUB-9-BU-...-B – Technical data

FESTO

## Plug FBS-SUB-9-BU

- Fieldbus socket with 9-pin Sub-D connection
- Variants for different fieldbus systems
- Position of DIL switches can be read externally
- Easy to assemble



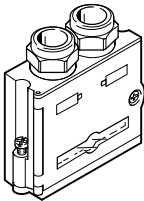
### General technical data

|                              |                     |                      |
|------------------------------|---------------------|----------------------|
| Type of mounting             | 2 M3x20 screws      |                      |
| Cable connector              | Pg9                 |                      |
| Electrical connection        | 9-pin socket, Sub-D |                      |
| Permissible cable diameter   | [mm]                | 5 ... 10             |
| Protection class to EN 60529 | IP65/67 (assembled) |                      |
| Material                     | Housing             | Reinforced polyamide |
|                              | Seal                | Nitrile rubber       |
|                              | Union nut           | Nickel-plated brass  |
|                              | Screws              | Steel                |
| Material note                | RoHS-compliant      |                      |
| Height/length/width          | [mm]                | 62/61/20             |

### Operating and environmental conditions

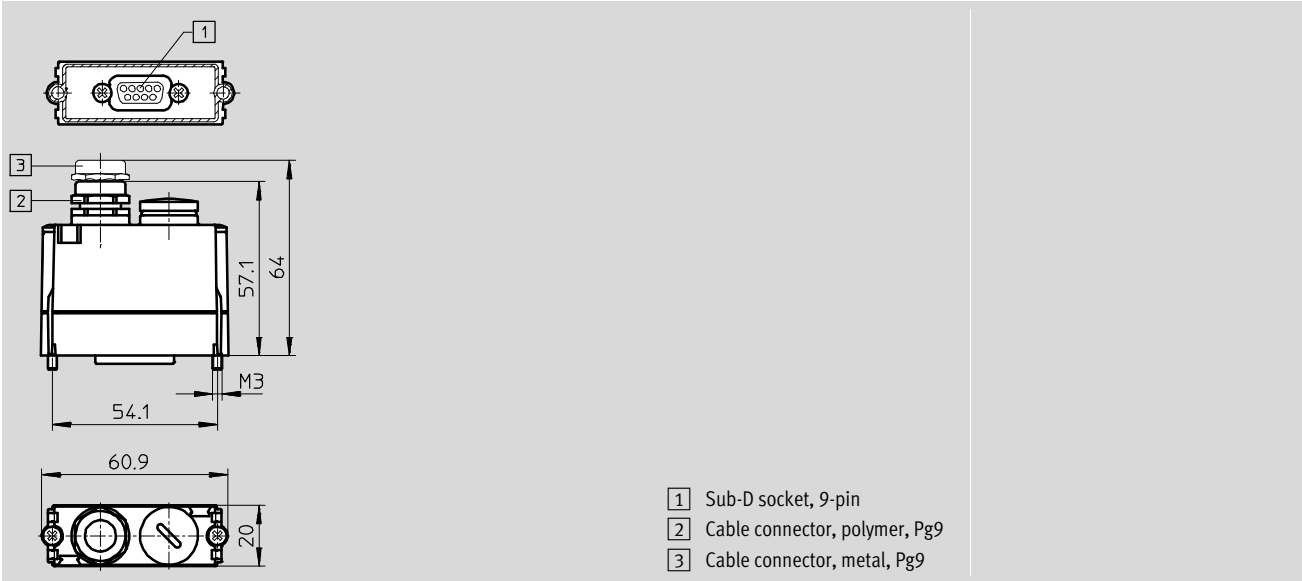
|                       |                     |             |
|-----------------------|---------------------|-------------|
| Ambient temperature   | [°C]                | 0 ... +50   |
| Storage temperature   | [°C]                | -20 ... +70 |
| Relative air humidity | 95%, non-condensing |             |

### Ordering data

|   | Additional functions   | Fieldbus interface   | Product weight [g] | Type                         | Part No.      |
|---|------------------------|--|--------------------|------------------------------|---------------|
|  | Integrated RBST bridge | INTERBUS nodes CPX and CPV<br>1x 5 spring-loaded terminals                                   | 60                 | <b>FBS-SUB-9-BU-IB-B</b>     | <b>532218</b> |
|   | -                      | DeviceNet/Can CPX and CPV<br>2x 5 spring-loaded terminals<br>BUS In - BUS Out looped through | 60                 | <b>FBS-SUB-9-BU-2x5POL-B</b> | <b>532219</b> |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



# Plug connectors for fieldbuses

FBS-SUB-9, Sub-D, 9-pin – Technical data

FESTO

## Plug FBS-SUB-9

- Fieldbus plug with 9-pin Sub-D connection
- Variants for different fieldbus systems
- Position of DIL switches can be read externally
- Easy assembly



## General technical data

| Type                             | FBS-SUB-9-GS-DB-B                          | FBS-SUB-9-GS-IB-B      | FBS-SUB-9-GS-2X4POL-B           | FBS-SUB-9-GS-1X9POL-B |
|----------------------------------|--|------------------------|---------------------------------|-----------------------|
| Electrical connection            | Plug, 9-pin, Sub-D                         |                        |                                 |                       |
| Control elements                 | DIL switches                               | –                      | –                               | –                     |
| Note for fieldbus interface      | –  | –                      | BUS In - BUS Out looped through | –                     |
| Additional functions             | Switching off of outgoing fieldbus segment | Integrated RBST bridge | –                               | –                     |
| Permissible cable diameter [mm]  | 5 ... 10                                   |                        |                                 |                       |
| Degree of protection to EN 60529 | IP65, IP67 (assembled)                     |                        |                                 |                       |
| Height/length/width [mm]         | 62/61/20                                   |                        |                                 |                       |

## General technical data

| Type                             | FBS-SUB-9-WS...    |
|----------------------------------|--------------------|
| Electrical connection            | Plug, 9-pin, Sub-D |
| Permissible cable diameter [mm]  | 4.5 ... 8          |
| Degree of protection to EN 60529 | IP40               |

## Materials

| Type              | FBS-SUB-9-GS... | FBS-SUB-9-GS-1X9POL-B | FBS-SUB-9-WS... |
|-------------------|-----------------|-----------------------|-----------------|
| Housing           | PA reinforced   | PA reinforced         | Thermoplastic   |
| Seals             | NBR             | NBR                   | –               |
| Screws            | Steel           | Steel                 | –               |
| Union nut         | Brass           | Brass                 | –               |
| Note on materials | RoHS-compliant  | –                     | –               |

## Operating and environmental conditions

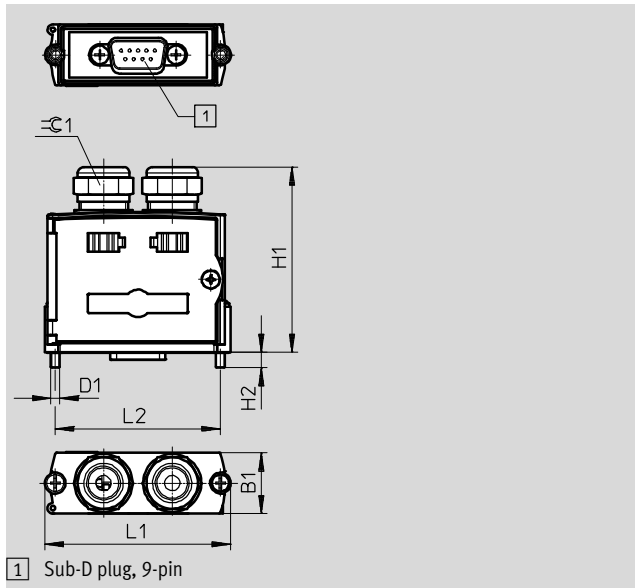
| Type                            | FBS-SUB-9-GS...    | FBS-SUB-9-GS-1X9POL-B             | FBS-SUB-9-WS... |
|---------------------------------|--------------------|-----------------------------------|-----------------|
| Ambient temperature [°C]        | 0 ... +50          | 0 ... +50                         | –20 ... +70     |
| Storage temperature [°C]        | –20 ... +70        | –20 ... +70                       | –               |
| Relative air humidity [%]       | 95, non-condensing | 95, non-condensing                | –               |
| CE marking                      | –                  | To EU EMC Directive <sup>1)</sup> | –               |
| (see declaration of conformity) | –                  | To EU Low Voltage Directive       | –               |

1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: [www.festo.com](http://www.festo.com) → Support → User documentation.  
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

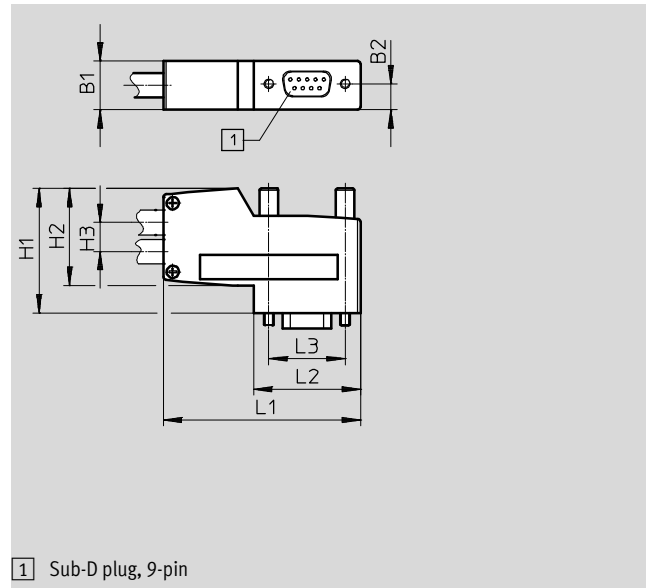


## Dimensions

FBS-SUB-9-GS...



FBS-SUB-9-WS...



| Type            | B1 | B2  | D1    | H1   | H2   | H3  | L1   | L2   | L3 | ⌀C1 |
|-----------------|----|-----|-------|------|------|-----|------|------|----|-----|
| FBS-SUB-9-GS... | 20 | –   | M3x20 | 60.5 | 5    | –   | 60.9 | 54.1 | –  | 17  |
| FBS-SUB-9-WS... | 16 | 8.5 | –     | 40.8 | 31.8 | 9.5 | 64.6 | 35   | 25 | –   |

## Ordering data

|  | Electrical connection | Protocol | Fieldbus interface           | Product weight [g] | Part No. | Type                  |
|--|-----------------------|----------|------------------------------|--------------------|----------|-----------------------|
|  | Straight plug         | PROFIBUS | 2x 2 spring-loaded terminals | 60                 | 532216   | FBS-SUB-9-GS-DP-B     |
|  |                       | INTERBUS | 1x 5 spring-loaded terminals | 60                 | 532217   | FBS-SUB-9-GS-IB-B     |
|  |                       | CC-Link  | 2x 4 spring-loaded terminals | 60                 | 532220   | FBS-SUB-9-GS-2x4POL-B |
|  |                       | RS232    | 1x 9 spring-loaded terminals | 60                 | 534497   | FBS-SUB-9-GS-1x9POL-B |
|  | Angled plug           | PROFIBUS | –                            | 43                 | 533780   | FBS-SUB-9-WS-PB-K     |
|  |                       | CANopen  | –                            | 45.9               | 533783   | FBS-SUB-9-WS-CO-K     |

# Plug connectors for fieldbuses

FBA-2/FBA-1 – Technical data

FESTO

## Bus connection FBA

- Sub-D 9-pin adapter
- Can be assembled with any cable length
- Protection class IP20 to IP65



## General technical data

| Type  | FBA-2-M12-5POL  | FBA-2-M12-5POL-RK                                     | FBA-1-SL                                     | FBA-1-KL                                      |
|---|---|---|--|---|
| Electrical connection                       | Sub-D straight socket, 9-pin;<br>M12 plug/socket, 5-pin | Sub-D straight plug, 9-pin;<br>M12 plug/socket, 5-pin | Sub-D straight socket, 9-pin;<br>plug, 5-pin | M8x1 plug, 4-pin, straight,<br>screw terminal |
| Operating voltage range [V DC]              | 24  |   |  |   |
| Acceptable current load [A]                 | 4   | 4   | 4  | 7.5   |
| Connection cross section [mm <sup>2</sup> ] | –   |   |  |   |
| Type of mounting                            | 2x M3x20 screws   |   |  |   |
| Mounting position                           | Any   |   |  |   |
| Protection class                            | IP65  | IP65  | IP40   | IP20  |

## Materials

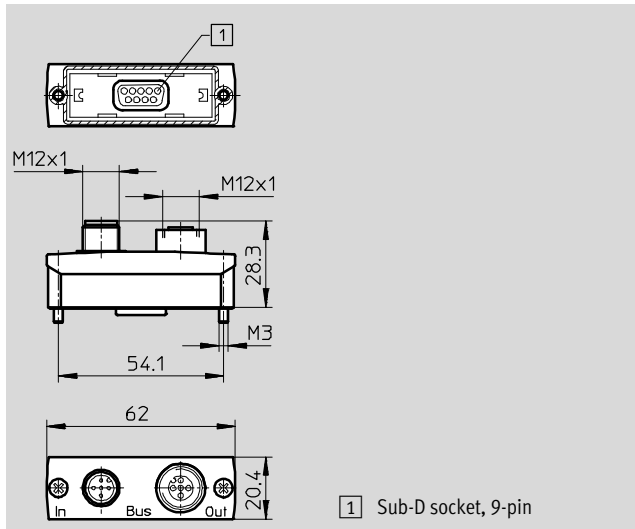
|                   |                    |
|-------------------|--------------------|
| Pin contact       | Gold-plated bronze |
| Housing           | Polyamide          |
| Note on materials | RoHS-compliant     |

## Operating and environmental conditions

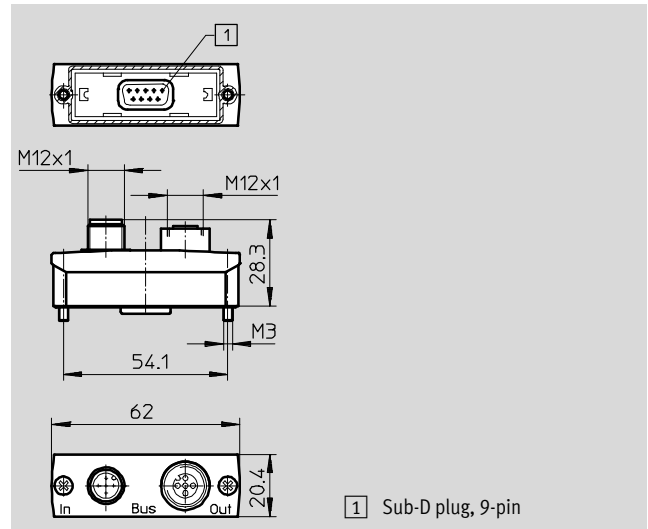
|                          |             |
|--------------------------|-------------|
| Ambient temperature [°C] | –5 ... +50  |
| Storage temperature [°C] | –20 ... +70 |

## Dimensions

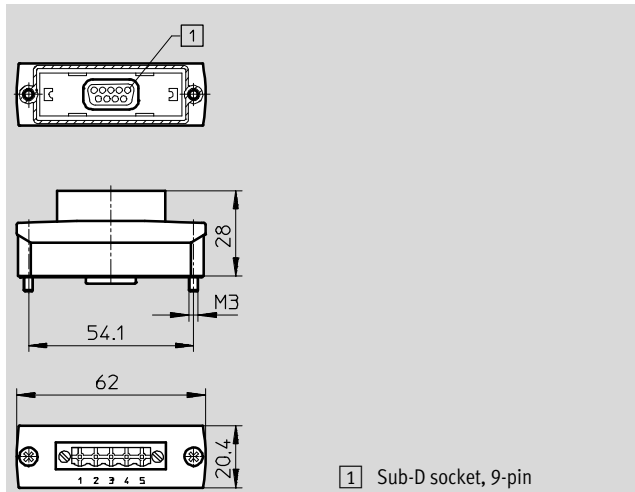
FBA-2-M12-5POL



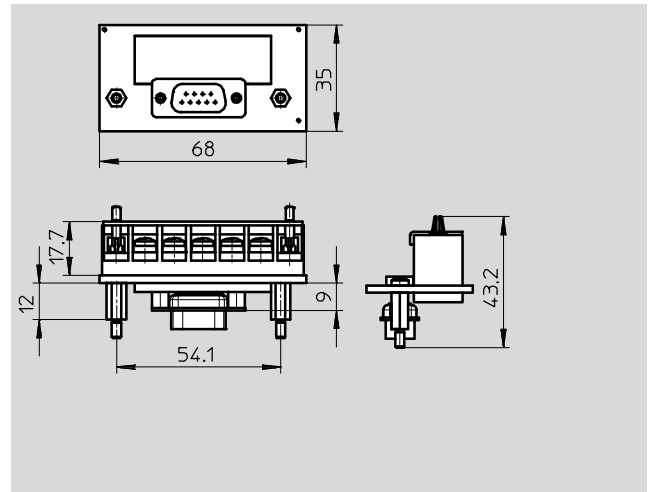
FBA-2-M12-5POL-RK



FBA-1-SL...



FBA-1-KL...



## Pin allocation – Sub-D/opposite side

| FBA-2-M12-5POL   |         |     |      |
|------------------|---------|-----|------|
| Sub-D connection | Pin     | Pin | Plug |
|                  | 1       | -   |      |
|                  | 2       | 5   |      |
|                  | 3       | 3   |      |
|                  | 4       | -   |      |
|                  | 5       | 1   |      |
|                  | 6       | -   |      |
|                  | 7       | 4   |      |
|                  | 8       | -   |      |
|                  | 9       | 2   |      |
|                  | Housing | 1   |      |

| FBA-2-M12-5POL-RK |         |         |        |
|-------------------|---------|---------|--------|
| Sub-D connection  | Pin     | Pin     | Socket |
|                   | 1       | 5       |        |
|                   | 2       | -       |        |
|                   | 3       | 4       |        |
|                   | 4       | -       |        |
|                   | 5       | -       |        |
|                   | 6       | -       |        |
|                   | 7       | -       |        |
|                   | 8       | 2       |        |
|                   | 9       | -       |        |
|                   | Housing | Housing |        |

| FBA-1-SL-5POL    |         |     |      |
|------------------|---------|-----|------|
| Sub-D connection | Pin     | Pin | Plug |
|                  | 1       | -   |      |
|                  | 2       | 2   |      |
|                  | 3       | 1   |      |
|                  | 4       | -   |      |
|                  | 5       | 3   |      |
|                  | 6       | -   |      |
|                  | 7       | 4   |      |
|                  | 8       | -   |      |
|                  | 9       | 5   |      |
|                  | Housing | 3   |      |

| FBA-1-KL-5POL    |         |     |                |
|------------------|---------|-----|----------------|
| Sub-D connection | Pin     | Pin | Terminal strip |
|                  | 1       | -   |                |
|                  | 2       | DA  |                |
|                  | 3       | DG  |                |
|                  | 4       | -   |                |
|                  | 5       | FG  |                |
|                  | 6       | -   |                |
|                  | 7       | DB  |                |
|                  | 8       | -   |                |
|                  | 9       | -   |                |
|                  | Housing | SLD |                |

| Ordering data |   |            |               |                          |
|---------------|---|------------|---------------|--------------------------|
|               | Electrical connection                                   | Weight [g] | Part No.      | Type                     |
|               | Sub-D straight socket, 9-pin;<br>M12 plug/socket, 5-pin | 28         | <b>525632</b> | <b>FBA-2-M12-5POL</b>    |
|               | Sub-D straight plug, 9-pin;<br>M12 plug/socket, 5-pin   | 37         | <b>533118</b> | <b>FBA-2-M12-5POL-RK</b> |
|               | Sub-D straight socket, 9-pin;<br>plug, 5-pin            | 26         | <b>525634</b> | <b>FBA-1-SL-5POL</b>     |
|               | Sub-D straight plug, 9-pin;<br>screw terminal, 5-pin    | 47         | <b>197962</b> | <b>FBA-1-KL-5POL</b>     |

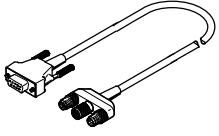
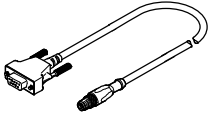
| Ordering data – Accessories |   |            |                |                             |
|-----------------------------|---|------------|----------------|-----------------------------|
|                             | Electrical connection   | Weight [g] | Part No.       | Type                        |
| For FBA-2-M12-5POL          |   |            |                |                             |
|                             | Socket M12x1, 5-pin, straight   | 33         | <b>18324</b>   | <b>FBSD-GD-9-5POL</b>       |
|                             | Plug M12x1, 5-pin, straight   | 23.5       | <b>175380</b>  | <b>FBS-M12-5GS-PG9</b>      |
| For FBA-2-M12-5POL-RK       |   |            |                |                             |
|                             | Socket M12x1, 5-pin, straight   | 48         | <b>1067905</b> | <b>NECU-M-B12G5-C2-PB</b>   |
|                             | Plug M12x1, 5-pin, straight   | 46         | <b>1066354</b> | <b>NECU-M-S-B12G5-C2-PB</b> |
| For FBA-1-SL-5POL           |   |            |                |                             |
|                             | <ul style="list-style-type: none"> <li>• Socket, 5-pin, angled</li> <li>• Screw terminal, 5-pin</li> <li>• Protection class IP20</li> </ul> | 20         | <b>525635</b>  | <b>FBSD-KL-2x5POL</b>       |

# Plug connectors for fieldbuses

FBA-PB/FBA-CO, for Motor units MTR-DCI – Technical data

FESTO

## Ordering data – Plugs

|   | Brief description   | Part No.       | Type                      |
|---|---|----------------|---------------------------|
| <b>Fieldbus adapter for Profibus</b>  |   |                |                           |
|  | <ul style="list-style-type: none"><li>– 9-pin Sub-D plug to 5-pin round M12 plug/socket, plus round M12 plug for logic voltage supply</li><li>– Bus terminating resistor must be connected externally</li></ul> | <b>537 934</b> | <b>FBA-PB-SUB-9-3XM12</b> |
| <b>Fieldbus adapter for CANopen and DeviceNet</b>                                 |   |                |                           |
|  | <ul style="list-style-type: none"><li>– 9-pin Sub-D plug to 5-pin round M12 plug</li><li>– Bus terminating resistor must be connected externally</li></ul>  | <b>540 324</b> | <b>FBA-CO-SUB-9-M12</b>   |

**Connecting piece**  
**KVI-CP-3-SSD**

- Connector for fieldbus connection (CP bus valve terminal type 04, CPV, type 03 and CPI installation system)
- 5-pin
- Straight socket/straight plug



### General technical data

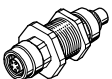
|                               |                           |
|-------------------------------|---------------------------|
| Type                          | KVI-...-SSD               |
| Type of mounting              | Via external thread       |
| Mounting position             | Any                       |
| Nominal operating voltage [V] | 24 DC                     |
| Protection class to EN 60529  | IP65/67                   |
| Material of casing            | Nickel-plated brass       |
| Material of contacts          | Copper alloy, gold plated |
| Material of union nut         | Nickel-plated brass       |
| Note on materials             | Free of copper and PTFE   |

### Operating and environmental conditions

|  |             |
|--|-------------|
| Ambient temperature [°C]                     | -20 ... +80 |
| Corrosion resistance class CRC <sup>1)</sup> | 2           |

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

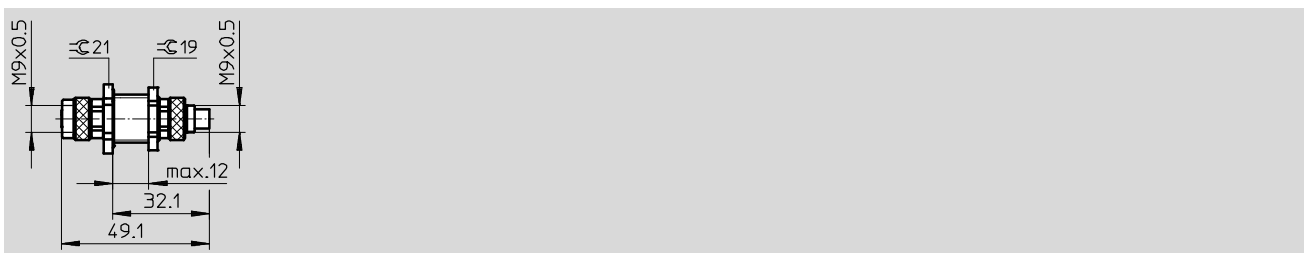
### Ordering data

|   | Electrical connection                                  | Product weight [g] | Type                | Part No.       |
|---|--|--------------------|---------------------|----------------|
|  | Straight plug, 5-pin, M9<br>Straight socket, 5-pin, M9 | 48                 | <b>KVI-CP-3-SSD</b> | <b>543 252</b> |

### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

KVI-...-SSD



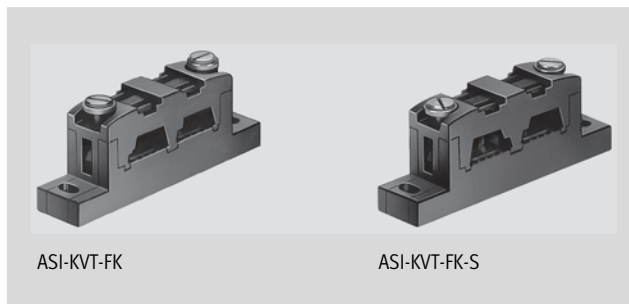
# Plug connectors for fieldbuses

ASI-KVT, for AS-interface – Technical data

FESTO

## Cable distributor ASI-KVT-FK

- Flat cable distributor for branching the AS-interface network at any desired point
- For parallel or symmetrical cable installation
- Reverse polarity protected



## General technical data

|                          |                    |                                    |
|--------------------------|--------------------|------------------------------------|
| Mounting position        |                    | Any                                |
| Type of mounting         |                    | Via through-hole                   |
| Operating voltage range  | [V AC]             | 0 ... 60                           |
|                          | [V DC]             | 0 ... 75                           |
| Acceptable current load  | [A]                | 3                                  |
| Connection type          |                    | Insulation displacement technology |
| Connection cross section | [mm <sup>2</sup> ] | 1.5                                |
| Protection class         |                    | IP65 (fully assembled)             |
| Product weight           | [g]                | 7.2                                |

## Materials

|              |  |        |
|--------------|--|--------|
| Housing      |  | PA     |
| Pin contacts |  | Bronze |

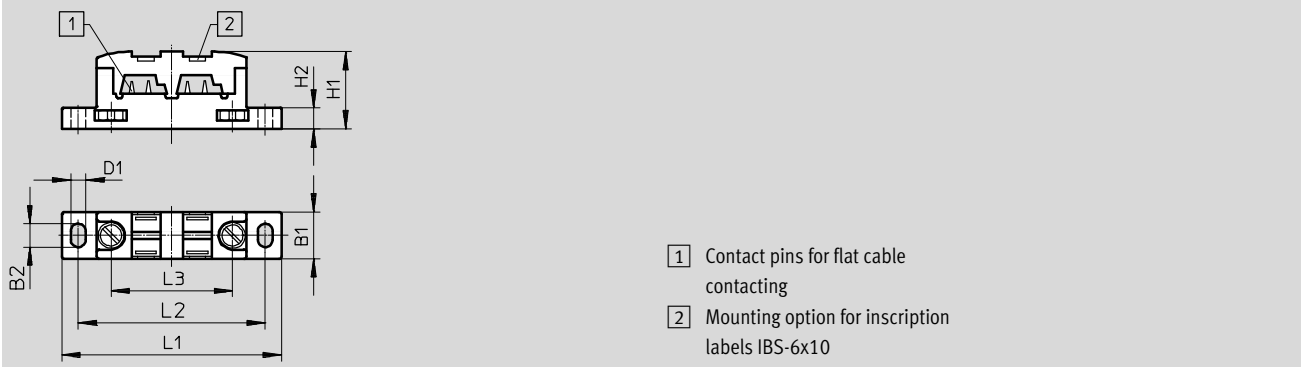
## Operating and environmental conditions

|  |      |             |
|--|------|-------------|
| Ambient temperature with flexible cable installation | [°C] | -5 ... +50  |
| Storage temperature                                  | [°C] | -30 ... +85 |



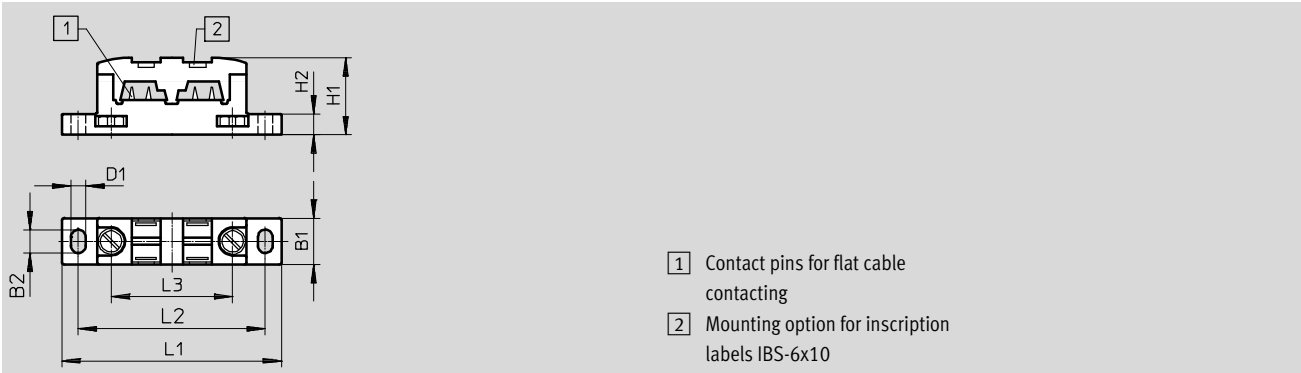
## Dimensions

### ASI-KVT-FK



| Type       | B1 | B2 | D1  | H1   | H2  | L1 | L2 | L3 |
|------------|----|----|-----|------|-----|----|----|----|
| ASI-KVT-FK | 10 | 5  | 3.2 | 16.5 | 4.5 | 47 | 40 | 26 |

### ASI-KVT-FK-S

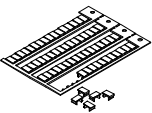


| Type         | B1 | B2 | D1  | H1   | H2  | L1 | L2 | L3 |
|--------------|----|----|-----|------|-----|----|----|----|
| ASI-KVT-FK-S | 10 | 5  | 3.2 | 16.5 | 4.5 | 47 | 40 | 26 |

## Ordering data

|                               | Part No.     | Type                |
|-------------------------------|--------------|---------------------|
| Parallel cable throughfeed    | <b>18786</b> | <b>ASI-KVT-FK</b>   |
| Symmetrical cable throughfeed | <b>18797</b> | <b>ASI-KVT-FK-S</b> |

## Ordering data – Accessories

|   | Description                                      | Part No.     | Type            |
|---|--|--------------|-----------------|
|  | Inscription labels 6x10 mm, 64 pieces, in frames | <b>18576</b> | <b>IBS-6x10</b> |

# Plug connectors for fieldbuses

ASI-KVT-FKx2, for AS-interface – Technical data



## Cable distributor ASI-KVT-FKx2

- Flat cable distributor for reconnecting from AS-interface flat cable to 4-pin M12 socket
- 2 connections: M12 socket with permanently attached cable (1 m long) and M12 socket integrated in housing
- Reverse polarity protected



## General technical data

|   |   |
|---|---|
| Mounting position                                 | Any   |
| Type of mounting                                  | Via through-hole<br>Optionally via H-rail   |
| AS-interface connection                           | AS-interface flat cable plug (must be ordered separately)<br>M12x1 socket, 4-pin, A-coded |
| Nominal operating voltage for AS-interface [V DC] | 26.5  |
| Operating voltage range for AS-interface [V DC]   | 26.5 ... 31.6   |
| Nominal operating voltage for load voltage [V DC] | 24  |
| Operating voltage range for load voltage [V DC]   | 20.4 ... 26.4   |
| Protection class to EN 60529                      | IP65 (fully assembled)  |
| Cable length [mm]                                 | 1,000   |

## Materials

|                   |                |
|-------------------|----------------|
| Housing           | Reinforced PA  |
| Cover             | Reinforced PA  |
| Seals             | PUR            |
| Note on materials | RoHS-compliant |

## Operating and environmental conditions

|  |  |
|--|--|
| Ambient temperature [°C]                   | -5 ... +50                                   |
| Storage temperature [°C]                   | -20 ... +70                                  |
| Relative air humidity [%]                  | 5 ... 90, non-condensing, in assembled state |
| CE marking (see declaration of conformity) | To EU EMC Directive                          |

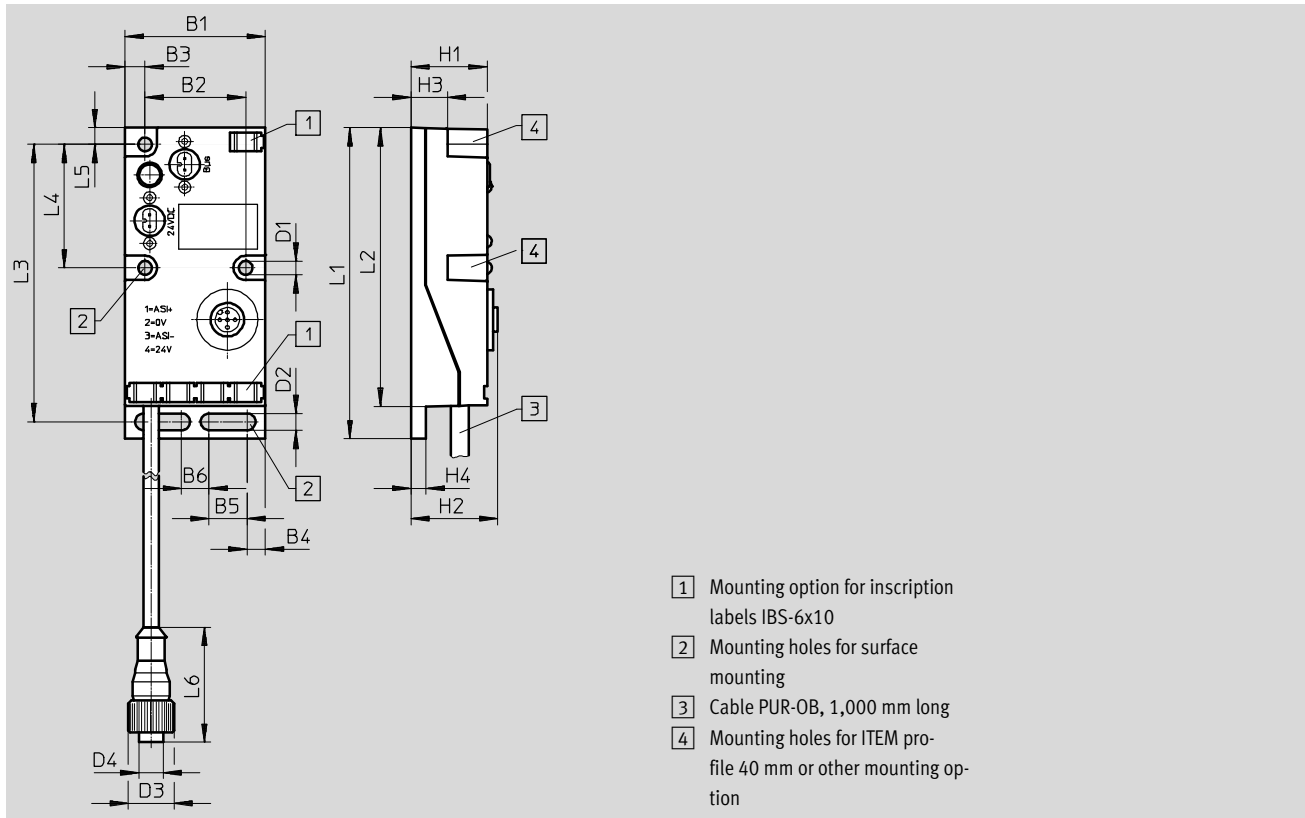
8

## Pin allocation

| AS-interface and auxiliary power supply | Pin | Signal                    | Pin | 5-pin M12 socket and socket at the cable |
|---|-----|---------------------------|-----|--|
|   | 1   | AS-interface +            | 1   |  |
|   | 2   | AS-interface -            | 3   |  |
|   | 1   | 0 V (additional supply)   | 2   |  |
|   | 2   | +24 V (additional supply) | 4   |  |
|   |     | Unused                    | 5   |  |

## Dimensions

ASI-KVT-FKx2-M12



| Type             | B1 | B2 | B3  | B4 | B5   | B6 | D1<br>∅ | D2  | D3<br>∅ | D4  | H1<br>+0.3 | H2   | H3 | H4 | L1  | L2   | L3 | L4   | L5  | L6 |
|------------------|----|----|-----|----|------|----|---------|-----|---------|-----|------------|------|----|----|-----|------|----|------|-----|----|
| ASI-KVT-FKx2-M12 | 46 | 33 | 6.5 | 6  | 12.5 | 9  | 4.5     | 5.5 | 15      | M12 | 25         | 28.5 | 12 | 5  | 102 | 91.4 | 91 | 40.5 | 5.5 | 38 |

## Ordering data

|   | Product weight [g] | Part No. | Type             |
|---|--------------------|----------|------------------|
| <p>Flat cable distributor for reconnecting from AS-interface flat cable to 4-pin M12 socket</p> | 190                | 527474   | ASI-KVT-FKx2-M12 |

## Ordering data – Accessories

|  | Description  | Part No. | Type         |
|--|--|----------|--------------|
|  | Inscription labels 6x10 mm, 64 pieces, in frames                             | 18576    | IBS-6x10     |
|  | 10 plugs for (non-pressure-tight) sealing of openings with M12 female thread | 165592   | ISK-M12      |
|  | Mounted using 2x M2.5x6 screws<br>For sealing unused flat cable connections  | 196090   | ASI-SD-FK-BL |

# Plug connectors for fieldbuses

ASI-SD, for AS-interface – Technical data

FESTO

## Cable socket ASI-SD-...-M12

- Flat cable socket for connecting AS-interface stations to the AS-interface bus system
- M12 connection
- Reverse polarity protected
- Detachable connection



## General technical data

| Type  | ASI-SD-FK-M12                      | ASI-SD-PG-M12   |
|---|------------------------------------|-----------------|
| Mounting position                           | Any                                |                 |
| Type of mounting                            | Via union nut                      |                 |
| Electrical connection                       | Straight socket                    | Straight socket |
|   | 5-pin                              | 4-pin           |
|   | Insulation displacement technology | Screw terminal  |
| Connection cross section [mm <sup>2</sup> ] | 1.5                                | 0.75            |
| Cable connector                             | –                                  | Pg9             |
| Operating voltage range [V AC]              | 0 ... 40                           | 0 ... 125       |
| Acceptable current load [A]                 | 2                                  | 3               |
| Protection class                            | IP65/IP67 (assembled)              |                 |
| Product weight [g]                          | 16.8                               | 27.6            |

## Materials

| Type              | ASI-SD-FK-M12            | ASI-SD-PG-M12  |
|-------------------|--------------------------|----------------|
| Housing           | PA                       | PA             |
| Pin contacts      | Gold-plated copper alloy | Bronze         |
| Union nut         | Nickel-plated            | Nickel-plated  |
| Housing colour    | Black                    | Black          |
| Note on materials | –                        | RoHS-compliant |

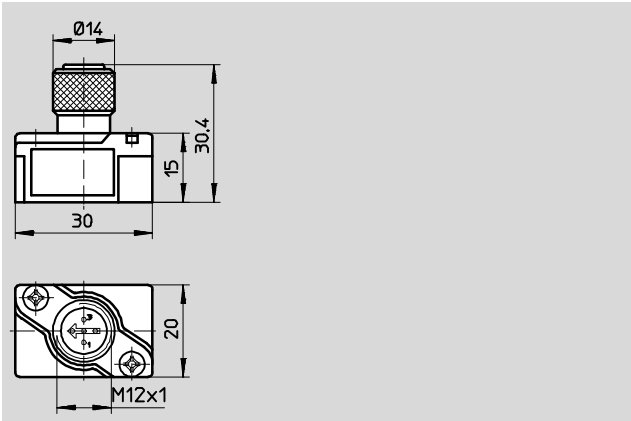
## Operating and environmental conditions

| Type                     | ASI-SD-FK-M12 | ASI-SD-PG-M12 |
|--------------------------|---------------|---------------|
| Ambient temperature [°C] | –25 ... +60   | –40 ... +85   |

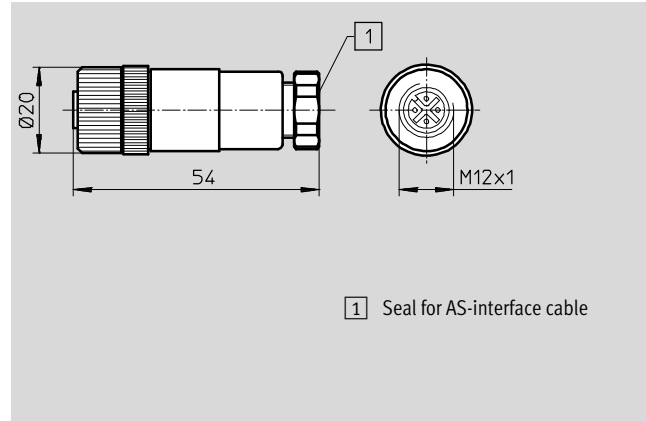
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

ASI-SD-FK-M12



ASI-SD-PG-M12



## Ordering data

|  | Electrical connection                                      | Part No.     | Type                 |
|--|--|--------------|----------------------|
|  | Straight socket, 5-pin, insulation displacement technology | <b>18788</b> | <b>ASI-SD-FK-M12</b> |
|  | Straight socket, 4-pin, screw terminal                     | <b>18789</b> | <b>ASI-SD-PG-M12</b> |

# Plug connectors for fieldbuses

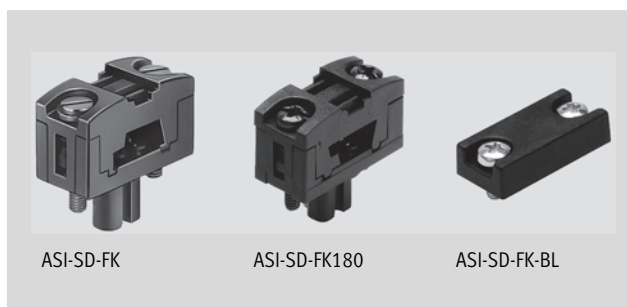
ASI-SD-FK, for AS-interface – Technical data

FESTO

## Cable socket ASI-SD-FK

## Blanking plug ASI-SD-FK-BL

- Flat cable socket for connecting AS-interface stations to the AS-interface bus system
- 0° and 180° version
- Reverse polarity protected
- Detachable connection
- 2-pin
- Blanking plugs for sealing unused connections



ASI-SD-FK

ASI-SD-FK180

ASI-SD-FK-BL

## General technical data

| Type                     | ASI-SD-FK                          | ASI-SD-FK180                       | ASI-SD-FK-BL |
|--------------------------|------------------------------------|------------------------------------|--------------|
| Mounting position        | Any                                |                                    |              |
| Type of mounting         | Via through-hole                   |                                    |              |
| Electrical connection    | Straight socket, 2-pin             | Straight socket, 2-pin             | –            |
| Operating voltage range  | [V AC]                             | 0 ... 60                           | –            |
|                          | [V DC]                             | 0 ... 75                           | –            |
| Acceptable current load  | [A]                                | 3                                  | –            |
| Connection type          | Insulation displacement technology | Insulation displacement technology | –            |
| Connection cross section | [mm <sup>2</sup> ]                 | 1.5                                | –            |
| Protection class         | IP65 (in assembled state)          |                                    |              |
| Product weight           | [g]                                | 6.8                                | 3            |

## Materials

| Type              | ASI-SD-FK      | ASI-SD-FK180   | ASI-SD-FK-BL   |
|-------------------|----------------|----------------|----------------|
| Housing           | PA             | PA             | –              |
| Pin contacts      | Bronze         | Bronze         | –              |
| Note on materials | RoHS-compliant | RoHS-compliant | RoHS-compliant |

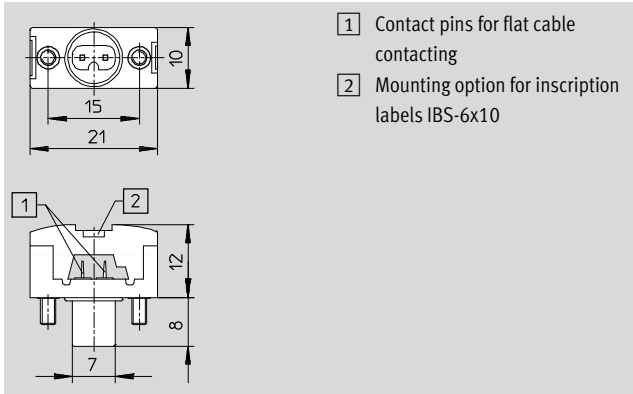
## Operating and environmental conditions

| Type                | ASI-SD-FK | ASI-SD-FK180 | ASI-SD-FK-BL |
|---------------------|-----------|--------------|--------------|
| Ambient temperature | [°C]      | –5 ... +50   | –5 ... +50   |
| Storage temperature | [°C]      | –30 ... +85  | –30 ... +85  |

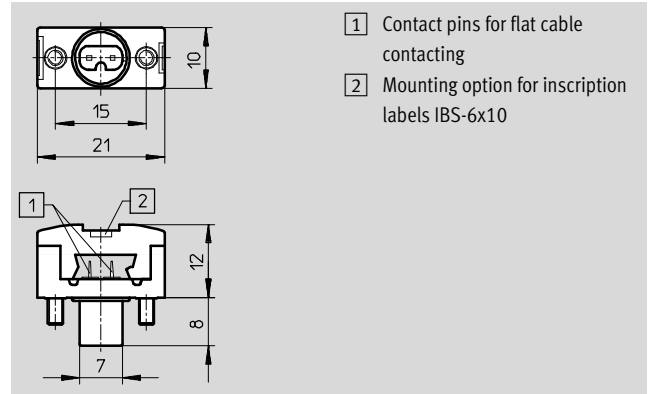
Download CAD data → [www.festo.com](http://www.festo.com)

## Dimensions

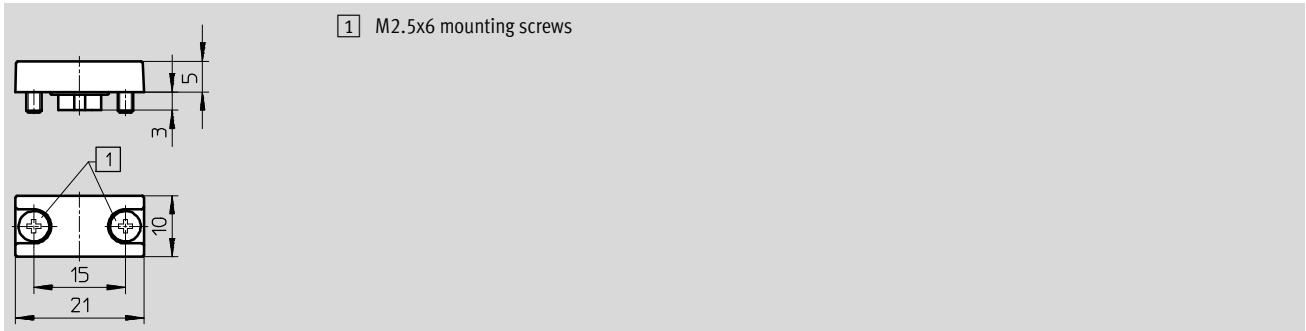
ASI-SD-FK



ASI-SD-FK180



ASI-SD-FK-BL



## Ordering data

|   | Part No.      | Type                |
|---|---------------|---------------------|
| Flat cable socket for connecting AS-interface stations                            | <b>18785</b>  | <b>ASI-SD-FK</b>    |
| Flat cable socket for connecting AS-interface stations, flat cable turned by 180° | <b>196089</b> | <b>ASI-SD-FK180</b> |
| Blanking plate for sealing unused AS-interface flat cable connections             | <b>196090</b> | <b>ASI-SD-FK-BL</b> |

**Inspection cover AK-SUB**

**Cover AK-RJ45**

**Cover cap ISK**

**Cable cap ASI-KK-FK**

Covers are inserted/screwed into or placed/screwed onto unused connections/openings in order to seal them.

They ensure:

- Reliable operation of the respective component
- Attainment of a protection class
- Hazard prevention (e.g. by covering current carrying parts)



## General technical data

| Type                         | AK-SUB                 | AK-RJ45                | ISK-M8 | ISK-M12 | ASI-KK-FK |
|------------------------------|------------------------|------------------------|--------|---------|-----------|
| Mounting position            | –                      | –                      | –      | –       | Any       |
| Width [mm]                   | –                      | 33                     | –      | –       | –         |
| Height [mm]                  | –                      | 8                      | –      | –       | –         |
| Length [mm]                  | –                      | 20                     | –      | –       | –         |
| Protection class to EN 60529 | IP65, IP67 (assembled) | IP65, IP67 (assembled) | IP65   | –       | –         |
| Product weight [g]           | 20                     | 10                     | 5      | 5       | –         |

## Materials

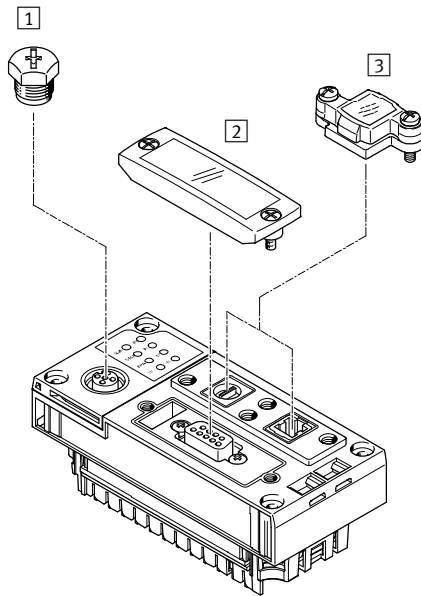
| Type              | AK-SUB-9/15      | AK-SUB-9/15-B | AK-RJ45 | ISK-M8         | ISK-M12        | ASI-KK-FK      |
|-------------------|------------------|---------------|---------|----------------|----------------|----------------|
| Housing           | –                | –             | –       | PA, reinforced | PA, reinforced | PA             |
| Cap               | PA               | –             | PA      | –              | –              | –              |
| Screws            | Galvanised steel | –             | Steel   | –              | –              | –              |
| Seal              | NBR              | –             | NBR     | –              | –              | –              |
| Note on materials | RoHS-compliant   | –             | –       | RoHS-compliant | –              | RoHS-compliant |

## Operating and environmental conditions

| Type                     | AK-SUB     | AK-RJ45    | ISK-M8      | ISK-M12 | ASI-KK-FK |
|--------------------------|------------|------------|-------------|---------|-----------|
| Ambient temperature [°C] | –5 ... +50 | –5 ... +50 | –10 ... +50 | –       | –         |



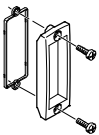
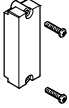



## Examples for attaching covers



Covers are inserted/screwed into or placed/screwed onto unused connections/openings.

- 1 ISK-M12
- 2 AK-SUB-9/15-B
- 3 AK-RJ45

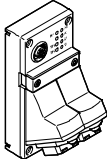
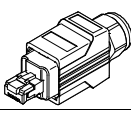
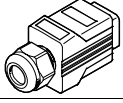

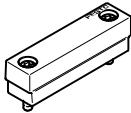
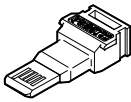

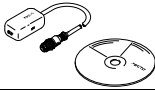

## Ordering data

|   | Description   | Mounting          | Part No. | Type          |
|---|---|-------------------|----------|---------------|
|  | Transparent cover for sealing switches and unused connections (on components of the CPX terminal)                                 | 2 screws, M3x10   | 533334   | AK-SUB-9/15-B |
|  | Cover for sealing switches and unused connections (on components of the CPX terminal)   | 2 screws, M3x16   | 557010   | AK-SUB-9/15   |
|  | Cover for sealing switches and unused RJ45 connections (on components of the CPX terminal)  | 2 screws, M3x14   | 534496   | AK-RJ45       |
|  | 10 cover cups for sealing openings (not pressure-tight) with M8 or M12 female thread (particularly unused electrical connections) | Thread M8         | 177672   | ISK-M8        |
|   |   | Thread M12        | 165592   | ISK-M12       |
|  | Plug for sealing the open end of an AS-interface cable  | Pushed in by hand | 18787    | ASI-KK-FK     |

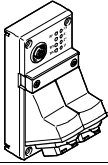

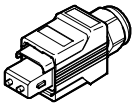
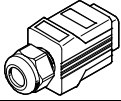

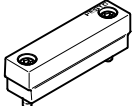
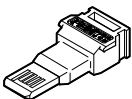

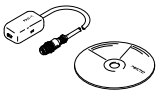
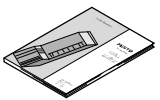
# Plug connectors for fieldbuses

Accessories – Bus node CPX-M-FB34

FESTO

| Ordering data   |  | Part No. | Type                    |
|---|--|----------|-------------------------|
| Designation   |  |          |                         |
| <b>Bus node</b>   |  |          |                         |
|    | PROFINET bus node  | 548751   | CPX-M-FB34              |
| <b>Bus connection</b>   |  |          |                         |
|    | RJ45 plug, 8-pin, push-pull  | 552000   | FBS-RJ45-PP-GS          |
|    | Cover cap for bus connection   | 548753   | CPX-M-AK-C              |
|    | Cover cap for bus connection   | 2873540  | CPX-M-AK-D              |
|   | Cover for DIL switch and memory card   | 548754   | CPX-M-AK-M              |
|  | Memory card for PROFINET bus node, 2 MB                                      | 568647   | CPX-SK-2                |
|  | Screws for attaching an inscription label holder to the bus node (12 pieces) | 550222   | CPX-M-M2,5X8-12X        |
|  | Adapter from 5-pin M12 to mini USB socket and controller software            | 547432   | NEFC-M12G5-0.3-U1G5     |
| <b>User manual</b>  |  |          |                         |
|  | Electronics manual, CPX bus node, type CPX-M-FB34                            | German   | 548759 P.BE-CPX-PNIO-DE |
|   |  | English  | 548760 P.BE-CPX-PNIO-EN |
|   |  | Spanish  | 548761 P.BE-CPX-PNIO-ES |
|   |  | French   | 548762 P.BE-CPX-PNIO-FR |
|   |  | Italian  | 548763 P.BE-CPX-PNIO-IT |
|   |  | Swedish  | 548764 P.BE-CPX-PNIO-SV |

## Ordering data

| Description   |   | Part No.                       | Type  |
|---|---|--------------------------------|---|
| <b>Bus node</b>   |   |                                |   |
|    | PROFINET bus node   | 2x SCRJ push-pull socket, AIDA | <b>548749</b> CPX-M-FB35  |
|   |   | 1x SCRJ push-pull socket, AIDA | <b>3228960</b> CPX-M-FB41  |
| <b>Bus connection</b>   |   |                                |   |
|    | SCRJ plug, 2-pin, push-pull   |                                | <b>571017</b> FBS-SCRJ-PP-GS  |
|    | Cover cap for bus connection  |                                | <b>548753</b> CPX-M-AK-C  |
|    | Cover cap for bus connection  |                                | <b>2873540</b> CPX-M-AK-D   |
|   | Cover for DIL switch and memory card                                  |                                | <b>548754</b> CPX-M-AK-M  |
|  | Memory card for PROFINET bus node, 2MB                                |                                | <b>568647</b> CPX-SK-2  |
|  | Screws for attaching an inscription label to the bus node (12 pieces) |                                | <b>550222</b> CPX-M-M2,5X8-12X  |
|  | 5-pin M12 adapter for mini USB socket and controller software         |                                | <b>547432</b> NEFC-M12G5-0.3-U1G5   |
| <b>User documentation</b>   |   |                                |   |
|  | Electronics manual, CPX bus node, type CPX-M-FB35/CPX-M-FB41          | German                         | <b>548759</b> P.BE-CPX-PNIO-DE  |
|   |   | English                        | <b>548760</b> P.BE-CPX-PNIO-EN  |
|   |   | Spanish                        | <b>548761</b> P.BE-CPX-PNIO-ES  |
|   |   | French                         | <b>548762</b> P.BE-CPX-PNIO-FR  |
|   |   | Italian                        | <b>548763</b> P.BE-CPX-PNIO-IT  |
|   |   | Swedish                        | <b>548764</b> P.BE-CPX-PNIO-SV  |

# Plug connectors for fieldbuses

CMT, Extension modules for electrical terminals – Technical data



## Pin allocation – Sub-D/M12

| CPX-AB-2-M12-RK-IB |         |         |                | CPX-AB-2-M12-RK-DP |         |         |                 |
|--------------------|---------|---------|----------------|--------------------|---------|---------|-----------------|
| Sub-D connection   | Pin     | Pin     | M12 connection | Sub-D connection   | Pin     | Pin     | M12 connections |
| Sub-D socket       | Sub-D   | M12     | M12 plug       | Sub-D socket       | Sub-D   | M12     | M12 plug        |
|                    | 1       | 1       |                |                    | 1       | -       |                 |
|                    | 2       | 3       |                |                    | 2       | -       |                 |
|                    | 3       | 5       |                |                    | 3       | 4       |                 |
|                    | 4       | -       |                |                    | 4       | -       |                 |
|                    | 5       | -       |                |                    | 5       | -       |                 |
|                    | 6       | 2       |                |                    | 6       | -       |                 |
|                    | 7       | 4       |                |                    | 7       | -       |                 |
|                    | 8       | -       |                |                    | 8       | 2       |                 |
|                    | 9       | -       |                |                    | 9       | -       |                 |
|                    | Housing | Housing |                |                    | Housing | Housing |                 |
| Sub-D plug         | Sub-D   | M12     | M12 socket     | Sub-D plug         | Sub-D   | M12     | M12 socket      |
|                    | 1       | 1       |                |                    | 1       | -       |                 |
|                    | 2       | 3       |                |                    | 2       | -       |                 |
|                    | 3       | 5       |                |                    | 3       | 4       |                 |
|                    | 4       | -       |                |                    | 4       | -       |                 |
|                    | 5       | -       |                |                    | 5       | 3       |                 |
|                    | 6       | 2       |                |                    | 6       | 1       |                 |
|                    | 7       | 4       |                |                    | 7       | -       |                 |
|                    | 8       | -       |                |                    | 8       | 2       |                 |
|                    | 9       | -       |                |                    | 9       | -       |                 |
|                    | Housing | Housing |                |                    | Housing | Housing |                 |


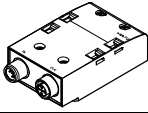
## Ordering data

| Electrical connection  | Protocol | Weight [g] | Part No. | Type               |
|--|----------|------------|----------|--------------------|
| Sub-D straight plug/socket, 9-pin;<br>M12 plug/socket, 5-pin | INTERBUS | 140        | 534505   | CPX-AB-2-M12-RK-IB |
| Sub-D straight socket, 9-pin;<br>M12 plug/socket, 5-pin      | PROFIBUS | 85         | 541519   | CPX-AB-2-M12-RK-DP |

## Ordering data – Accessories

|  | Description   | Part No. | Type                 |
|--|---|----------|----------------------|
|  | Socket M12x1, 5-pin, straight,<br>for self-assembly of a connecting cable | 1067905  | NECU-M-B12G5-C2-PB   |
|  | Plug M12x1, 5-pin, straight,<br>for self-assembly of a connecting cable   | 1066354  | NECU-M-S-B12G5-C2-PB |
|  | Inscription labels 6x10 mm, 64 pieces, in frames                          | 18576    | IBS-6x10             |

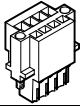
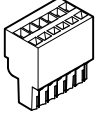

## Ordering data – Accessories

| Designation   |  |                     |         | Part No.        | Type                             |
|---|--|---------------------|---------|-----------------|----------------------------------|
| Plug connectors   |  |                     |         |                 |                                  |
|  | Connection block, adapter to 5-pin 7/8" plug | Sub-D socket, 9-pin | –       | For DeviceNet   | <b>571052 CPX-AB-1-7/8-DN</b>    |
|  | Connection block, adapter to M12 plug/socket | Sub-D plug, 9-pin   | B-coded | For PROFIBUS-DP | <b>541519 CPX-AB-2-M12-RK-DP</b> |

# Plug connectors for fieldbuses

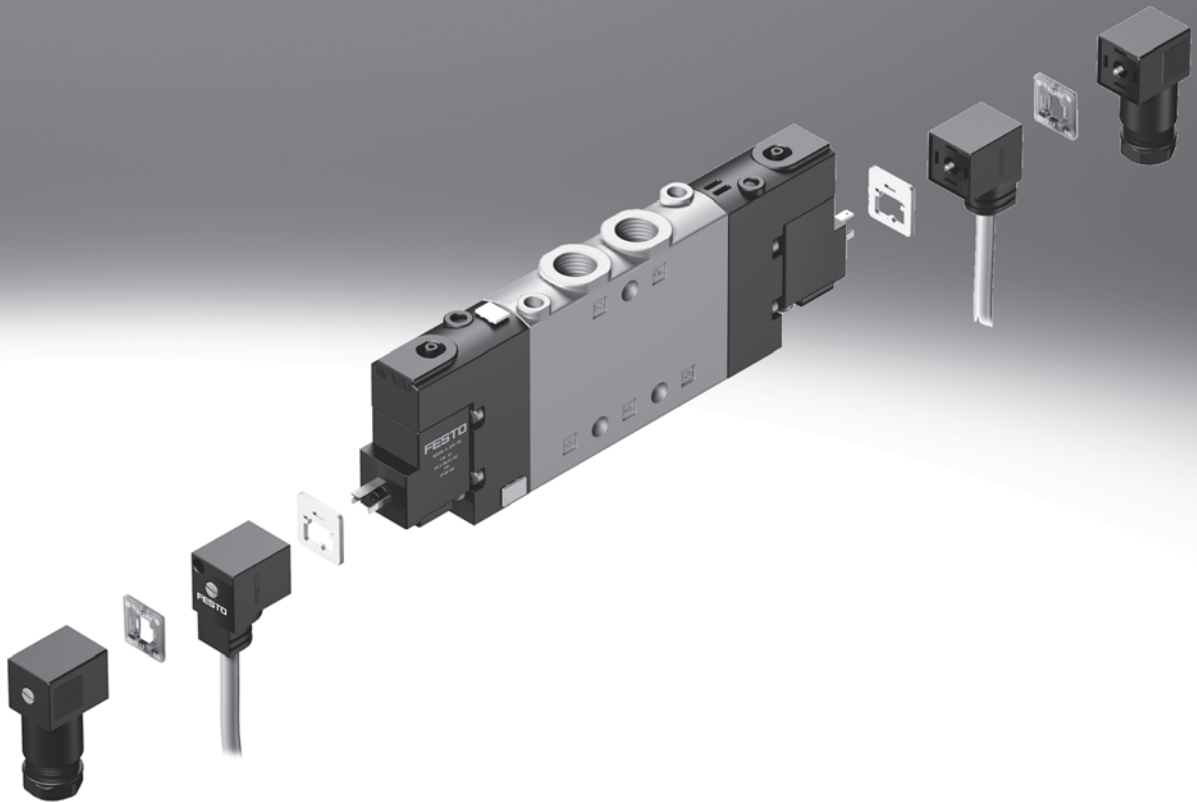
NECC, for Controllers CECC – Datenblatt

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| Ordering data   |  |                  |          |                |
|---|--|------------------|----------|----------------|
|   | Description  | PJ <sup>2)</sup> | Part No. | Type           |
| Plug  |  |                  |          |                |
|  | Plug connector for self-assembly                             | 1                | 575303   | NECC-L2G4-C1-M |
|  | Plug connector for self-assembly, 2-pin                      | 1                | 575302   | NECC-L2G2-C1   |
|   | Plug connector for self-assembly, 4-pin                      | 1                | 8024782  | NECC-L2G4-C1   |
|   | Plug connector for self-assembly, 5-pin                      | 1                | 575304   | NECC-L2G5-C1   |
|   | Plug connector for self-assembly, 6-pin                      | 1                | 575305   | NECC-L2G6-C1   |
|   | Plug connector for self-assembly, 8-pin                      | 1                | 575306   | NECC-L2G8-C1   |
|   | Plug connector for self-assembly, 24-pin                     | 1                | 575307   | NECC-L2G24-C1  |
|  | Sub-D plug, 9-pin with screw terminal, protection class IP40 | 1                | 576031   | NECC-S1G9-C2-M |

2) Packaging unit



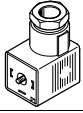
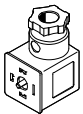
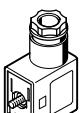
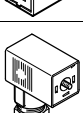


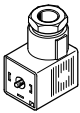
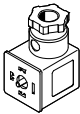

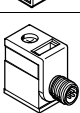
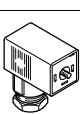







# Plug connectors for valves

Selection aid

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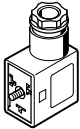
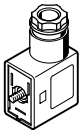
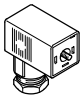
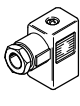
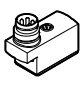
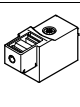

| Version   | Type           | Electrical connection                          | for solenoid coil                                      |                          |                            | → Page/<br>Internet |
|---|----------------|--|--|--------------------------|----------------------------|---------------------|
|   |                |  | MD/MH<br>MSG/MSW<br>MSN1<br>VACC-...-A1<br>VACN-...-A1 | MSFG/MSFW<br>VACF-...-B2 | VACS-...-C1<br>VACF-...-C1 |                     |
|  | <b>MSSD-C</b>  | Pin allocations type A,<br>to EN 175301-803    | ■  | -                        | -                          | 313                 |
|  | <b>MSSD-N</b>  | Pin allocations type A,<br>to EN 175301-803    | ■  | -                        | -                          | 315                 |
|  | <b>MSSD-F</b>  | Pin allocations type B,<br>industrial standard | -  | ■                        | -                          | 318                 |
|  | <b>MSSD-EB</b> | Pin allocations type C,<br>to EN 175301-803    | -  | -                        | ■                          | 321                 |






| Version   | Type          | Electrical connection                                 | for standard valves  |            |            |      |      |             |            |            |                    |            |      |           |      | → Page/<br>Internet |     |            |            |     |
|---|---------------|---|----------------------|------------|------------|------|------|-------------|------------|------------|--------------------|------------|------|-----------|------|---------------------|-----|------------|------------|-----|
|   |               |   | Namur (VDI/VDE 3845) |            |            |      |      | ISO 15407-1 |            |            | ISO 5599-1         |            |      | ISO 15218 |      |                     |     |            |            |     |
|   |               |   | VSNB                 | VSNC...-A1 | VSNC...-B2 | MN1H | NVF3 | MFH         | VSVA...-C1 | VSVA...-R2 | VSVA...-R3/-...-R5 | VSVA...-R5 | MN1H | MFH       | MEBH |                     | MDH | VSCS...-C1 | VSCS...-R3 | MD  |
|    | MSSD-C        | Pin allocations type A, to EN 175301-803              | ■                    | ■          | -          | ■    | -    | -           | -          | -          | -                  | -          | ■    | -         | -    | ■                   | -   | -          | ■          | 313 |
|    | MSSD-N        | Pin allocations type A, to EN 175301-803              | ■                    | ■          | -          | ■    | -    | -           | -          | -          | -                  | -          | ■    | -         | -    | ■                   | -   | -          | ■          | 315 |
|    | MSSD-F        | Pin allocations type B, industrial standard           | -                    | -          | ■          | -    | ■    | ■           | -          | -          | -                  | -          | ■    | -         | -    | -                   | -   | -          | -          | 318 |
|   | MSSD-EB       | Pin allocations type C, to EN 175301-803, 2-pin       | -                    | -          | -          | -    | -    | -           | ■          | -          | -                  | -          | -    | -         | -    | -                   | -   | -          | -          | 320 |
|  | MSSD-EB       | Pin allocations type C, to EN 175301-803, 3-pin/4-pin | -                    | -          | -          | -    | -    | -           | -          | -          | -                  | -          | -    | -         | -    | ■                   | -   | -          | -          | 321 |
|  | NECU-M8G4     | M8x1, 4-pin   | -                    | -          | -          | -    | -    | -           | -          | ■          | -                  | -          | -    | -         | -    | -                   | -   | -          | -          | 199 |
|  | SIE...D       | M12x1, 4-pin  | -                    | -          | -          | -    | -    | -           | -          | -          | ■                  | ■          | -    | -         | ■    | ■                   | -   | ■          | -          | 201 |
|  | SEA-M12-4     | M12x1, 4-pin  | -                    | -          | -          | -    | -    | -           | -          | -          | ■                  | ■          | -    | -         | ■    | ■                   | -   | ■          | -          | 237 |
|  | FBSD...D      | M12x1, 4-pin  | -                    | -          | -          | -    | -    | -           | -          | -          | ■                  | ■          | -    | -         | ■    | ■                   | -   | ■          | -          | 269 |
|  | FBSD...D...-5 | M12x1, 5-pin  | -                    | -          | -          | -    | -    | -           | -          | -          | ■                  | ■          | -    | -         | -    | -                   | -   | -          | -          | 269 |

# Plug connectors for valves

Selection aid

FESTO


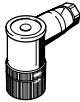




| Version   | Type      | Electrical connection                       | for universal directional control valves |             |            |             |             |       |                  |                  |                   |      |                  |                  |                     | → Page/<br>Internet |                       |                      |     |
|---|-----------|---|--|-------------|------------|-------------|-------------|-------|------------------|------------------|-------------------|------|------------------|------------------|---------------------|---------------------|-----------------------|----------------------|-----|
|   |           |   | VUYS-...-C1                              | VUYS-...-B2 | VUVG-...R1 | VUVB-...-C1 | CPV10/CPV14 | CPV18 | CPE10/CPE14-M1BH | CPE10/CPE14-M1CH | CPE18/CPE24-M...H | VMPA | MFH (Tiger 2000) | MVH (Tiger 2000) | MFH (Tiger Classic) |                     | MEBH (Midi pneumatic) | MEH (Midi pneumatic) |     |
|    | MSSD-V    | Pin allocations type B, to EN 175301-803    | -  | -           | -          | -           | -           | -     | -                | -                | -                 | -    | -                | ■                | -                   | -                   | -                     | 316                  |     |
|    | MSSD-F    | Pin allocations type B, industrial standard | -  | ■           | -          | -           | -           | -     | -                | -                | -                 | -    | -                | ■                | -                   | ■                   | -                     | -                    | 318 |
|    | MSSD-EB   | Pin allocations type C, to EN 175301-803    | ■  | -           | -          | ■           | -           | ■     | -                | -                | ■                 | -    | -                | -                | -                   | ■                   | -                     | 321                  |     |
|  | MSSD-E    | Pin allocations type C, industrial standard | -  | -           | -          | -           | -           | -     | -                | -                | -                 | -    | -                | -                | -                   | -                   | ■                     | 323                  |     |
|  | VAVE-C8   | Pin allocations ZC, metric screw            | -  | -           | -          | -           | -           | -     | ■                | -                | -                 | -    | -                | -                | -                   | -                   | -                     | 325                  |     |
|  | MSSD-ZBZC | Pin allocations ZB/ZC, self-tapping screw   | -  | -           | -          | -           | ■           | -     | -                | -                | -                 | -    | -                | -                | -                   | -                   | -                     | 327                  |     |
|  | NECU-M8G4 | M8x1, 4-pin                                 | -  | -           | ■          | -           | -           | -     | -                | ■                | -                 | ■    | -                | -                | -                   | -                   | -                     | 199                  |     |

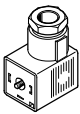





| Version   | Type             | Electrical connection                       | for application-specific valves |                 |                |                |                |                            | → Page/<br>Internet |
|---|------------------|---|---------------------------------|-----------------|----------------|----------------|----------------|----------------------------|---------------------|
|   |                  |   | VOFA...C1-APP/-ANP              | MHA1/MHP1...-PI | MHE2/MHP2/MHA2 | MHE3/MHP3/MHA3 | MHE4/MHP4/MHA4 | MFH<br>(M5 Compact System) |                     |
|    | <b>MSSD-F</b>    | Pin allocations type B, industrial standard | -                               | -               | -              | -              | -              | ■                          | 318                 |
|    | <b>MSSD-EB</b>   | Pin allocations type C, to EN 175301-803    | ■                               | -               | -              | -              | ■              | -                          | 321                 |
|    | <b>VAVE-C8</b>   | Pin allocations ZC, metric screw            | -                               | -               | ■              | ■              | -              | -                          | 325                 |
|   | <b>PCBC</b>      | Pin allocations H, Plug-In                  | -                               | ■               | -              | -              | -              | -                          | 328                 |
|  | <b>NECU-M8G4</b> | M8x1, 4-pin                                 | -                               | -               | -              | -              | -              | ■                          | 199                 |

# Plug connectors for valves

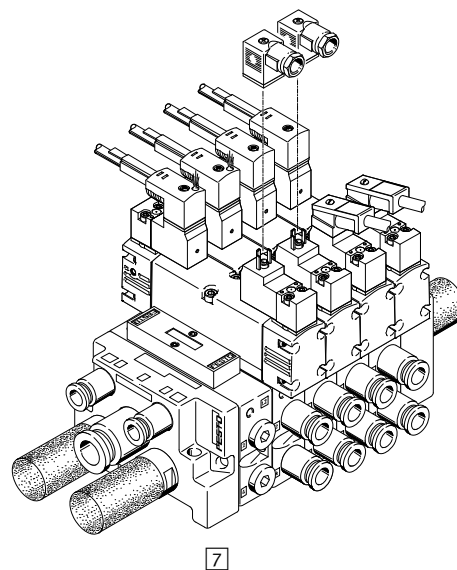
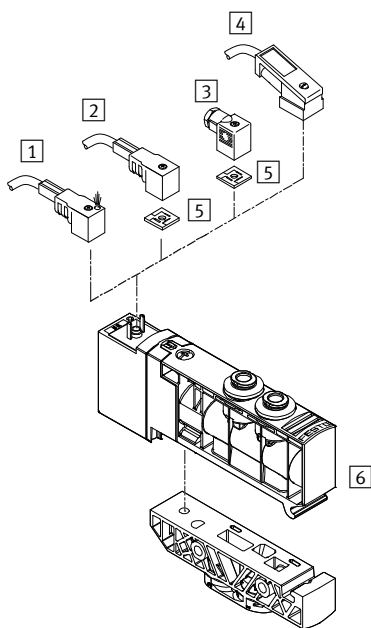
Selection aid

FESTO

| Version   | Type            | Electrical connection | for application-specific valves |      |        |      |           |      | → Page/<br>Internet |
|---|-----------------|-----------------------|---------------------------------|------|--------|------|-----------|------|---------------------|
|   |                 |                       | VPWP                            | MPPE | MPPE-S | VPPE | VPPE...E1 | MPYE |                     |
|    | SIE-...D        | M12x1, 4-pin          | -                               | -    | -      | ■    | -         | ■    | 201                 |
|    | SEA-M12-4       | M12x1, 4-pin          | -                               | -    | -      | ■    | -         | ■    | 237                 |
|    | FBSD-...D       | M12x1, 4-pin          | -                               | -    | -      | ■    | -         | ■    | 269                 |
|   | FBSD-...D-...-5 | M12x1, 5-pin          | -                               | -    | -      | -    | ■         | -    | 269                 |
|  | MPPE            | M16x0,75, 8-pin       | -                               | ■    | ■      | -    | -         | -    | 331                 |
|  | NECU-S-M8G4     | M8x1, 4-pin           | ■                               | -    | -      | -    | -         | -    | 186                 |

| Version   | Type             | Electrical connection                       | for on-off valves            | soft-start valves | for soft-start valves and exhaust valves |         |          |          | for vacuum generators |          |         |        | → Page/<br>Internet |                   |                              |     |
|---|------------------|---|------------------------------|-------------------|--|---------|----------|----------|-----------------------|----------|---------|--------|---------------------|-------------------|------------------------------|-----|
|   |                  |   | (Wartungsgeräte Baureihe MS) |                   |  |         |          |          |                       |          |         |        |                     |                   |                              |     |
|   |                  |   | MS4/MS6-EE                   | MS9/MS12-EE       | MS4/MS6-DE                               | MS12-DE | MS6-SV-C | MS6-SV-D | MS6-SV-E              | MS9-SV-C | VAD-MYB | VAD-ME |                     | VADM/VADMI-45/-70 | VADM/VADMI-95/-140/-200/-300 |     |
|    | <b>MSSD-C</b>    | Pin allocations type A, to EN 175301-803    | -                            | ■                 | -  | ■       | -        | -        | -                     | -        | ■       | -      | -                   | -                 | -                            | 313 |
|    | <b>MSSD-EB</b>   | Pin allocations type C, to EN 175301-803    | ■                            | -                 | ■  | -       | ■        | ■        | -                     | -        | -       | -      | -                   | ■                 | -                            | 321 |
|   | <b>MSSD-E</b>    | Pin allocations type C, industrial standard | -                            | -                 | -  | -       | -        | -        | -                     | -        | -       | ■      | -                   | -                 | -                            | 323 |
|  | <b>MSSD-ZBZC</b> | Pin allocations ZB/ZC, self-tapping screw   | -                            | -                 | -  | -       | -        | -        | -                     | -        | ■       | -      | ■                   | -                 | -                            | 327 |
|  | <b>NECA-S1G9</b> | Sub-D, 9-pin                                | -                            | -                 | -  | -       | -        | -        | -                     | ■        | -       | -      | -                   | -                 | -                            | 329 |
|  | <b>SIE-...D</b>  | M12x1, 4-pin                                | -                            | ■                 | -  | ■       | -        | -        | -                     | -        | ■       | -      | -                   | -                 | -                            | 201 |

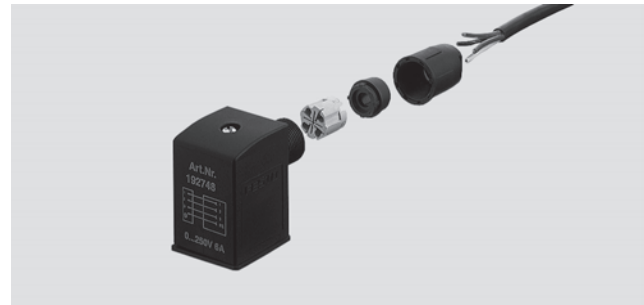
## Solenoid valves VSVA, to ISO 15407-1



|   | Type              | Brief description | → Page/Internet  |      |
|---|-------------------|-------------------|--|------|
| 1 | Connecting cable  | KMEB-1-24-...-LED | For valves with EB solenoid coil, with LEDs and protective circuit | 108  |
| 2 | Connecting cable  | KMEB-1-24-...     | For valves with EB solenoid coil, with protective circuit          | 108  |
| 3 | Plug socket       | MSSD-EB           | For valves with EB and N2 solenoid coil                            | 321  |
| 4 | Connecting cable  | KMEB-2-24-2,5-LED | For valves with EB solenoid coil, with LEDs and protective circuit | 108  |
|   |                   | KMEB-2-230AC-...  | For valves with EB solenoid coil                                   | 108  |
| 5 | Illuminating seal | MEB-LD            | For indicating the signal status                                   | 332  |
| 6 | Solenoid valve    | VUVB-S-...-M-...  | Monostable, semi in-line valve                                     | vuvb |
| 7 | Valve terminal    | Type 44, VTSA     | ISO 15407-2/ISO 5599-2   | vtsa |

**Plug socket  
MSSD-C**

- For valves with D and N1 solenoid coils
- Cable connection via clamping screws or insulation displacement technology



**Special features of insulation displacement technology (MSSD-C-S-M16)**

With these plug sockets, instead of the cable being connected using individual clamping screws, the flying

leads are pressed into the patented insulation displacement contact when the screw is tightened.

- Strip the cable sheath
- Push it in
- Screw it in tightly
- And you're done!

**General technical data**

| Type  | MSSD-C           | MSSD-C-M16       | MSSD-C-TY-24DC   | MSSD-C-4P        | MSSD-C-S-M16     |
|---|------------------|------------------|------------------|------------------|------------------|
| Electrical connection 1                     | Angled socket    | Angled socket    | Angled socket    | Angled socket    | Angled socket    |
|   | 3-pin            | 3-pin            | 3-pin            | 4-pin            | 4-pin            |
|   | Square design    | Square design    | Square design    | Square design    | Square design    |
|   | Type A           | Type A           | Type A           | Type A           | Type A           |
|   | To EN 175301-803 | To EN 175301-803 | To EN 175301-803 | To EN 175301-803 | To EN 175301-803 |
| Electrical connection 2                     | Screw terminal   | Screw terminal   | –                | –                | Schneidklemme    |
| Switching position display                  | –                | –                | LED              | –                | –                |
| Nominal operating voltage [V DC]            | –                | –                | 24               | –                | –                |
| Cable connector                             | Pg9              | M16x1            | Pg11             | Pg9              | M16x1            |
| Permissible cable diameter [mm]             | 6 ... 8          | 6 ... 8          | 8 ... 10         | 6 ... 8          | 5.5 ... 8        |
| Connection cross section [mm <sup>2</sup> ] | max. 1.5         | max. 1.5         | max. 1.5         | max. 1.5         | 0.5 ... 1        |
| Connection frequency                        | –                | 50               | –                | –                | 10               |
| Type of mounting                            | Central screw M3 | Central screw M3 | Central screw M3 | Central screw M3 | Central screw M3 |
| Mounting position                           | Any              | Any              | Any              | Any              | Any              |
| Protection class to EN 60529                | IP65 (assembled) | IP65 (assembled) | IP65 (assembled) | IP65 (assembled) | IP67 (assembled) |
| Product weight [g]                          | 22               | 38               | –                | 22               | 38               |

**Materials**

| Type              | MSSD-C         | MSSD-C-M16    | MSSD-C-TY-24DC | MSSD-C-4P      | MSSD-C-S-M16 |
|-------------------|----------------|---------------|----------------|----------------|--------------|
| Housing           | Plastic        | Reinforced PA | PA             | Plastic        | PA           |
| Housing colour    | Black          | –             | Transparent    | Black          | Black        |
| Seals             | –              | HNBR          | –              | –              | –            |
| Note on materials | RoHS-compliant | –             | –              | RoHS-compliant | –            |

**Operating and environmental conditions**

| Type                                       | MSSD-C                                    | MSSD-C-M16   | MSSD-C-TY-24DC | MSSD-C-4P   | MSSD-C-S-M16 |
|--|---|--------------|----------------|-------------|--------------|
| Ambient temperature [°C]                   | –25 ... +90                               | –20 ... +115 | –40 ... +90    | –20 ... +90 | –25 ... +90  |
| CE marking (see declaration of conformity) | To EU Low Voltage Directive <sup>1)</sup> | –            | –              | –           | –            |
| Certification                              | Germanischer Lloyd                        | –            | –              | –           | –            |

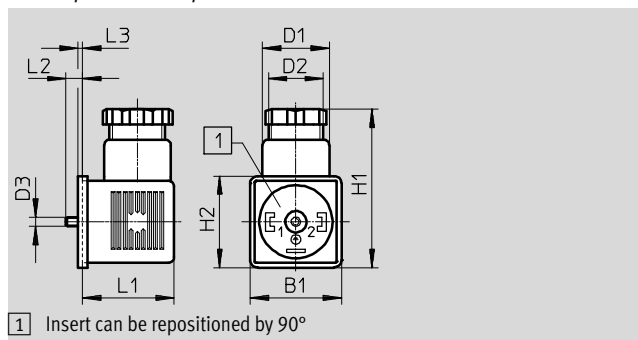
1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: [www.festo.com](http://www.festo.com) → Support → User documentation.  
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.



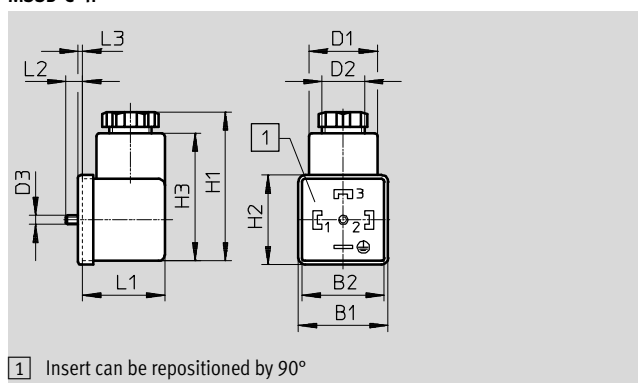
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

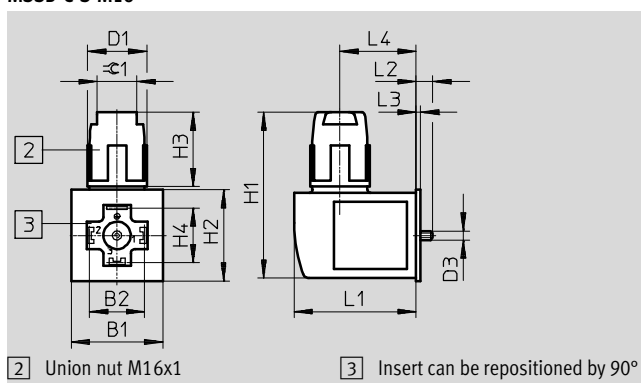
### MSSD-C/MSSD-C-M16/MSSD-C-TY-24DC



### MSSD-C-4P



### MSSD-C-S-M16



| Type           | B1   | B2 | D1<br>Ø | D2<br>Ø  | D3<br>Ø | H1   | H2   | H3   | H4 | L1   | L2  | L3  | L4 | ≈C1 |
|----------------|------|----|---------|----------|---------|------|------|------|----|------|-----|-----|----|-----|
| MSSD-C         | 28   | –  | 22      | Pg9      | M3      | 52   | 28   | –    | –  | 26.5 | 5.5 | 1.5 | –  | –   |
| MSSD-C-M16     | 27   | –  | 22      | M16x 1.5 | M3      | 52   | 27   | –    | –  | 27   | 5.5 | 1.5 | –  | –   |
| MSSD-C-TY-24DC | 30   | –  | 22      | Pg11     | M3      | 52   | 30   | –    | –  | 30   | 5.5 | 1.5 | –  | –   |
| MSSD-C-4P      | 29.5 | 27 | 22.5    | Pg9      | M3      | 49   | 29.5 | 42   | –  | 27   | 5.5 | 1.5 | –  | –   |
| MSSD-C-S-M16   | 30   | 18 | 19.5    | –        | M3      | 54.5 | 30   | 24.5 | 18 | 40   | 5.5 | 1.5 | 25 | 13  |

## Ordering data

| Description         | Switching status display | Nominal operating voltage | Cable connector | Cable connection                  | Part No.      | Type                  |
|---------------------|--------------------------|---------------------------|-----------------|-----------------------------------|---------------|-----------------------|
| Plug socket , 3-pin | –                        | –                         | Pg9             | Screw terminal                    | <b>34583</b>  | <b>MSSD-C</b>         |
|                     | –                        | –                         | M16x1           | Screw terminal                    | <b>539709</b> | <b>MSSD-C-M16</b>     |
|                     | LED                      | 24 V DC                   | Pg11            | –                                 | <b>177617</b> | <b>MSSD-C-TY-24DC</b> |
| Plug socket , 4-pin | –                        | –                         | Pg9             | –                                 | <b>171157</b> | <b>MSSD-C-4P</b>      |
|                     | –                        | –                         | M16x1           | Insulation displacement connector | <b>192748</b> | <b>MSSD-C-S-M16</b>   |

**Plug socket MSSD-N**

- For valves with MD-2 and MH-2 solenoid coils



### General technical data

|   |                   |
|---|-------------------|
| Electrical connection                       | Angled socket     |
|   | 3-pin             |
|   | Screw terminal    |
|   | Square design MSF |
|   | To EN 175301-803  |
| Cable connector                             | M20               |
| Permissible cable diameter [mm]             | 8 ... 10          |
| Connection cross section [mm <sup>2</sup> ] | Max. 1.5          |
| Type of mounting                            | M3 central screw  |
| Mounting position                           | Any               |
| Protection class to EN 60529                | IP65 (assembled)  |

### Materials

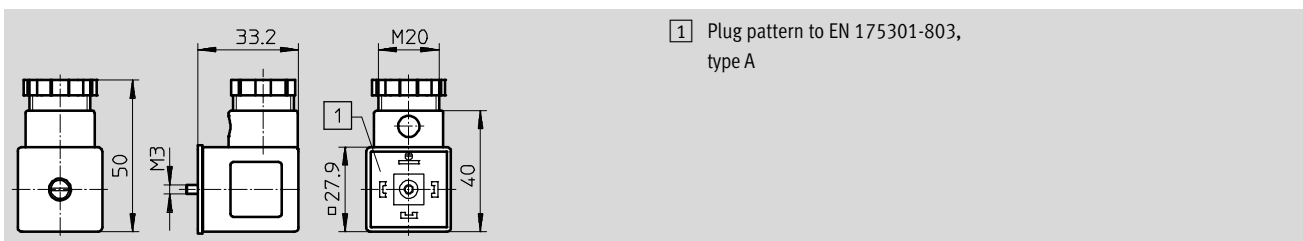
|                   |   |
|-------------------|---|
| Housing           | PA reinforced   |
| Housing colour    | Black   |
| Screws            | Steel   |
| Seals             | VMQ   |
| Note on materials | Contains PWIS (paint-wetting impairment substances), RoHS-compliant |

### Operating and environmental conditions

|                          |             |
|--------------------------|-------------|
| Ambient temperature [°C] | -20 ... +80 |
|--------------------------|-------------|

### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



### Ordering data

| Description                             | Weight | Part No. | Type   |
|---|--------|----------|--------|
| Angled socket, 3-pin, square design MSF | 30 g   | 550067   | MSSD-N |

**Plug socket MSSD-V**

- For valves with V solenoid coils



## General technical data

| Type  | MSSD-V            | MSSD-V-M16       |
|---|-------------------|------------------|
| Electrical connection                       | Angled socket     | Angled socket    |
|   | 3-pin             | 3-pin            |
|   | –                 | Screw terminal   |
|   | Square design MSV | Square design    |
|   | Type B            | Type B           |
|   | To EN 175301-803  | To EN 175301-803 |
| Cable connector                             | Pg9               | M16              |
| Permissible cable diameter [mm]             | 6 ... 8           | 6 ... 8          |
| Connection cross section [mm <sup>2</sup> ] | Max. 1.5          | 0.75             |
| Connection frequency                        | –                 | 50               |
| Type of mounting                            | M3 central screw  | M3 central screw |
| Mounting position                           | Any               | Any              |
| Protection class to EN 60529                | IP65 (assembled)  | IP65 (assembled) |

## Materials

| Type           | MSSD-V  | MSSD-V-M16    |
|----------------|---------|---------------|
| Housing        | Plastic | PA reinforced |
| Housing colour | Black   | –             |
| Seals          | –       | HNBR          |

## Operating and environmental conditions

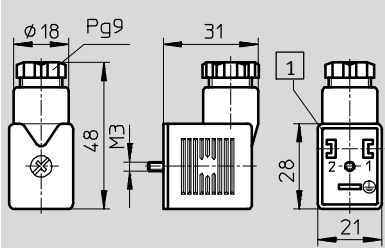
| Type  | MSSD-V                                    | MSSD-V-M16   |
|---|---|--------------|
| Ambient temperature [°C]                      | –25 ... +90                               | –20 ... +115 |
| CE marking<br>(see declaration of conformity) | To EU Low Voltage Directive <sup>1)</sup> | –            |

1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: [www.festo.com](http://www.festo.com) → Support → User documentation.  
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

## Dimensions

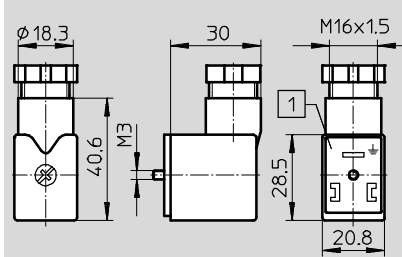
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MSSD-V



1 Insert can be repositioned by 180°

MSSD-V-M16



1 Insert can be repositioned by 180°

## Ordering data

| Description                                  | Cable connector | Weight | Part No.      | Type              |
|--|-----------------|--------|---------------|-------------------|
| Plug socket for valves with V solenoid coils | Pg9             | 18 g   | <b>33295</b>  | <b>MSSD-V</b>     |
|  | M16             | 35 g   | <b>539713</b> | <b>MSSD-V-M16</b> |

## Plug socket MSSD-F

- For valves with F solenoid coils
- Cable connection via clamping screws or insulation displacement technology



## General technical data

| Type  | MSSD-F            | MSSD-F-M16       | MSSD-F-S-M16                      |
|---|-------------------|------------------|-----------------------------------|
| Electrical connection                       | Angled socket     | Angled socket    | Socket                            |
|   | 3-pin             | 3-pin            | 3-pin                             |
|   | Screw terminal    | Screw terminal   | Insulation displacement connector |
|   | Square design MSF | Square design    | –                                 |
|   | –                 | Type B           | Type B                            |
| Electrical connection                       | –                 | To EN 175301-803 | –                                 |
| Cable connector                             | Pg9               | M16              | –                                 |
| Permissible cable diameter [mm]             | 6 ... 8           | 6 ... 8          | 5.5 ... 8                         |
| Connection cross section [mm <sup>2</sup> ] | Max. 1.5          | 0.75             | 0.5 ... 1                         |
| Connection frequency                        | –                 | 50               | 10                                |
| Type of mounting                            | M3 central screw  | M3 central screw | M3 central screw                  |
| Mounting position                           | Any               | Any              | Any                               |
| Protection class to EN 60529                | IP65 (assembled)  | IP65 (assembled) | IP67 (assembled)                  |

## Materials

| Type           | MSSD-F  | MSSD-F-M16    | MSSD-F-S-M16 |
|----------------|---------|---------------|--------------|
| Housing        | Plastic | PA reinforced | PA           |
| Housing colour | Black   | –             | Black        |
| Seals          | –       | HNBR          | –            |

## Operating and environmental conditions

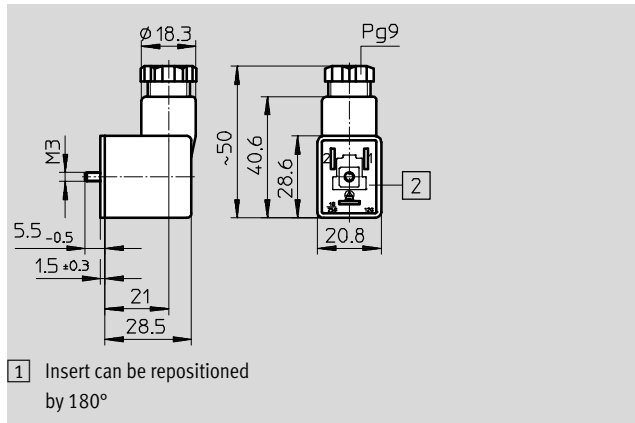
| Type                                       | MSSD-F                                    | MSSD-F-M16   | MSSD-F-S-M16 |
|--|---|--------------|--------------|
| Ambient temperature [°C]                   | –25 ... +90                               | –20 ... +115 | –25 ... +90  |
| CE marking (see declaration of conformity) | To EU Low Voltage Directive <sup>1)</sup> | –            | –            |

1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: [www.festo.com](http://www.festo.com) → Support → User documentation.  
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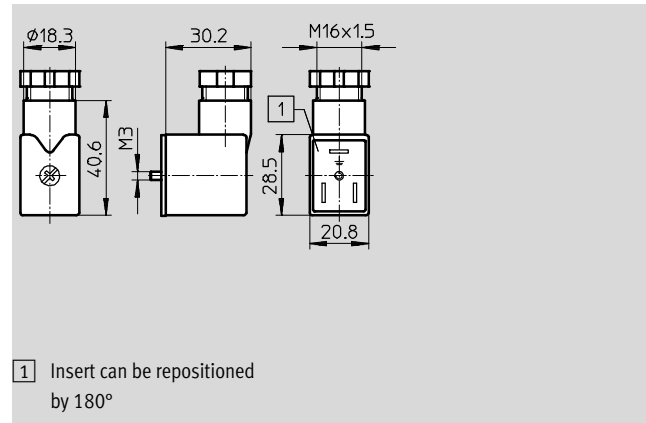
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

MSSD-F



MSSD-F-M16



MSSD-F-S-M16

2 M16x1 union nut  
3 Connection side can be repositioned by 90°

With these plug sockets, instead of the cable being connected using individual clamping screws, the stranded wires are pressed into the patented insulation displacement contact when the screw is tightened.

- Strip the cable sheath
- Push it in
- Screw it in tightly
- And you're done!

## Ordering data

| Description                                  | Cable connection                  | Weight | Part No.      | Type                |
|--|-----------------------------------|--------|---------------|---------------------|
| Plug socket for valves with F solenoid coils | Screw terminal                    | 17 g   | <b>34431</b>  | <b>MSSD-F</b>       |
|  |                                   | 35 g   | <b>539710</b> | <b>MSSD-F-M16</b>   |
|  | Insulation displacement connector | 35 g   | <b>192746</b> | <b>MSSD-F-S-M16</b> |

# Plug connectors for valves

MSSD-EB-M12-MONO – Technical data

FESTO

## Plug socket MSSD-EB

- Plug socket for connecting individual valves
- M12 plug connector for pre-assembled cable
- Socket, 2-pin
- With LED



## General technical data

|                              |        |   |
|------------------------------|--------|---|
| Electrical connection        | 1      | Socket, to EN 175301-803 type C         |
|                              | 2      | Straight plug, M12, 2-pin, A-coded      |
| Based on standard            |        | EN 61984, EN 175301-803, EN 61076-2-101 |
| Type of mounting             |        | M2.5 central screw                      |
| Operating voltage range      | [V DC] | 12 ... 24                               |
|                              | [V AC] | 12 ... 24                               |
| Surge strength               | [kV]   | 2.5                                     |
| Acceptable current load      | [A]    | 0.12                                    |
| Signal status display        |        | LED                                     |
| Max. tightening torque       | [Nm]   | 0.4                                     |
| Protection class to EN 60529 |        | IP65 (assembled)                        |

## Materials

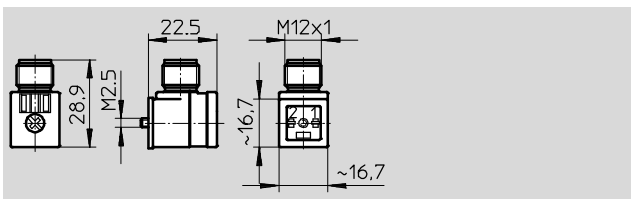
|          |                |
|----------|----------------|
| Housing  | PA             |
| Contacts | Brass          |
| Seal     | Nitrile rubber |

## Operating and environmental conditions

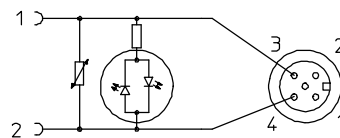
|                         |      |             |
|-------------------------|------|-------------|
| Ambient temperature     | [°C] | -10 ... +50 |
| Degree of contamination |      | 3           |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



## Circuitry



## Ordering data

| Electrical connection                           | Part No. | Type             |
|---|----------|------------------|
| Angled socket, 2-pin; straight plug, 2-pin, M12 | 188024   | MSSD-EB-M12-MONO |

## Ordering data – Accessories

| Description                                      | Part No. | Type     |
|--|----------|----------|
| Inscription labels 6x10 mm, 64 pieces, in frames | 18576    | IBS-6x10 |

## Plug socket MSSD-EB

- For valves with EB and N2 solenoid coils



## General technical data

| Type                         | MSSD-EB                 | MSSD-EB-M12        | MSSD-EB-M12-24VDC-SD-EX | MSSD-EB-S-M14                     |
|------------------------------|-------------------------|--------------------|-------------------------|-----------------------------------|
| Electrical connection        | Angled socket           | Angled socket      | Angled socket           | Socket                            |
|                              | 3-pin                   | 3-pin              | 3-pin                   | 4-pin                             |
|                              | Screw terminal          | Screw terminal     | Screw terminal          | Insulation displacement connector |
|                              | Square design MSEB/MSN2 | Square design      | Square design           | –                                 |
|                              | Type C                  | Type C             | Type C                  | Type C                            |
|                              | To EN 175301-803        | To EN 175301-803   | To EN 175301-803        | –                                 |
|                              | To DIN EN 61984         | –                  | –                       | –                                 |
| Nominal operating voltage    | [V AC]                  | 250                | –                       | 0 ... 24                          |
|                              | [V DC]                  | 300                | –                       | 0 ... 30                          |
| Surge resistance             | [kV]                    | 4                  | –                       | 0.8                               |
| Acceptable current load      | [A]                     | 6                  | –                       | 6 (at 40 °C)                      |
| Cable connector              |                         | Pg7                | M12                     | M12                               |
| Permissible cable diameter   | [mm]                    | 6 ... 8            | 4 ... 6                 | 4 ... 6                           |
| Connection cross section     | [mm <sup>2</sup> ]      | 0.75               | 1.5                     | 0.25 ... 0.5                      |
| Connection frequency         |                         | –                  | 50                      | –                                 |
| Type of mounting             |                         | Central screw M2.5 | Central screw M2.5      | Central screw M2.5                |
| Max. tightening torque, plug | [Nm]                    | 0.25               | –                       | 0.5                               |
| Mounting position            |                         | Any                | Any                     | –                                 |
| Protection class to EN 60529 |                         | IP65 (assembled)   | IP65 (assembled)        | IP65 (assembled)                  |

## Materials

| Type              | MSSD-EB        | MSSD-EB-M12   | MSSD-EB-M12-24VDC-SD-EX | MSSD-EB-S-M14 |
|-------------------|----------------|---------------|-------------------------|---------------|
| Housing           | Plastic        | PA reinforced | PA reinforced           | PA            |
| Housing colour    | Black          | –             | –                       | Black         |
| Seals             | Nitrile rubber | HNBR          | HNBR                    | –             |
| Note on materials | –              | –             | RoHS-compliant          | –             |

## Operating and environmental conditions

| Type  | MSSD-EB | MSSD-EB-M12                               | MSSD-EB-M12-24VDC-SD-EX | MSSD-EB-S-M14 |
|---|---------|---|-------------------------|---------------|
| Ambient temperature                           | [°C]    | –45 ... +90                               | –40 ... +125            | –25 ... +125  |
| CE marking<br>(see declaration of conformity) |         | To EU Low Voltage Directive <sup>1)</sup> | –                       | –             |
| Degree of contamination                       |         | 3   | –                       | 3             |

1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: [www.festo.com](http://www.festo.com) → Support → User documentation.  
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.



# Plug connectors for valves

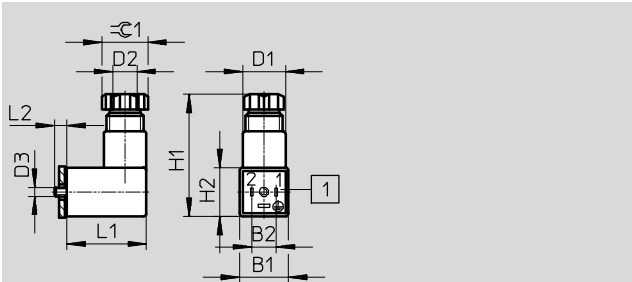
MSSD-EB, square plug, type C – Technical data

FESTO

## Dimensions

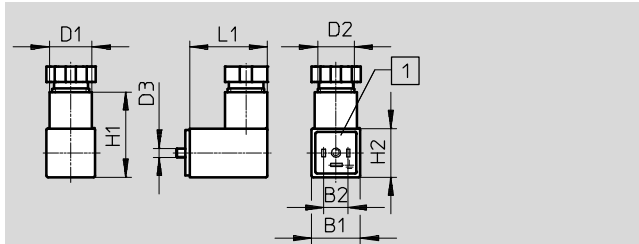
Download CAD data → [www.festo.com](http://www.festo.com)

MSSD-EB



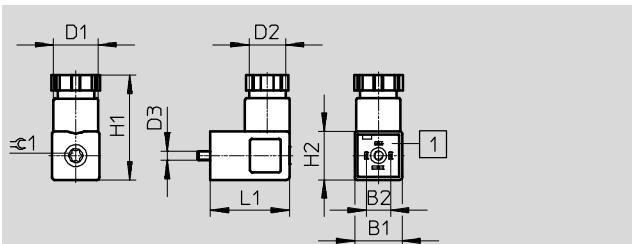
1 Insert can be repositioned by 90°

MSSD-EB-M12



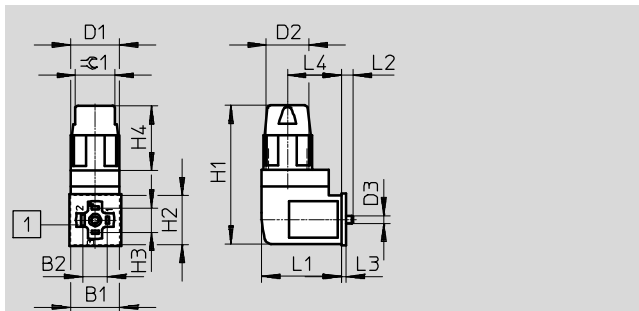
1 Insert can be repositioned by 90°

MSSD-EB-M12-24VDC-SD-EX



1 Insert can be repositioned by 90°

MSSD-EB-S-M14



1 Insert can be repositioned by 90°

insulation displacement contact when the screw is tightened.

- Strip the cable sheath
- Push it in
- Screw it in tightly
- And you're done!

With these plug sockets, instead of the cable being connected using individual clamping screws, the flying leads are pressed into the patented

| Type                    | B1   | B2 | D1<br>∅ | D2<br>∅  | D3<br>∅ | H1   | H2   | H3 | H4   | L1   | L2 | L3  | L4   | ±∅ 1 |
|-------------------------|------|----|---------|----------|---------|------|------|----|------|------|----|-----|------|------|
| MSSD-EB                 | 15.5 | 8  | 15      | 7.5      | 2.5     | 34   | 15.5 | –  | –    | 26   | 4  | –   | –    | 13   |
| MSSD-EB-M12             | 16   | 8  | 14      | M12      | 2.5     | 28   | 16   | –  | –    | 25.5 | –  | –   | –    | –    |
| MSSD-EB-M12-24VDC-SD-EX | 15.6 | 8  | 14.6    | M12x 1.5 | 2.5     | 34.5 | 16   | –  | –    | 26   | –  | –   | –    | T8   |
| MSSD-EB-S-M14           | 16   | 8  | 16      | 13       | 2.5     | 45   | 16   | 8  | 21.2 | 26   | 4  | 1.5 | 17.6 | 13   |

## Ordering data

| Description   | Cable connection                  | Cable connector | Weight | Part No.      | Type                           |
|---|-----------------------------------|-----------------|--------|---------------|--------------------------------|
| Plug socket for valves with EB and N2-Ma solenoid coils | Screw terminal                    | Pg7             | 11 g   | <b>151687</b> | <b>MSSD-EB</b>                 |
|   |                                   | M12             | 11 g   | <b>539712</b> | <b>MSSD-EB-M12</b>             |
|   |                                   | –               | –      | <b>570367</b> | <b>MSSD-EB-M12-24VDC-SD-EX</b> |
|   | Insulation displacement connector | M14             | 17 g   | <b>192745</b> | <b>MSSD-EB-S-M14</b>           |

**Plug socket MSSD-E**

- For valves with E solenoid coils



### General technical data

| Type                                   | MSSD-E                  | MSSD-E-M12       |
|--|-------------------------|------------------|
| Electrical connection 1                | Angled socket           | Angled socket    |
|  | 3-pin                   | 3-pin            |
|  | Square design           | Square design    |
|  | Type C                  | Type C           |
|  | Industrial design       | To EN 175301-803 |
| Electrical connection 2                | Screw terminal          | Screw terminal   |
| Operating voltage range                | [V DC] 0 ... 300        | 0 ... 300        |
|  | [V AC] 0 ... 250        | 0 ... 250        |
| Current-carrying capacity              | [A] 6                   | 6                |
| Cable connector                        | Pg7                     | M12              |
| Max. tightening torque of locking clip | [Nm] 0.35               | 0.5              |
| Permissible cable diameter             | [mm] 6 ... 8            | 4 ... 6          |
| Connection cross section               | [mm <sup>2</sup> ] 0.75 | 0.75             |
| Connection frequency                   | –                       | 50               |
| Type of mounting                       | M3 central screw        | M3 central screw |
| Mounting position                      | Any                     | Any              |
| Protection class to EN 60529           | IP65 (assembled)        | IP65 (assembled) |

### Materials

| Type              | MSSD-E        | MSSD-E-M12       |
|-------------------|---------------|------------------|
| Housing           | PA reinforced | PA reinforced    |
| Housing colour    | Black         | Black            |
| Seals             | NBR           | HNBR             |
| Note on materials | –             | Conforms to RoHS |

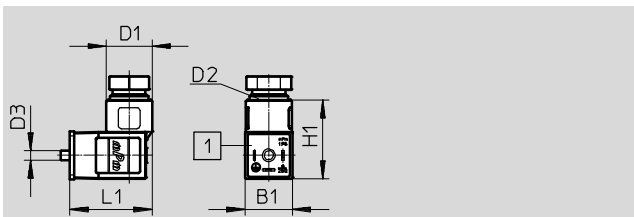
### Operating and environmental conditions

| Type                    | MSSD-E           | MSSD-E-M12   |
|-------------------------|------------------|--------------|
| Ambient temperature     | [°C] –25 ... +90 | –20 ... +115 |
| Degree of contamination | 3                | 3            |

## Dimensions

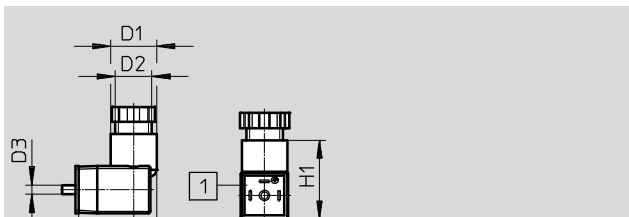
Download CAD data → [www.festo.com](http://www.festo.com)

MSSD-E



1 Insert can be repositioned by 90°

MSSD-E-M12



1 Insert can be repositioned by 90°

| Type       | B1   | D1 | D2       | D3 | H1   | L1   |
|------------|------|----|----------|----|------|------|
| MSSD-E     | 15.5 | 14 | Pg7      | M3 | 24.5 | 25   |
| MSSD-E-M12 | 15.5 | 15 | M12x 1.5 | M3 | 26   | 25.5 |

## Ordering data

| Description                                  | Cable connector | Weight | Part No.      | Type              |
|--|-----------------|--------|---------------|-------------------|
| Plug socket for valves with E solenoid coils | Pg7             | 8 g    | <b>14098</b>  | <b>MSSD-E</b>     |
|  | M12             | 11 g   | <b>539711</b> | <b>MSSD-E-M12</b> |

## Adapter VAVE-C8

- Pin allocations ZC, metric screw, to M8x1



## General technical data

| Type                             | VAVE-C8-1R8                            | VAVE-C8-1R1 |
|----------------------------------|--|-------------|
| Type of mounting                 | On solenoid valve via M2 central screw |             |
| Electrical connection 1          | Angled socket                          |             |
|                                  | 2-pin                                  |             |
|                                  | square design                          |             |
|                                  | Pin allocations ZC, metric screw       |             |
| Electrical connection 2          | Plug                                   | Plug        |
|                                  | M8x1                                   | M8x1        |
|                                  | 3-pin                                  | 4-pin       |
| Switching position display       | LED                                    |             |
| Nominal operating voltage [V DC] | 24                                     |             |
| Protective earth connection      | No                                     |             |
| Tightening torque [Nm]           | 0.25                                   |             |
| Mounting position                | Any                                    |             |
| Protection class to IEC 60529    | IP65                                   |             |

## Operating and environmental conditions

|   |            |
|---|------------|
| Ambient temperature [°C]                  | -5 ... +60 |
| Korrosionsbeständigkeit CRC <sup>1)</sup> | 2          |

- 1) Corrosion resistance class CRC 2 to Festo standard FN 940070  
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

## Materials

|                   |                |
|-------------------|----------------|
| Housing           | PA             |
| Pin contacts      | Bronze         |
| Note on materials | RoHS-compliant |

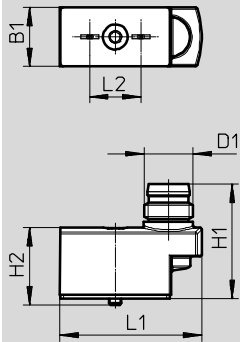
## Pin allocation

### M8x1

| 3-pin | Pin | Signal   | 4-pin | Pin | Signal   |
|-------|-----|----------|-------|-----|----------|
|       | 1   | Not used |       | 1   | Not used |
|       | 3   | 0 V      |       | 2   | Not used |
|       | 4   | 24 V DC  |       | 3   | 0 V      |
|       |     |          |       | 4   | 24 V DC  |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| B1  | D1   | H1   | H2   | L1   | L2  |
|-----|------|------|------|------|-----|
| 9.7 | M8x1 | 18.8 | 12.7 | 23.3 | 8.4 |

## Ordering data

| Electrical connection 1  | Electrical connection 2 | Weight [g] | Part No. | Type        |
|--|-------------------------|------------|----------|-------------|
| Socket, square design, pin allocations ZC, metric screw, 2-pin | Plug M8x1, 3-pin        | 3.5        | 571686   | VAVE-C8-1R8 |
|  | Plug M8x1, 4-pin        | 3.5        | 573194   | VAVE-C8-1R1 |

## Plug socket MSSD-ZBZC

- For valves with ZB and ZC solenoid coils



## General technical data

|   |   |
|---|---|
| Electrical connection                       | Socket                                    |
|   | 2-pin                                     |
|   | Square design                             |
|   | Pin allocations ZB/ZC, self-tapping screw |
| Nominal operating voltage [V DC]            | 24  |
| Operating voltage range [V DC]              | 3 ... 36                                  |
| Connection cross section [mm <sup>2</sup> ] | 0.22 ... 0.34                             |
| Type of mounting                            | Self-tapping central screw                |
| Mounting position                           | Any                                       |
| Protection class to EN 60529                | IP40 (assembled)                          |

## Materials

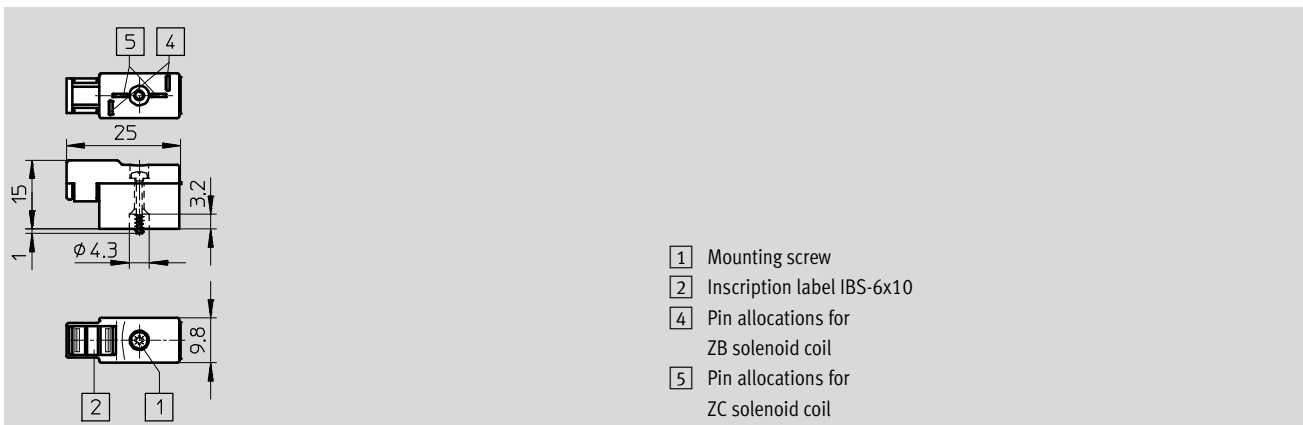
|                   |                |
|-------------------|----------------|
| Housing           | PA             |
| Note on materials | RoHS-compliant |

## Operating and environmental conditions

|                          |                    |
|--------------------------|--------------------|
| Ambient temperature [°C] | -10 ... +50        |
| Certification            | Germanischer Lloyd |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



## Ordering data

| Description  | Weight | Part No.      | Type             |
|--|--------|---------------|------------------|
| Plug socket for valves with ZB and ZC solenoid coils | 11 g   | <b>185521</b> | <b>MSSD-ZBZC</b> |

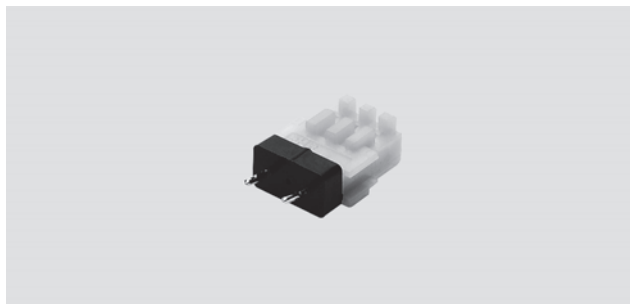
# Plug connectors for valves

PCBC – Technical data

FESTO

## Soldering base PCBC

- For mounting miniature valves MHA1 and MHP1 on a PCB with plug connection underneath (-PI)



## General technical data

|                              |                            |
|------------------------------|----------------------------|
| Electrical connection        | Angled socket              |
|                              | 2-pin                      |
|                              | Square design              |
|                              | Pin allocations H, plug-in |
| Type of mounting             | Soldering base             |
| Mounting position            | Any                        |
| Protection class to EN 60529 | IP40 (assembled)           |
| Weight [g]                   | 5                          |

## Materials

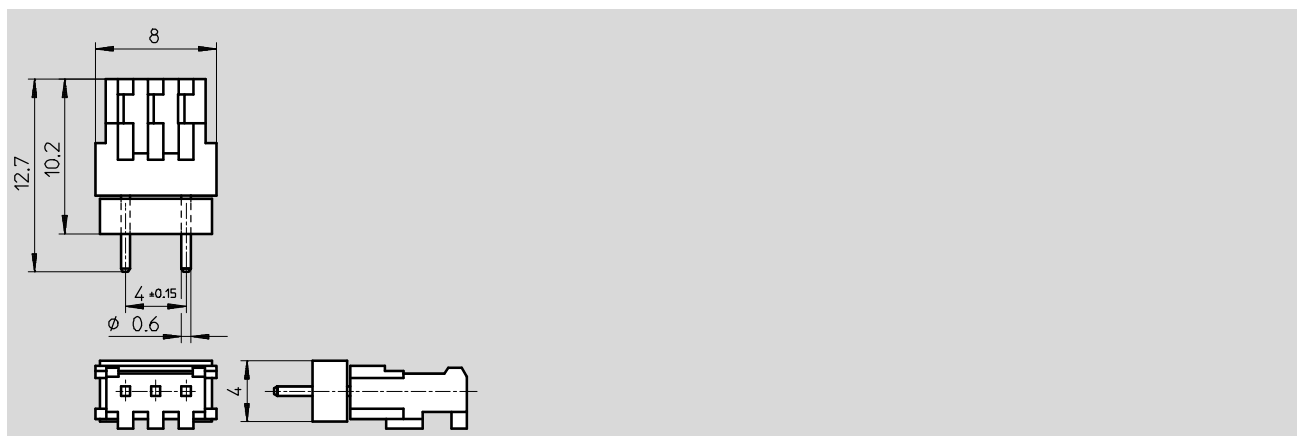
|         |    |
|---------|----|
| Housing | PA |
|---------|----|

## Operating and environmental conditions

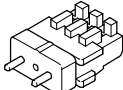
|                          |              |
|--------------------------|--------------|
| Ambient temperature [°C] | -40 ... +115 |
|--------------------------|--------------|

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



## Ordering data

| Soldering base  | Electrical connection       | Packaging unit | Part No.      | Type              |
|---|-----------------------------|----------------|---------------|-------------------|
|  | 2-pin, for miniature valves | 10 pieces      | <b>197261</b> | <b>PCBC-A-10</b>  |
|   |                             | 100 pieces     | <b>197262</b> | <b>PCBC-A-100</b> |

## Multi-pin plug socket NECA

- For soft-start and quick exhaust valve MS6-SV-E-10V24



## Technical data

|                               |                    |                                       |
|-------------------------------|--------------------|---------------------------------------|
| Type of mounting              |                    | Via through-hole                      |
| Electrical connection 1       |                    | Sub-D 9-pin                           |
| Electrical connection 2       |                    | Screw terminal 9-pin                  |
| Operating voltage range       | [V DC]             | 21.6 ... 26.4                         |
| Nominal operating voltage     | [V DC]             | 24                                    |
| Acceptable current load       | [A]                | 1.0                                   |
| Connection cross section      | [mm <sup>2</sup> ] | 0.34 ... 1.0 without wire end sleeves |
|                               | [mm <sup>2</sup> ] | 0.34 ... 0.5 with wire end sleeves    |
| Permissible cable diameter    | [mm]               | 5.0 ... 10.0                          |
| Protection class to IEC 60529 |                    | IP65                                  |

## Operating and environmental conditions

|  |      |                     |
|--|------|---------------------|
| Relative air humidity                        |      | 95%, non-condensing |
| Ambient temperature                          | [°C] | 0 ... +50           |
| Storage temperature                          | [°C] | -20 ... +70         |
| Corrosion resistance class CRC <sup>1)</sup> |      | 2                   |

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

## Materials

|           |  |               |
|-----------|--|---------------|
| Housing   |  | PA reinforced |
| Screws    |  | Steel         |
| Union nut |  | Brass         |
| Seals     |  | NBR           |



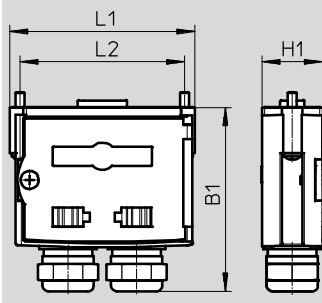
# Plug connectors for valves

Soft-start and quick exhaust valves MS-SV-E – Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| B1 | H1 | L1 | L2   |
|----|----|----|------|
| 61 | 20 | 61 | 54.1 |

## Ordering data

| Description        | Connection   | Weight [g] | Part No. | Type             |
|--------------------|--|------------|----------|------------------|
| For MS6-SV-E-10V24 | Without cable, static enable signals (EN1 = 24 V, EN2 = 24 V)  | 60         | 548719   | NECA-S1G9-P9-MP1 |
|                    | Without cable, static enable signals (EN1 = 0 V, EN2 = 24 V), cross-circuit detection possible                                 | 60         | 552703   | NECA-S1G9-P9-MP3 |
|                    | Without cable, static enable signals (EN1 = 0 V, EN2 = 24 V), galvanic isolation of the enable signals from the supply voltage | 60         | 573695   | NECA-S1G9-P9-MP5 |

## Plug socket MPPE

- For proportional pressure regulators MPPE and MPPES



## General technical data

|   |                    |
|---|--------------------|
| Electrical connection                       | Angled socket      |
|   | 8-pin              |
|   | Solderable         |
| Operating voltage range [V DC]              | Max. 60            |
| Acceptable current load [A]                 | 5                  |
| Cable connector                             | Pg9                |
| Permissible cable diameter [mm]             | 6 ... 8            |
| Connection cross section [mm <sup>2</sup> ] | Max. 0.75          |
| Connection frequency                        | 500                |
| Type of mounting                            | M16x0.75 union nut |
| Mounting position                           | Any                |
| Protection class to EN 60529                | IP67 (assembled)   |

## Materials

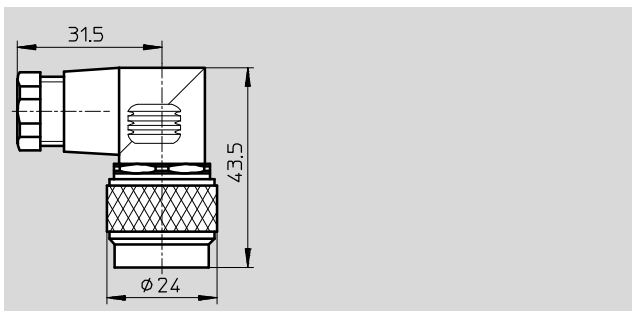
|                |                   |
|----------------|-------------------|
| Housing        | PA                |
| Housing colour | Black             |
| Union nut      | PA                |
| Pin contacts   | Tin-plated copper |

## Operating and environmental conditions

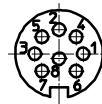
|                          |             |
|--------------------------|-------------|
| Ambient temperature [°C] | -30 ... +95 |
|--------------------------|-------------|

## Dimensions

MPPE-3-B



Pin allocation



Download CAD data → [www.festo.com](http://www.festo.com)






## Ordering data

| Description   | Weight | Part No.      | Type            |
|---|--------|---------------|-----------------|
| Plug socket for proportional pressure regulators MPPE and MPPES | 65 g   | <b>161839</b> | <b>MPPE-3-B</b> |

# Plug connectors for valves

Illuminating seals, square design – Product range overview

FESTO

| Illuminating sealM...-LD  |                      |   |                      |                    |  |  |     |
|---|----------------------|---|----------------------|--------------------|--|--|-----|
| Version   | Type                 | Electrical connection                       | for connecting cable | for plug connector | for solenoid coil  | → Page/ Internet   |     |
|    | <b>MC-LD</b>         | Pin allocations type A, to EN 175301-803    | KMC                  | MSSD-C<br>MSSD-N   | Solenoid coils <ul style="list-style-type: none"> <li>• MD/MH</li> <li>• MSG/MSW</li> <li>• MSN1</li> <li>• VACC-...-A1</li> <li>• VACN-...-A1</li> </ul> Standard Namur valves <ul style="list-style-type: none"> <li>• VSNB</li> <li>• VSNC-...-A1</li> </ul> Standard valves to ISO 5599-1 <ul style="list-style-type: none"> <li>• MN1H</li> <li>• MDH</li> </ul>  | Standard valves to ISO 15218 <ul style="list-style-type: none"> <li>• MD</li> </ul> On-off valve <ul style="list-style-type: none"> <li>• MS9/MS12-EE</li> </ul> Soft-start valve <ul style="list-style-type: none"> <li>• MS12-DE</li> </ul> Soft-start/quick exhaust valves <ul style="list-style-type: none"> <li>• MS9-SV-C</li> </ul>   | 333 |
|    | <b>MV-LD</b>         | Pin allocations type B, to EN 175301-803    | KMV                  | MSSD-V             | Universal directional control valves <ul style="list-style-type: none"> <li>• MVH (Tiger 2000)</li> </ul>  |  | 333 |
|   | <b>MF-LD</b>         | Pin allocations type B, industrial standard | KMF                  | MSSD-F             | Solenoid coils <ul style="list-style-type: none"> <li>• MSF</li> <li>• VACF-...-B2</li> </ul> Standard Namur valves <ul style="list-style-type: none"> <li>• VSNC-...-B2</li> <li>• NVF3</li> <li>• MFH</li> </ul> Standard valves to ISO 5599-1   | <ul style="list-style-type: none"> <li>• MFH</li> </ul> Universal directional control valves <ul style="list-style-type: none"> <li>• VUVS-...-B2</li> <li>• MFH (Tiger 2000)</li> <li>• MFH (Tiger Classic)</li> </ul> Application-specific valves <ul style="list-style-type: none"> <li>• MFH (M5 Compact System)</li> </ul>  | 333 |
|  | <b>MEB-LD</b>        | Pin allocations type C, to EN 175301-803    | KMEB                 | MSSD-EB            | Solenoid coils <ul style="list-style-type: none"> <li>• VACS-...-C1</li> <li>• VACF-...-C1</li> </ul> Standard valves to ISO 15407-1 <ul style="list-style-type: none"> <li>• VSVA-...-C1</li> </ul> Standard valves to ISO 15218 <ul style="list-style-type: none"> <li>• VSCS-...-C1</li> </ul> Universal directional control valves <ul style="list-style-type: none"> <li>• VUVS-...-C1</li> <li>• VUVB-...-C1</li> <li>• CPV18</li> <li>• CPE18/CPE24-M...H</li> <li>• MEBH (Midi pneumatic)</li> </ul> | Application-specific valves <ul style="list-style-type: none"> <li>• VOFA-...-C1-APP/-APN</li> <li>• MHE4/MHP4/MHA4</li> </ul> On-off valve <ul style="list-style-type: none"> <li>• MS4/MS6-EE</li> </ul> Soft-start valve <ul style="list-style-type: none"> <li>• MS4/MS6-DE</li> </ul> Soft-start/quick exhaust valves <ul style="list-style-type: none"> <li>• MS6-SV-C</li> <li>• MS6-SV-D</li> </ul> Vacuum generators <ul style="list-style-type: none"> <li>• VADM-95/-140/-200/300</li> <li>• VADMI-95/-140/-200/-300</li> </ul> | 333 |
|  | <b>ME-LD-12-24DC</b> | Pin allocations type C, industrial standard | KME                  | MSSD-E             | Universal directional control valves <ul style="list-style-type: none"> <li>• MEH (Midi Pneumatik)</li> </ul> Vacuum generators <ul style="list-style-type: none"> <li>• VAD-ME</li> </ul>   |  | 333 |

### Illuminating seal

MF-LD

MC-LD

MV-LD

ME-LD

MEB-LD

Illuminating seals are mounted between the plug socket and solenoid coil. The sealing lip points to the coil side, the label to the device socket. The seal is illuminated yellow after the power is switched on.



### General technical data

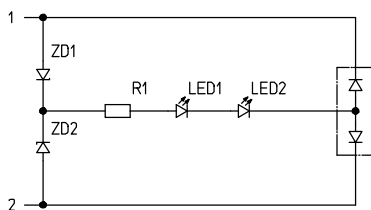
| Operating voltage                           |             | 12 ... 24 V DC                           | 230 V AC     |
|---|-------------|--|--------------|
| Operating voltage range                     | [V DC]      | 12 ... 24                                | –            |
| Nominal operating voltage AC                | [V AC]      | –  | 230±10%      |
| Protective circuit, max. switch-off voltage | [V DC]      | yes, 50                                  | –            |
| Degree of contamination                     |             | –  | 3            |
| Switching position display                  |             | LED (yellow)                             | LED (yellow) |
| Rated output of illuminating seal           | [mW]        | 50                                       | 330          |
| Impulse withstand voltage                   | MF-LD [kV]  | –  | 4            |
|   | MC-LD [kV]  | –  | 4            |
|   | MV-LD [kV]  | –  | 2.5          |
|   | MEB-LD [kV] | –  | 2.5          |
| Electrical connection                       |             | To EN 175301-803                         |              |
| Protective earth conductor connection       |             | Yes                                      |              |
| Type of mounting                            | MF-LD       | On solenoid valve via M3 central screw   |              |
|   | MC-LD       | On solenoid valve via M3 central screw   |              |
|   | MV-LD       | On solenoid valve via M3 central screw   |              |
|   | ME-LD       | On solenoid valve via M3 central screw   |              |
|   | MEB-LD      | On solenoid valve via M2.5 central screw |              |
| Housing material                            |             | TPE-U (PU)                               |              |
| Protection class to EN 60529                |             | IP65 (in assembled state)                |              |

### Operating and environmental conditions

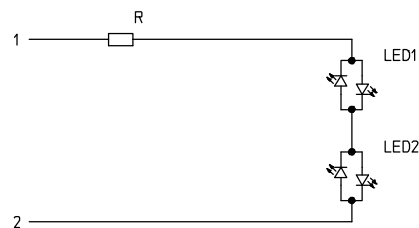
| Operating voltage                             |      | 12 ... 24 V DC | 230 V AC                                    |
|---|------|----------------|---|
| Ambient temperature                           | [°C] | –25 ... +85    | –25 ... +85                                 |
| CE marking<br>(see declaration of conformity) |      | –              | In accordance with EU Low Voltage Directive |

### Circuit diagram

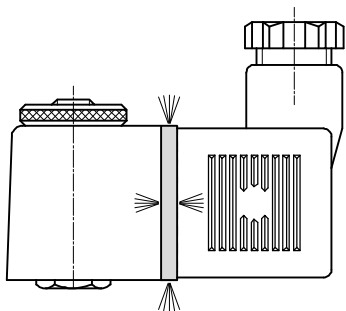
12 ... 24 V DC



230 V AC



## Installation of the illuminating seal








### Note

The original seal must be removed before the illuminating seal is installed.  
The sealing surface of the illuminating seal must point towards the plug socket, and the sealing rim towards the solenoid coil.

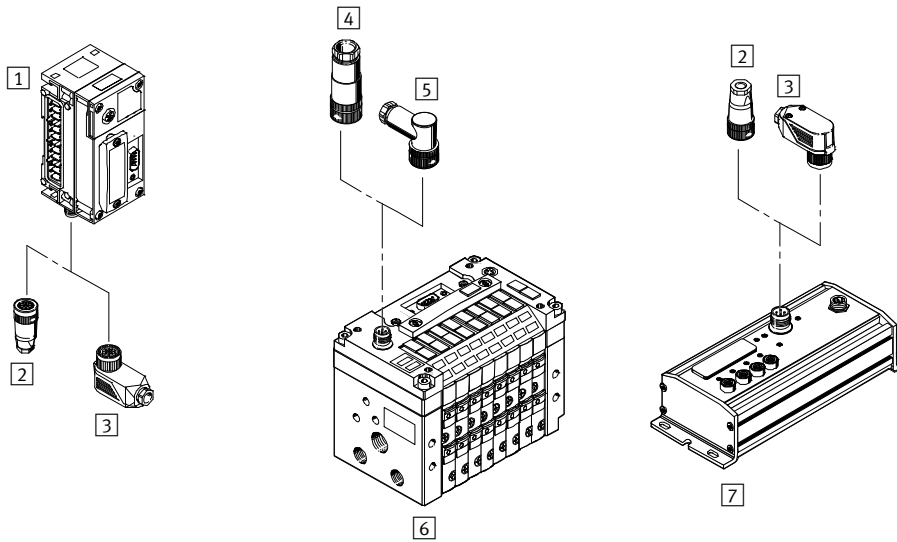
The illuminating seal is intended to be installed once.  
Reusing illuminating seals can impair their function.

## Ordering data

| Illuminating seal for   | Electrical connection to EN 175301-803 | Product weight [g]                          | Max. tightening torque [Nm] | Operating voltage [V] | Part No.     | Type                                |
|---|--|---|-----------------------------|-----------------------|--------------|-------------------------------------|
|    | D and N1 solenoid coils                | Pin allocations type A, to EN 175301-803    | 1.6                         | 0.6                   | 12 ... 24 DC | <b>19145</b> <b>MC-LD-12-24DC</b>   |
|   |  |   |                             |                       | 230 AC       | <b>19146</b> <b>MC-LD-230AC</b>     |
|   | V solenoid coils                       | Pin allocations type B, to EN 175301-803    | 1.6                         | 0.35                  | 12 ... 24 DC | <b>35558</b> <b>MV-LD-12-24DC</b>   |
|   |  |   |                             |                       | 230 AC       | <b>151716</b> <b>MV-LD-230AC</b>    |
|  | F solenoid coils                       | Pin allocations type B, industrial standard | 1.6                         | 0.6                   | 12 ... 24 DC | <b>19143</b> <b>MF-LD-12-24DC</b>   |
|   |  |   |                             |                       | 230 AC       | <b>19144</b> <b>MF-LD-230AC</b>     |
|  | EB solenoid coils                      | Pin allocations type C, to EN 175301-803    | 0.6                         | 0.5                   | 12 ... 24 DC | <b>151717</b> <b>MEB-LD-12-24DC</b> |
|   |  |   |                             |                       | 230 AC       | <b>151718</b> <b>MEB-LD-230AC</b>   |
|  | E solenoid coils                       | Pin allocations type C, industrial standard | 0.6                         | 0.35                  | 12 ... 24 DC | <b>19141</b> <b>ME-LD-12-24DC</b>   |

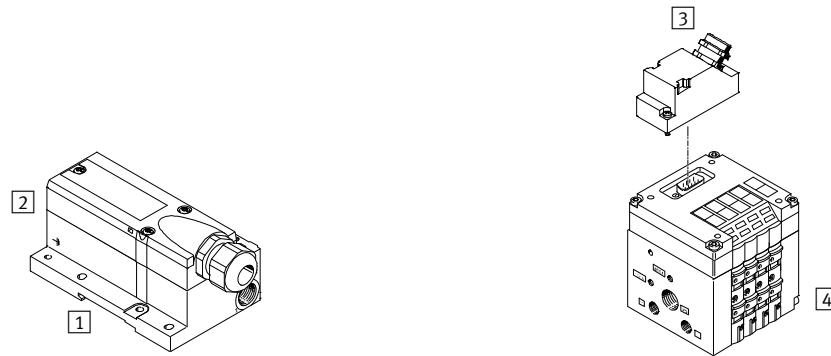


## Power supply



|   | Type                | → Page/Internet |
|---|---------------------|-----------------|
| 1 | Fieldbus node       | CPX-FB-...      |
| 2 | Power supply socket | NTSD-GD-...     |
|   |                     | NECU-G78G4-C2   |
|   |                     | NECU-G78G5-C2   |
| 3 | Power supply socket | NTSD-WD-9       |
|   |                     | NTSD-WD-11      |
| 4 | Fieldbus connection | FBSD-GD-...     |
| 5 | Fieldbus connection | FBSD-WD-7       |
|   |                     | FBSD-WD-9       |
| 6 | Valve terminal      | CPV             |
| 7 | Fieldbus node       | CP-FB05-E       |

## Multi-pin plug connection



|   | Type           | → Page/Internet |
|---|----------------|-----------------|
| 1 | Valve terminal | MPA             |
|   | Valve terminal | MPA-F           |
|   | Valve terminal | VTSA            |
| 2 | Cover          | VMPA-KMS-H      |
|   |                | NECV-IS1W37     |
| 3 | Plug socket    | SD-SUB-D-BU9    |
|   |                | SD-SUB-D-BU25   |
| 4 | Valve terminal | CPV             |



# Plug connectors for valve terminals

NTSD, for power supply – Technical data

FESTO

## Power supply socket NTSD

- Plug/socket for power supply
- Can be fabricated with any cable lengths
- 4-pin plug socket
- With screw terminals
- Wire cross section of up to 2.5 mm<sup>2</sup>



## General technical data

| Type                          | NTSD-...                |
|-------------------------------|-------------------------|
| Type of mounting              | M18 union nut           |
| Mounting position             | Any                     |
| Operating voltage range [V]   | 250 AC                  |
| Current-carrying capacity [A] | 16                      |
| Protection class to EN 60 529 | IP67 (assembled)        |
| Material of housing           | Polybuteneterephthalate |
| Material of contacts          | Brass/copper base alloy |
| Storage temperature [°C]      | -20 ... +70             |
| Ambient temperature [°C]      | -5 ... +50              |

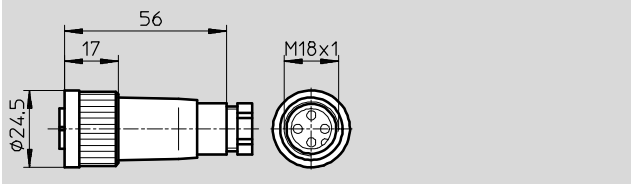
## Ordering data

|  | Electrical connection                            | Cable gland fitting | Permissible cable diameter [mm] | Max. wire cross section [mm <sup>2</sup> ] | Product weight [g] | Type                         | Part No.       |
|--|--|---------------------|---------------------------------|--|--------------------|------------------------------|----------------|
|  | Socket, straight, 4-pin, screw terminal          | Pg9                 | 6 ... 8                         | 1.5  | 25                 | <b>NTSD-GD-9</b>             | <b>18 493</b>  |
|  | Socket, straight, 5-pin, screw terminal, B-coded | Pg9                 | 6 ... 8                         | 0.75                                       | 25                 | <b>NTSD-GD-9-M12-5POL-RK</b> | <b>538 999</b> |
|  | Socket, straight, 4-pin, screw terminal          | Pg13.5              | 10 ... 12                       | 2.5  | 31                 | <b>NTSD-GD-13,5</b>          | <b>18 526</b>  |
|  | Socket, angled, 4-pin, screw terminal            | Pg9                 | 6 ... 8                         | 1.5  | 30                 | <b>NTSD-WD-9</b>             | <b>18 527</b>  |
|  | Socket, angled, 4-pin, screw terminal            | Pg11                | 5 ... 11                        | 2.5  | 34                 | <b>NTSD-WD-11</b>            | <b>533 119</b> |

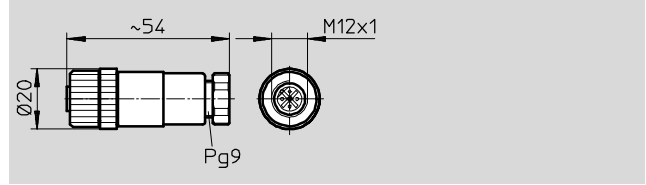
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

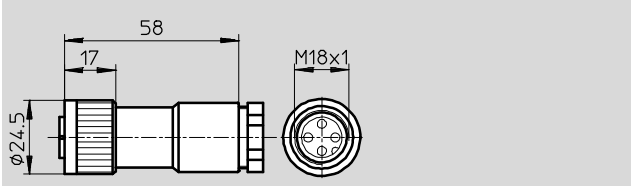
NTSD-GD-9



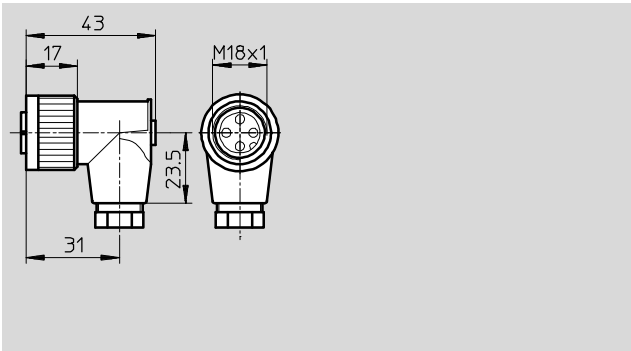
NTSD-GD-9-M12-5POL-RK



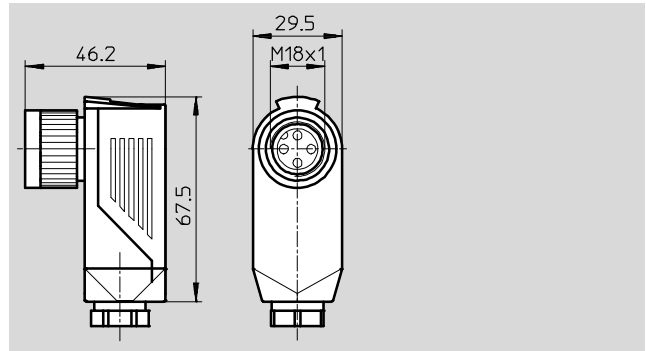
NTSD-GD-13,5



NTSD-WD-9



NTSD-WD-11



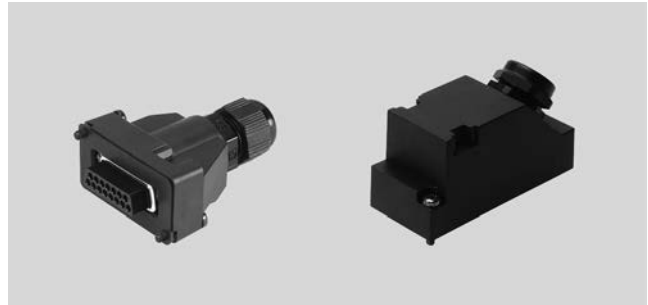
# Plug connectors for valve terminals

SD-SUB-...-BU, Sub-D socket – Technical data

FESTO

## Plug connector SD-SUB-...-BU

- Socket for multi-pin plug connection
- Can be assembled with any cable lengths
- 9-pin, 15-pin or 25-pin
- Sub-D



## General technical data

|                                  |                  |
|----------------------------------|------------------|
| Type of mounting                 | Two M3x16 screws |
| Mounting position                | Any              |
| Nominal operating voltage [V DC] | 24               |
| Acceptable current load [A]      | 5                |
| Protection class to EN 60529     | IP65 (assembled) |

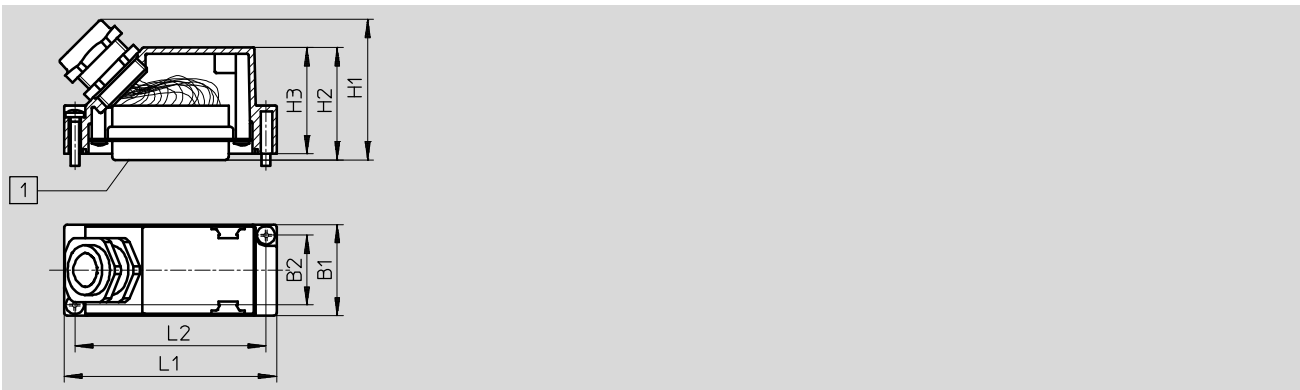
## Materials

| Type        | SD-SUB-D-BU9                                    | SD-SUB-D-BU25 | SD-SUB-D-BU15 |
|-------------|---|---------------|---------------|
| Housing     | PA  |               |               |
| Pin contact | Nickel-plated and gold-plated copper base alloy |               |               |
| Seals       | NBR   | NBR           | CR            |

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

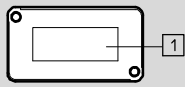
SD-SUB-D-BU-...



| Type          | 1                    | B1 | B2 | H1 | H2 | H3 | L1 | L2 |
|---------------|----------------------|----|----|----|----|----|----|----|
| SD-SUB-D-BU9  | Sub-D socket, 9-pin  | 30 | 23 | 43 | 37 | 35 | 50 | 43 |
| SD-SUB-D-BU25 | Sub-D socket, 25-pin | 30 | 23 | 47 | 37 | 35 | 70 | 63 |

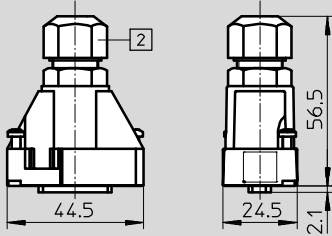
## Dimensions

SD-SUB-D-BU15



1 Sub-D socket, 15-pin

2 Cable connector PG9



## Ordering data

|  | Electrical connection | Cable connector | Perm. cable Ø [mm] | Product weight [g] | Part No.      | Type                 |
|--|-----------------------|-----------------|--------------------|--------------------|---------------|----------------------|
|  | Socket, 9-pin, Sub-D  | Pg9             | 6 ... 9            | 38                 | <b>18708</b>  | <b>SD-SUB-D-BU9</b>  |
|  | Socket, 25-pin, Sub-D | Pg11            | 7 ... 12           | 53                 | <b>18709</b>  | <b>SD-SUB-D-BU25</b> |
|  | Socket, 15-pin, Sub-D | Pg9             | 3 ... 8            | 33                 | <b>177675</b> | <b>SD-SUB-D-BU15</b> |

# Plug connectors for valve terminals

SD-SUB-D-ST for inputs/outputs – Technical data

FESTO

## Plug connector SD-SUB-D-ST

- Plug for inputs/outputs
- Can be assembled with any cable lengths
- 15-pin or 25-pin
- Sub-D



## General technical data

|                              |                  |          |
|------------------------------|------------------|----------|
| Type                         | SD-SUB-D-ST      |          |
| Type of mounting             | 2x M3x16 screws  |          |
| Mounting position            | Any              |          |
| Operating voltage range      | [V AC]           | Max. 250 |
|                              | [V DC]           | Max. 250 |
| Acceptable current load      | [A]              | 5        |
| Protection class to EN 60529 | IP65 (assembled) |          |

## Materials

|                   |                               |                |
|-------------------|-------------------------------|----------------|
| Type              | SD-SUB-D-ST-15                | SD-SUB-D-ST-25 |
| Housing           | PA                            |                |
| Seals             | Neoprene                      | NBR            |
| Note on materials | RoHS-compliant                |                |
| Pin contact       | Gold-plated copper base alloy |                |

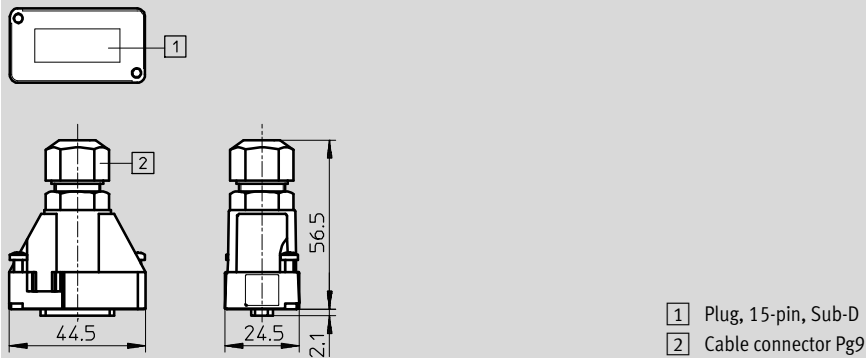
## Operating and environmental conditions

|                     |      |             |
|---------------------|------|-------------|
| Ambient temperature | [°C] | -20 ... +80 |
|---------------------|------|-------------|

## Dimensions

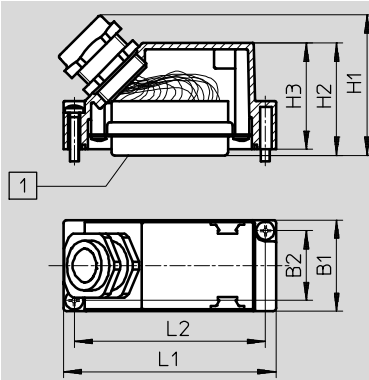
Download CAD data → [www.festo.com](http://www.festo.com)

### SD-SUB-D-ST-15



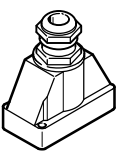
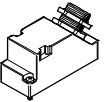
- 1 Plug, 15-pin, Sub-D
- 2 Cable connector Pg9

### SD-SUB-D-ST-25



| Type          | 1                   | B1 | B2 | H1 | H2 | H3 | L1 | L2 |
|---------------|---------------------|----|----|----|----|----|----|----|
| SD-SUB-D-ST25 | Plug, 25-pin, Sub-D | 30 | 23 | 47 | 37 | 35 | 70 | 63 |

## Ordering data

|   | Electrical connection | Cable connector | Perm. cable Ø [mm] | Weight [g] | Part No. | Type          |
|---|-----------------------|-----------------|--------------------|------------|----------|---------------|
|  | Plug, 15-pin, Sub-D   | Pg9             | 6 ... 9            | 37         | 192768   | SD-SUB-D-ST15 |
|  | Plug, 25-pin, Sub-D   | Pg11            | 7 ... 12           | 51         | 527522   | SD-SUB-D-ST25 |

# Plug connectors for valve terminals

VMPA-KMS-H, for multi-pin plug connection – Technical data

FESTO

## Hood VMPA-KMS-H

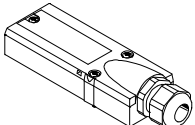
- Plug socket for multi-pin connection (to valve terminal MPA-S)
- Can be fabricated with any cable lengths
- 25-pin
- Sub-D



## General technical data

| Type                           | VMPA-KMS-H                      |
|--------------------------------|---------------------------------|
| Type of mounting               | 3 M3x22 screws                  |
| Mounting position              | Any                             |
| Cable gland connection         | M20x1.5                         |
| Operating voltage range [V DC] | 24                              |
| Current-carrying capacity [A]  | 3                               |
| Protection class to EN 60 529  | IP65 (assembled)                |
| Material of housing            | Fibreglass reinforced polyamide |
| Material of contacts           | Gold-plated copper base alloy   |
| Material of seal               | Polyurethane                    |
| Ambient temperature [°C]       | -30 ... +80                     |

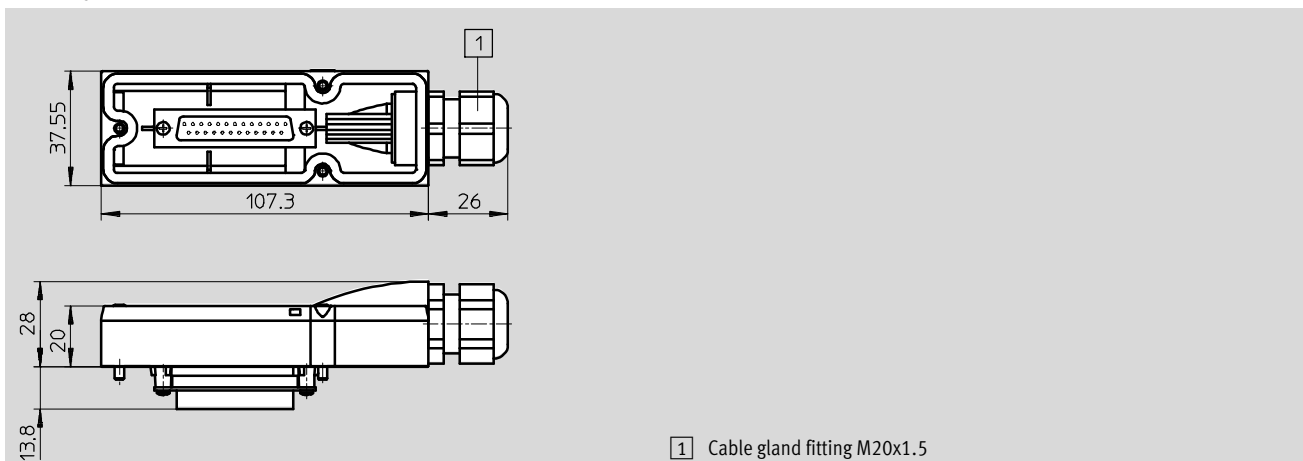
## Ordering data

|   | Electrical connection | Perm. cable diameter [mm] | Type       | Part No. |
|---|-----------------------|---------------------------|------------|----------|
|  | 25-pin Sub-D socket   | 6 ... 12                  | VMPA-KMS-H | 533 198  |

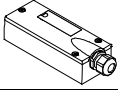



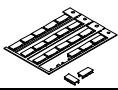
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

VMPA-KMS-H



## Ordering data

| Designation   | Description  | Type       | Part No.              |
|---|--|------------|-----------------------|
| <b>Cover for multi-pin plug</b>   |  |            |                       |
|  | For user configuration                                       | NECV-S1W37 | 545974                |
| <b>Cover</b>  |  |            |                       |
|  | End cap for electrical manifold module, size 18 mm and 26 mm | 10 pieces  | VABD-S4-E-C<br>547713 |
| <b>Inscription label holder/inscription labels</b>                                |  |            |                       |
|  | Clip-on inscription label holder for valve cap               | 5 pieces   | ASCF-T-S6<br>540888   |
|  | Inscription label holder for manifold blocks                 | 5 pieces   | ASCF-M-S6<br>540889   |
|   | Inscription label holder for manifold blocks, size 52 mm     | 5 pieces   | ASCF-M-S2-2<br>562577 |
|  | Inscription label (20 labels in frames)                      | 20 pieces  | IBS-9x20<br>18182     |



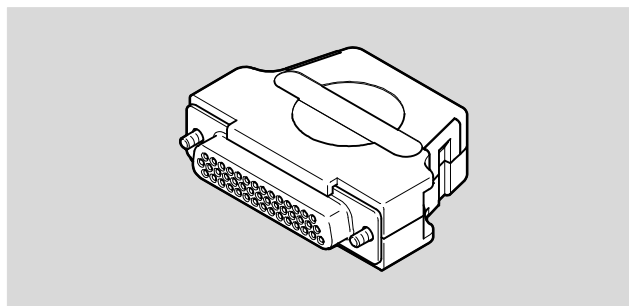
# Plug connectors for valve terminals

NEFF-S1G44LB – Technical data

FESTO

## Plug socket NEFF-S1G44LB

- Plug socket for operating an interlock-capable valve terminal interface in I-Port operation only



### General technical data

|                               |                  |
|-------------------------------|------------------|
| Max. tightening torque [Nm]   | 0.24             |
| Degree of protection EN 60529 | IP40 (assembled) |

### Materials

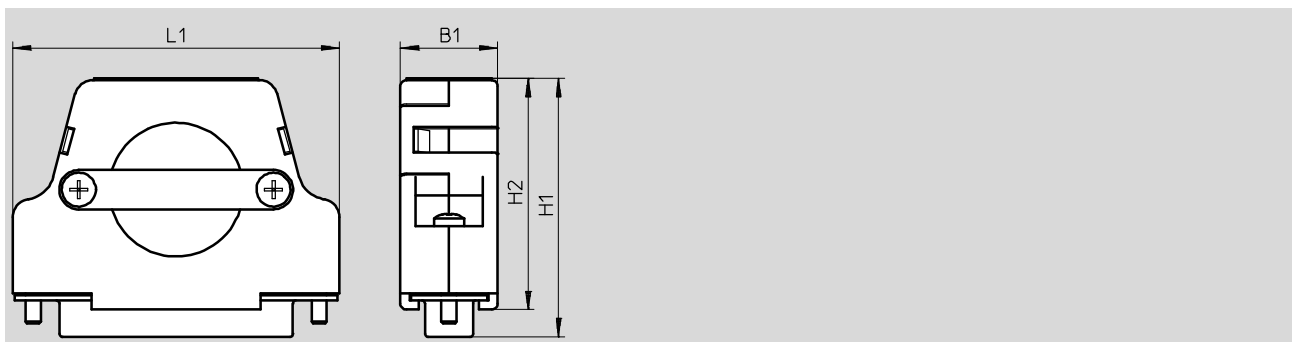
|                   |                |
|-------------------|----------------|
| Note on materials | RoHS-compliant |
|-------------------|----------------|

### Operating and environmental conditions

|                          |            |
|--------------------------|------------|
| Ambient temperature [°C] | -5 ... +50 |
|--------------------------|------------|

### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type         | B1 | H1   | H2 | L1   |
|--------------|----|------|----|------|
| NEFF-S1G44LB | 16 | 42.5 | 38 | 53.7 |

### Ordering data

|             | Part No. | Type         |
|-------------|----------|--------------|
| Plug socket | 1589339  | NEFF-S1G44LB |

Specified limit values for technical data and any specific instructions must be adhered to by the user in order to ensure recommended operating conditions.

When pneumatic components are used, the user shall ensure that they are operated using correctly prepared compressed air without aggressive media.

When Festo components are used in safety-oriented applications, the user shall ensure that all applicable

national and local safety laws and regulations, for example the machine directive, together with the relevant references to standards are observed. Unauthorised conversions or modifications to products and systems from Festo involve a safety risk and are thus not permissible.

Festo does not accept any liability for resulting damages.

You should contact Festo's advisors if one of the following apply to your application:

- The ambient conditions and conditions of use or the operating medium differ from the specified technical data.
- The product is to perform a safety function.
- A risk or safety analysis is required.
- You are unsure about the product's suitability for use in the planned application.
- You are unsure about the product's suitability for use in safety-oriented applications.

All technical data applies at the time of going to print.

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