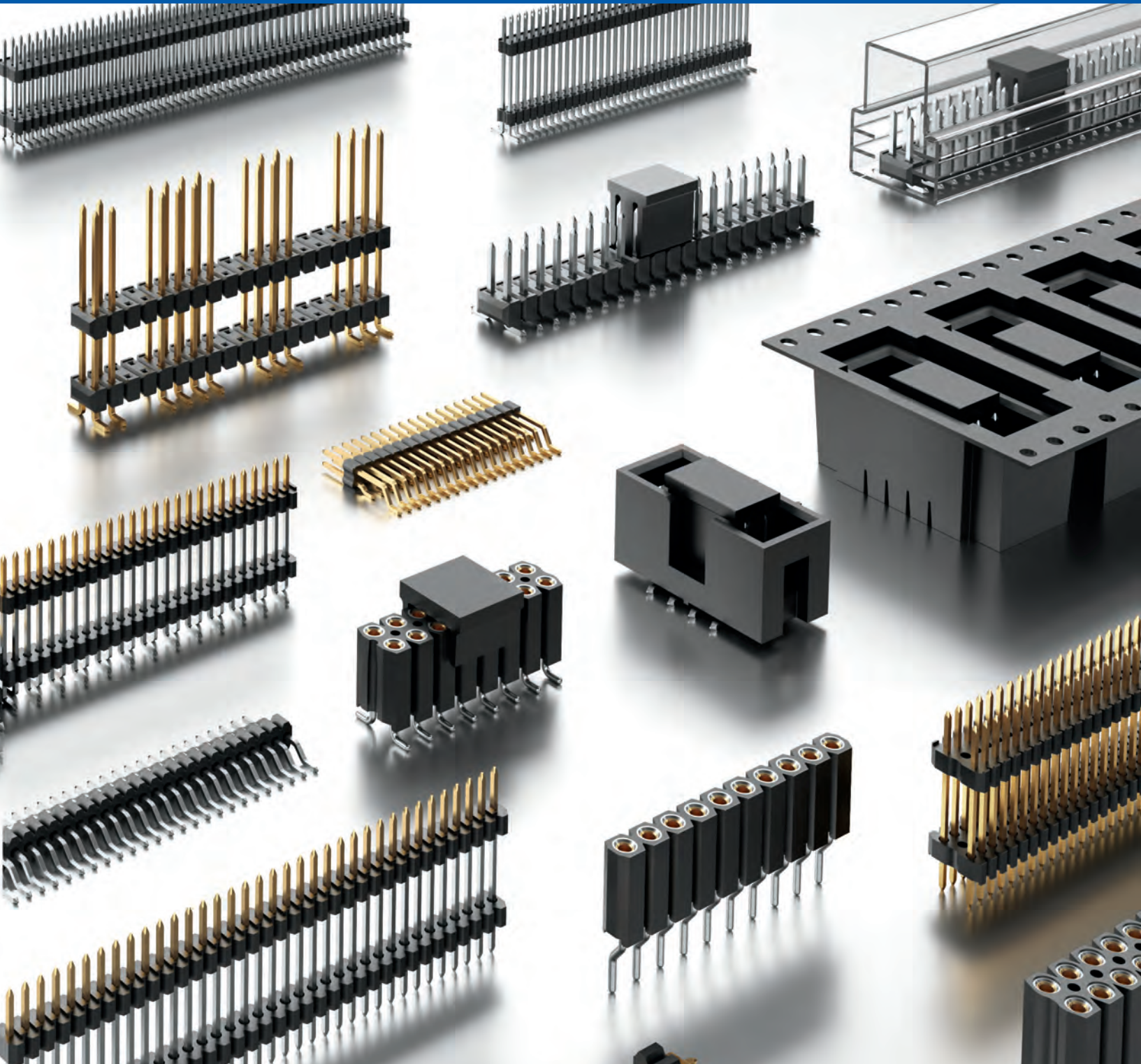


fischer elektronik

to cool to protect to connect



f.con.e

Sockets

Connectors



Brackets

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| | | | | | |
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Extruded profiles:

extruded heatsinks, extruded heatsinks for lock-in retaining spring, extruded heatsinks for PCB mounting, fin coolers, fluid coolers, high-performance heatsinks

A 1
-
A 172

A**Heatsinks for processors and LED:**

heatsinks and fan coolers for universal PGA/BGA, DIL, PLCC, heatsinks for LED, pin heatsinks

B 1
-
B 78

B**Board level heatsinks:**

finger-shaped heatsinks, heatsinks for transistors in plastic case, attachable heatsinks, small heatsinks, copper heatsinks for D PAK and others

C 1
-
C 36

C**Cooling aggregates:**

miniature cooling aggregates, heatsink cooling aggregates, high capacity cooling aggregates, multi module cooling aggregates, hollow-fin aggregates, cooling aggregates with axial fan

D 1
-
D 57

D**Thermal interface material and accessories for electronic components:**

thermally conductive foil made of siliconelastomer, silicone-free thermal conductive foils, GEL thermal conductive foils, aluminium oxide wafers, mica wafers, thermal conductive paste, thermally conductive adhesive, fixing clamp for mounting rail, guide rails, mounting material for heatsinks

E 1
-
E 105

E**Sockets:**

IC-sockets for DIL, PLCC, sockets for transistors, crystal oscillators and connector-sleeves

F 1
-
F 26

F**PCB connectors and accessories:**

male and female headers, grid spacing 2.54; 2.50; 2.00 and 1.27 mm, high precision contact strips, direct female connectors, jumpers

G 1
-
G 107

G**IDC connectors:**

design DIL, shroud-male header, single and double row female headers, lockable connectors, ribbon cable

H 1
-
H 19

H**D-Sub connectors:**

USB connectors, RJ45 connectors, D-Sub male and female headers, connectors with mounting option, connectors for ribbon cable, mixed layout connectors, SMD connectors, cover, accessories

I 1
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I 42

I**Brackets:**

brackets for PC and PCI with or without fixing tab, retainer for ISA versions

K 1
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K 32

K**Optoelectronics:**

LED-holders for front panel assembly, LED-holder without LED, LED-holder with mounted LED, light pipes for SMDs

L 1
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L 16

L**Cases:**

shell cases, extruded assembled cases, desk consoles, combination cases, tube cases, miniature aluminium cases, cooling cases, LED line modules, design cases, special front panels, accessories for cases

M 1
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M 82

M**19" Extension systems:**

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N 69

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| ASL 50 SMD | H 3 | BL LP 3 | G 66 | DBM 17W2 T | NEW I 25 | DIL 16 PEK | F 4 |
| ASLA 06 G | H 2 | BL LP 4 | G 66 | DBM 17W2 TA | I 26 | DIL 16 Q | F 3 |
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| ASLA 26 G | H 2 | BLM 2 SMD | G 96 | DBM 7W2 L | I 22 | DIL 20 E | F 4 |
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| HD B 15 L | I 13 | KHPC 229 | K 16 | LL 30 PRL 032 | NEW L 11 | MAH 405 | L 2 |
| HD B 26 L | I 13 | KHPC 230 | K 15 | LL 30 PRL 040 | NEW L 11 | MAH 406 | L 2 |
| HD B 44 L | I 13 | KHPC 241 | K 16 | LL 30 PRL 048 | NEW L 11 | MAH 407 | L 2 |
| HD S 15 L | I 13 | KHPC 242 | K 16 | LL 30 PRL 050 | NEW L 11 | MAH 408 | L 2 |
| HD S 26 L | I 13 | KHPC 243 | K 17 | LL 30 PRL 055 | NEW L 11 | MAH 409 | L 2 |
| HD S 44 L | I 13 | KHPC 262 | K 18 | LL 30 PRL 060 | NEW L 11 | MAH 410 | L 2 |
| HFD 09 | I 39 | KHPC 267 | K 19 | LL 30 PRL 064 | NEW L 11 | MAH 501 | L 3 |
| HFD 15 | I 39 | KHPC 270 | K 19 | LL 30 PRL 070 | NEW L 11 | MAH 502 | L 3 |
| HFD 25 | I 39 | KHPC 271 | K 19 | LL 30 PRL 080 | NEW L 11 | MAH 503 | L 3 |

Alphanumerical product list

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| MAH 505 | L 3 | PCI 065 | K 12 | SBAU 06 Z | H 15 | SL 10 SMD 104 | G 23 |
| MAH 506 | L 3 | PCI 071 | K 15 | SBAU 10 Z | H 15 | SL 10 SMD 130 | G 23 |
| MAH 507 | L 3 | PCI 072 | K 18 | SBAU 14 Z | H 15 | SL 11 097 | G 7 |
| MAH 508 | L 3 | PCI 076 | K 18 | SBAU 16 Z | H 15 | SL 11 112 | G 7 |
| MAH 509 | L 3 | PCI 077 | K 18 | SBAU 20 Z | H 15 | SL 11 124 | G 7 |
| MAH 510 | L 3 | PCI 083 | K 21 | SBAU 26 Z | H 15 | SL 11 139 | G 7 |
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| MK 14 X 2 | G 4 | PLCC 28 SMD | F 9 | SK 18 | NEW F 17 | SL 12 SMD 058 | G 25 |
| MK 14 X 3 | G 4 | PLCC 32 | F 9 | SK 19 | F 17 | SL 12 SMD 083 | G 25 |
| MK 15 | G 4 | PLCC 32 SMD | F 9 | SK 21 Z | NEW F 17 | SL 12 SMD 109 | G 25 |
| MK 17 | G 60 | PLCC 44 | F 9 | SK 40 G | F 18 | SL 13 071 | G 15 |
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| MK 22 SMD | G 79 | PLCC 52 | F 9 | SK 42 | F 18 | SL 13 122 | G 15 |
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| MK 25 SMD | G 80 | PLCC 84 | F 9 | SL 1 025 | G 7 | SL 13 235 | G 15 |
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| PCI 015 | K 14 | SB 6 | F 19 | SL 6 172 | G 14 | SL 22 240 | G 8 |
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| PCI 017 | K 17 | SB 12 | F 20 | SL 6 223 | G 14 | SL 22 316 | G 8 |
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foyer of the company



motivated employees

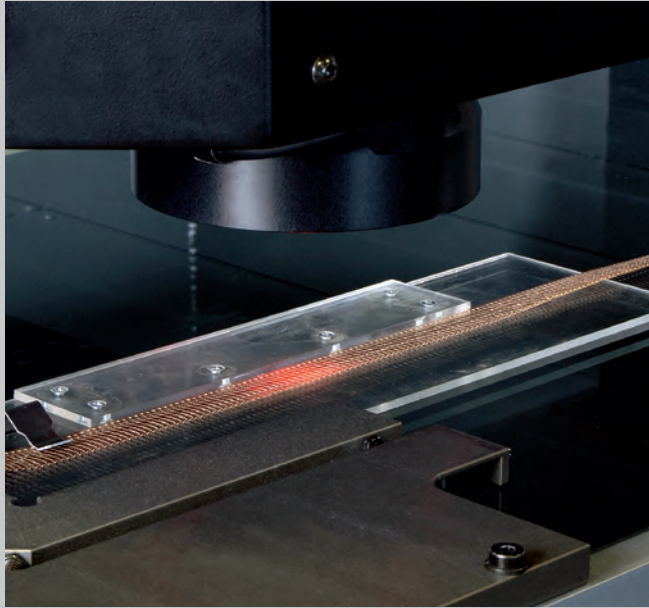


committed field service



innovative product development





certified quality management



own tool-making department



foresighted storekeeping



efficient special machines



up-to-date injection technology



modern surface refinement



Electronica, Fair Munich

D



Embedded World, „NürnbergMesse“

D



Light + Building, „Messe Frankfurt“

D



Amper, Brno Exhibition Centre

CZ



IPS - International Parts + Supply, MOC Munich

D



You can find current exhibition dates at
www.fischerelektronik.de/en/latest-news/exhibition-and-events-congresses

Quality-Management System ISO 9001

We are certified to ISO 9001. This process-directed quality management system implies a constant focus on satisfying the demands of customers, and this is the major objective of our company.

The implementation and further development of our quality management system demonstrably ensures

- guaranteed customer satisfaction and thus the success of our company,
- compliance with customers' requirements at all times through defined processes,
- early detection and prevention of errors, and
- checking of both process effectiveness and efficiency on a regular basis together with steady improvement.

It is through constant vigilance and the provision of evidence that we deliver flawless products, which fully comply with quality requirements, that we maintain our quality certification.

In order to secure lasting company success and to meet our customers' expectations now and in the future, we define measurable objectives within the framework of our quality system, which are regularly checked and developed. We are committed to constant measurement and improvement of our performance.

Our quality management system applies to all processes carried out by our company.

Certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **09 100 4274**

Certificate Holder: **fischer elektronik**
Fischer Elektronik GmbH & Co. KG
 Nottebohmstr. 28
 58511 Lüdenscheid
 Germany

Scope: Design/construction, manufacture, assembly and technical advice for heatsinks, sockets, connectors, mounting parts, cases, 19" assembly systems, computer accessories

Proof has been furnished by means of an audit that the requirements of ISO 9001:2015 are met.

Validity: The certificate is valid from 2021-11-01 until 2024-10-31. First certification 1994

2021-09-09

Lidlas
 TÜV Rheinland Cert GmbH
 Am Grauen Stein · 51105 Köln

Certificate

Standard **ISO 14001:2015**

Certificate Registr. No. **01 104 8209**

Certificate Holder: **fischer elektronik**
Fischer Elektronik GmbH & Co. KG
 Nottebohmstr. 28
 58511 Lüdenscheid
 Germany

Scope: Design/construction, manufacture, assembly and technical advice for heatsinks, sockets, connectors, mounting parts, cases, 19" assembly systems, computer accessories

Proof has been furnished by means of an audit that the requirements of ISO 14001:2015 are met.

Validity: The certificate is valid from 2021-10-09 until 2024-10-08. First certification 1998

2021-09-09

Lidlas
 TÜV Rheinland Cert GmbH
 Am Grauen Stein · 51105 Köln

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Environmental Management System ISO 14001

We consider protection of the environment and saving of natural resources entrepreneurial tasks of high priority.

Aware of this, our company was the first German heat-sink manufacturer to implement, the environmental management system in accordance with ISO 14001 in 1998.

Our entrepreneurial responsibility comprises preventing accidents, safeguarding against occupational diseases, designing workplaces to suit human requirements, developing products which are safe to use, saving resources and avoiding environmental impact to the maximum extent possible.

We already consider environmental compatibility in the product and process development stage. The environmental impact of our activities is documented, assessed and in a continuous improvement process reduced to a minimum.

Implementation and consistent working on and with the environmental management system is a vital process and a constant challenge but finally it will always lead to better results.

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Information management norm DIN EN ISO/IEC 27001

Information security is becoming more important. For the success of our business information are essential values. Administering and protecting those has our top priority.

The information security management system to ISO/IEC 27001 considers three kinds of information: availability, confidentiality and integrity.

This information security management system is the basis for continuous monitoring and optimisation processes. It also ensures the scrupulous handling with information. A protection against attacks on the corporate network and theft is ensured.

Within the information security management system the risk evaluation such as human misconduct takes place by means of error-possibility-influence-analysis.

Certificate

Standard **ISO/IEC 27001:2013**

Certificate Registr. No. **01 153 101878**

Certificate Holder:

fischer elektronik 

Fischer Elektronik GmbH & Co. KG
Nottebohmstr. 28
58511 Lüdenscheid
Germany

Scope:

Design/construction, manufacture, assembly and sales for heatsinks, sockets, connectors, mounting parts, cases, 19" assembly systems, PCB accessory

SoA Version 2.2 dated 14.02.2020

Proof has been furnished by means of an audit that the requirements of ISO/IEC 27001:2013 are met.

Validity:

The certificate is valid from 2020-12-23 until 2023-09-30.

2021-01-12



TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln



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Europäische Gemeinschaft

AEO-Zertifikat

| | |
|--|---|
| DE AEOC 101367 (Nummer des Zertifikats) | |
| 1. Inhaber des AEO-Zertifikats Fischer Elektronik GmbH & Co KG EORI-Nummer: DE 2499770 Nr. der amtl. Eintragung: HRA 2836 UST-IDNr(n): DE 125797501 | 2. Erteilende Behörde Hauptzollamt Dortmund Kronenburgallee 7 DE-44139 Dortmund   |

Der in Feld 1 genannte Inhaber ist

Zugelassener Wirtschaftsbeteiligter

"AEOC (zollrechtliche Vereinfachungen)"

3. Tag, ab dem das Zertifikat wirksam ist:

16.03.2010

The authorised economic operator AEO-certificate

Since 1st January 2008 companies based in the European Union and involved in customs activities have been able to apply for the status of Authorised Economic Operator (AEO). The status entitles a benefit of safety-relevant custom controls and/or simplification according to custom regulations.

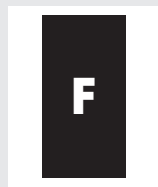
The goal is here to ensure an uninterrupted global supply chain from the producer to the end user. The status of an authorised economic operator is valid in all Member States and is not limited in time.

Our company has the status AEO-C (customs simplification).

The legal requirements of an authorised economic operator are essentially the result of:

Article 5a community custom code (ZK)

Article 14a - 14x community custom code implementing provision (ZK-DVO)



... index area:
shows topics/categories
"current"



... index area:
shows topics/categories
"following"



... page number

G = gold-plated
Z = tin-plated
S = selective gold-plated

... option for surface finishing



... plastic of the insulator is suitable for reflow-soldering up to 260 °C



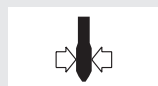
... components are suitable for soldering technique (THT)



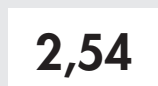
... components are suitable for SMD technique



... components are suitable for THR-SMD technique



... components are suitable for press-fit mounting



... components are suitable for the corresponding grid

Imprinting of cardholders - Your and our time is expensive

An order for imprinting must state the font, the font size and the exact position of the imprint with dimensions, taking in account of countersunk holes etc.. When placing the first order, the company logo must be supplied as a vector file. If these conditions are not complied with, the order for imprinting may have to be rejected, or additional costs will have to be charged.

Compliance with the following criteria ensures smooth handling:

Adobe Illustrator (.ai; .eps) without half-tone images, fonts transformed into paths or supplied
 Adobe Acrobat (.pdf) all fonts enclosed; half-tone images colour-separated (full-tone or scale colours) and
 InDesign (.indd) with correct resolution (300 dpi colour, black / white 600 dpi), no RGB

All this takes additional time and consequently incurs extra costs.

The usability must be checked by our printing shop:

In most cases screen formats (.jpg, .gif, .png) and paper copies, stickers and similar are not suitable for preparing printer's copies!

Copies that definitely cannot be used:

Imperfect copies such as fax copies / Microsoft Office files (.doc, .xls, .ppt) can only be used for information or for transmitting texts.

Please always add dimensional drawings (.dxf) to the parts to be imprinted!

Please note as a general rule: Retouching work extending beyond the standard time will be invoiced additionally at cost price.

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Technical introduction for the connector catalogue

General points

Product specified characteristics for the particular article can be found in the category "technical data"! Additional customer specified advice and solution proposals will be supported from the R&D department of company Fischer Elektronik GmbH & Co. KG.

Surface – electroplating processes

In general all contacts are coated with a nickel barrier layer (1.3-3 µm) before they get tinned or gold-plated. This will also apply for selective gold-plated contacts.

For the selective coated contacts the complete contact will be nickel-plated including the carrier strip first. After this the contact side will be gold-plated and the solder side tinned, usually in the "dipping method" or "brush method". Depending on the overall contact length the middle area is exclusively nickel-plated.

The layer thickness of the gold-plating is at least 0.2 µm Au, the layer thickness of the tinning is 4-6 µm! Other layer thicknesses are possible upon request.

The tinning is done with pure tin. The solderability is guaranteed for at least 1 year after shipment. At appropriate storage in closed packing this period can be increased significantly.

Dimensional tolerance

Generally the DIN ISO 2768m is applied to all products! Moreover following additions have to be noticed:

- the length tolerance of contact pins is +/-0.2 mm
- the space allowance is +/-0.03 mm, the overall space allowance over 36 pins +/-0.2 mm
- the shape tolerance of the insulating body is defined by +/-0.15 mm
- the separation of number of pins by means of cutting: +0.6 mm/-0.3 mm
- the separation of number of pins by means of sawing: +0.1 mm/-0.4 mm (no standard)
- coplanarity of SMD solder connections max. 0.15 mm with a bar length of 50 mm according to DIN EN 61760-1

Quality grading in conformity with DIN 41652

Depending on the layer thickness of the gold-plating the contacts can be classified in quality classes.

A distinction is made in three quality classes:

Quality class 1: at least 500 cycles of operation, layer thickness accordingly at least 1.2 µm Au

Quality class 2: at least 200 cycles of operation, layer thickness accordingly at least 0.75 µm Au

Quality class 3: at least 50 cycles of operation, layer thickness accordingly at least 0.2 µm Au

In case that tinned contacts are used „tin on tin“ we can guarantee max. 10 cycles of operation.

Precision socket contacts

These contacts are two-piece parts and consist on a sleeve (turned part) and a spring element (stamped part). The spring element (clip) is always gold-plated (depending on the article at least 0.2 µm Au or at least 0.75 µm Au). The sleeve is usually tinned, for some versions also optionally gold-plated (at least 0.2 µm Au).

Contact carrier material made of high-temperature resistant plastic

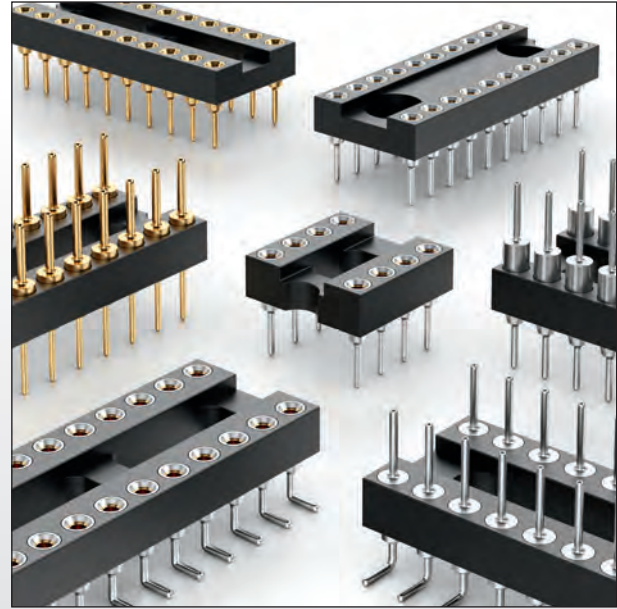
The plastics used for the male and female headers are mainly high-temperature resistant which means that they are suitable for the use in the reflow soldering technique.

This applies primarily for SMD components as well as for plug connectors which are constructed for wave soldering. In the catalogue those products are marked with a 260 °C logo in the header of the particular page.



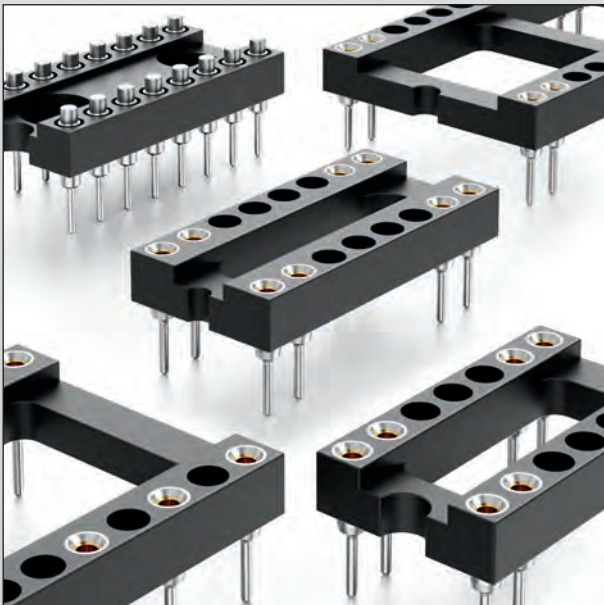
Precision sockets and plugs for ICs with high packing density

- PLCC-socket for soldering technology (THT)
- PLCC-socket for SMD technology • low profile
- type of packaging: bar magazine



Precision sockets and plugs for DIL-ICs

- precision sockets and plugs in soldering (THT) and SMD technology
- DIL-IC sockets with extractor
- open and closed design



Customer specified DIL-IC sockets

- sockets for LED displays
- Dual-in-line plug in adapter
- IC-sockets partially loaded with oscillators and relays

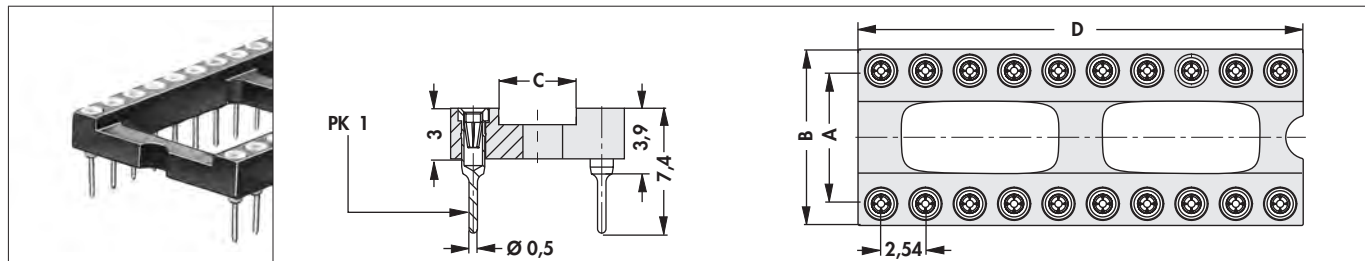


Mounting sockets for discrete components, jumper links and connectors

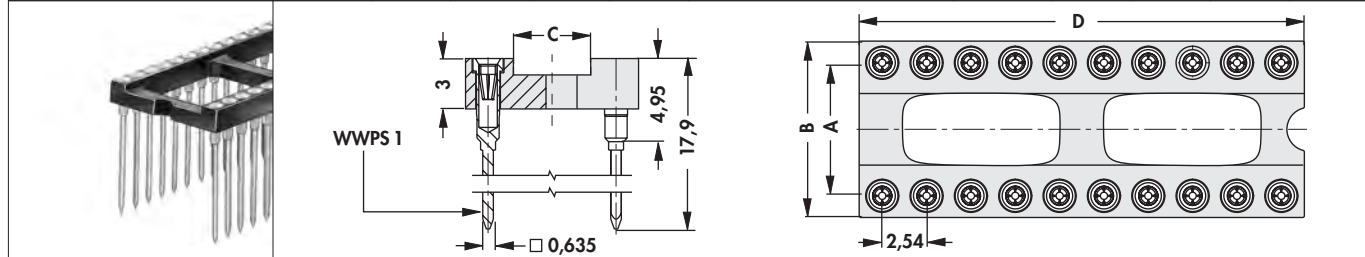
- sockets for TO 5 cases
- plug-in sockets for crystal oscillators
- jumper links with and without insulators
- precision pins and bushings, bulk
- connectors, with and without insulator

High-precision sockets and plugs for DIL-IC

– other number of contacts upon request!



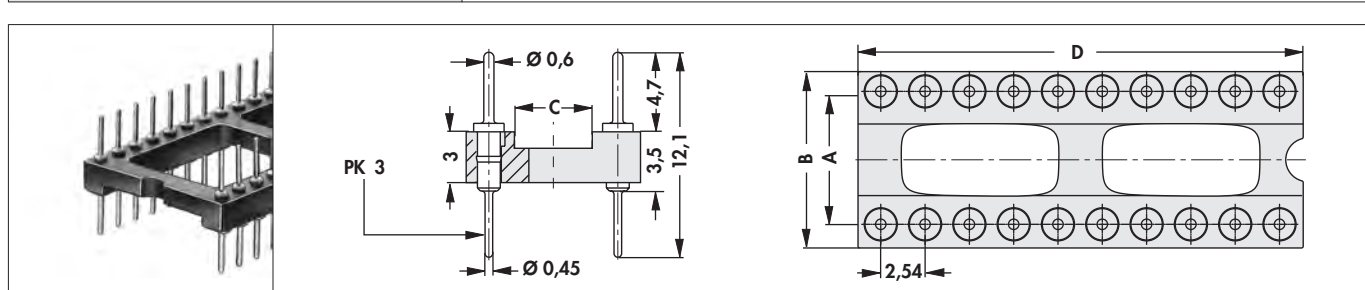
| art. no. | no. of contacts | dim. [mm] | | | | art. no. | no. of contacts | dim. [mm] | | | |
|---------------|-----------------|-----------|------|-----|------|-----------------|-----------------|-----------|------|------|------|
| | | A | B | C | D | | | A | B | C | D |
| DIL 6 M ... | 6 | 7.62 | 10.1 | 3.8 | 7.6 | DIL 22 M ... | 22 | 10.16 | 12.7 | 6.6 | 27.9 |
| DIL 8 M ... | 8 | | | | 10.1 | DIL 24 03 M ... | 24 | 7.62 | 10.1 | 4.0 | 30.6 |
| DIL 10 M ... | 10 | | | 4.7 | 12.7 | DIL 24 04 M G | | 10.16 | 12.7 | 7.1 | |
| DIL 14 M ... | 14 | | | 4.9 | 17.7 | DIL 24 M ... | | 15.24 | 17.7 | 11.6 | |
| DIL 16 M ... | 16 | | | 3.5 | 20.4 | DIL 28 03 M ... | 28 | 7.62 | 10.1 | 4.0 | 35.7 |
| DIL 18 M ... | 18 | | | 4.1 | 23.0 | DIL 28 M ... | | | | | |
| DIL 20 M ... | 20 | | | 3.4 | 25.5 | DIL 32 M ... | 32 | 15.24 | 17.7 | 11.2 | 40.6 |
| DIL 22 03 M Z | 22 | | | 4.8 | 27.9 | DIL 36 M G | 36 | | | 10.6 | 45.6 |



| art. no. | no. of contacts | dim. [mm] | | | | art. no. | no. of contacts | dim. [mm] | | | |
|--------------|-----------------|-----------|------|-----|------|--------------|-----------------|-----------|------|-----|------|
| | | A | B | C | D | | | A | B | C | D |
| DIL 14 N ... | 14 | 7.62 | 10.1 | 4.9 | 17.7 | DIL 16 N ... | 16 | 7.62 | 10.1 | 3.5 | 20.4 |

please indicate: ... surface of contact
G = gold-plated
Z = tin-plated

contact spring: gold-plated


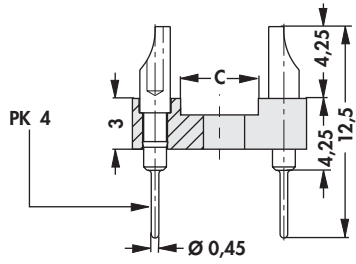
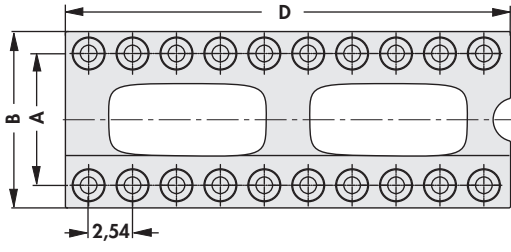

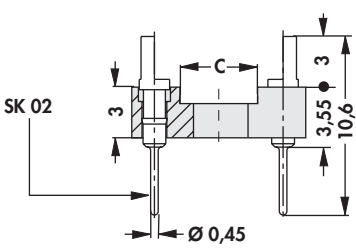
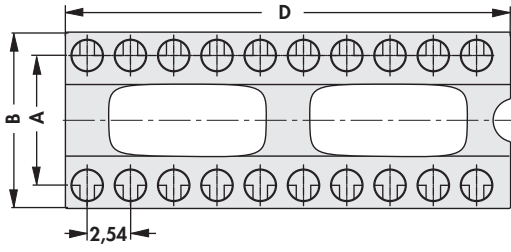

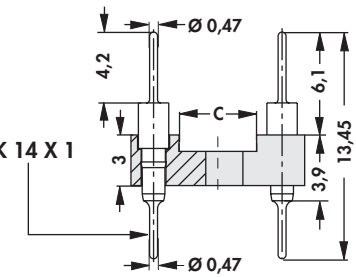
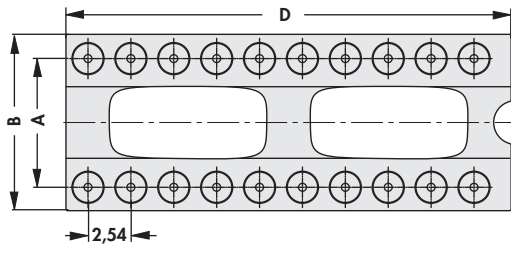


| art. no. | no. of contacts | dim. [mm] | | | | art. no. | no. of contacts | dim. [mm] | | | |
|--------------|-----------------|-----------|------|-----|------|--------------|-----------------|-----------|------|-----|------|
| | | A | B | C | D | | | A | B | C | D |
| DIL 8 O ... | 8 | 7.62 | 10.1 | 3.8 | 10.1 | DIL 20 O G | 20 | 7.62 | 10.1 | 3.4 | 25.5 |
| DIL 14 O ... | 14 | | | 4.9 | 17.7 | DIL 22 O ... | 22 | 10.16 | 12.7 | 6.6 | 27.9 |
| DIL 16 O ... | 16 | | | 3.5 | 20.4 | | | | | | |

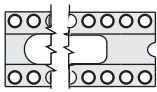
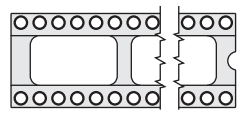
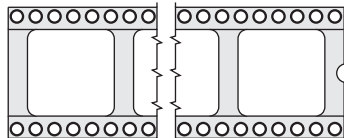
please indicate: ... surface of contact
G = gold-plated
Z = tin-plated

High-precision sockets and plugs for DIL-IC


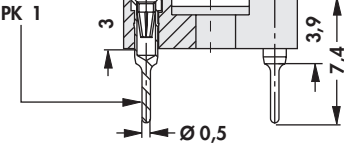
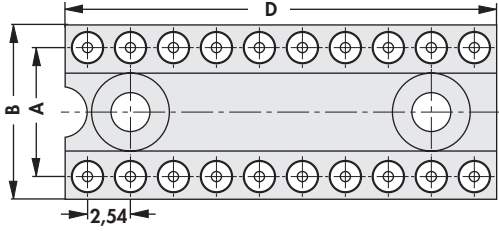
– other number of contacts on request!

| | | | | | | | | | | | |
|---|---|--|------|-----|------|---------------------|-----------------|-----------|------|-----|------|
|  |  |  | | | | | | | | | |
| art. no. | no. of contacts | dim. [mm] | | | | art. no. | no. of contacts | dim. [mm] | | | |
| DIL 6 P Z | 6 | 7.62 | 10.1 | 3.8 | 7.6 | DIL 16 P Z | 16 | 7.62 | 10.1 | 3.5 | 20.4 |
| DIL 14 P Z | 14 | | | 4.9 | 17.7 | | | | | | |
|  |  |  | | | | | | | | | |
| art. no. | no. of contacts | dim. [mm] | | | | art. no. | no. of contacts | dim. [mm] | | | |
| DIL 8 Q G | 8 | 7.62 | 10.1 | 3.8 | 10.1 | DIL 20 Q Z | 20 | 7.62 | 10.1 | 3.4 | 25.5 |
| DIL 16 Q Z | 16 | | | 3.5 | 20.4 | | | | | | |
|  |  |  | | | | | | | | | |
| art. no. | no. of contacts | dim. [mm] | | | | art. no. | no. of contacts | dim. [mm] | | | |
| DIL 10 U Z | 10 | 7.62 | 10.1 | 4.7 | 12.7 | DIL 22 U ... | 22 | 10.16 | 12.7 | 6.6 | 27.9 |
| DIL 14 U G | 14 | | | 4.9 | 17.7 | | | | | | |
| please indicate: ... surface of contact G = gold-plated Z = tin-plated | | | | | | | | | | | |

Socket layout for various numbers of contacts for DIL-IC, open frame

| | | |
|---|---|---|
| 6-16 pol. | 18-32 pol. | 36 pol. |
|  |  |  |

High-precision sockets and plugs for DIL-IC

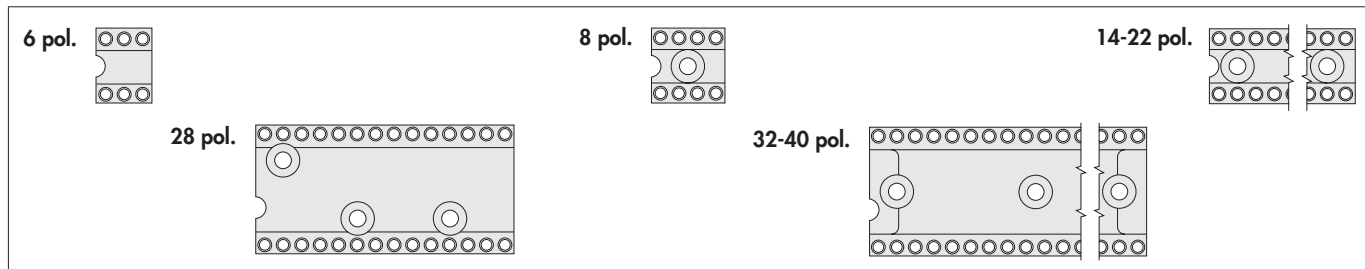




| art. no. | no. of contacts | dim. [mm] | | | art. no. | no. of contacts | dim. [mm] | | |
|---------------------|-----------------|-----------|------|---------------------|---------------------|-----------------|-----------|------|------|
| | | A | B | D | | | A | B | D |
| DIL 6 E ... | 6 | 7.62 | 10.3 | 7.6 | DIL 20 E ... | 20 | 7.62 | 10.3 | 25.5 |
| DIL 8 E ... | 8 | | | DIL 28 E ... | 28 | 35.5 | | | |
| DIL 14 E ... | 14 | | | DIL 32 E ... | 32 | 40.6 | | | |
| DIL 16 E ... | 16 | | | DIL 40 E ... | 40 | 50.8 | | | |
| DIL 18 E ... | 18 | | | | | | | | |
| | | | | | | | | | |


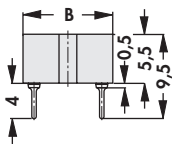
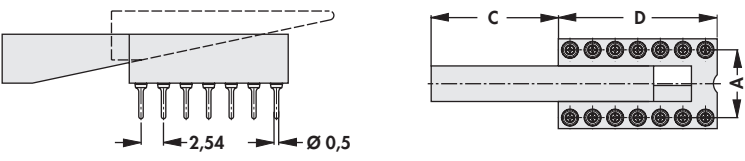
please indicate: ... surface of contact
G = gold-plated
Z = tin-plated

contact spring: gold-plated

Socket layout for various numbers of contacts for DIL-IC, closed frame



DIL-IC-sockets with extractor

| art. no. | no. of contacts | dim. [mm] | | | | art. no. | no. of contacts | dim. [mm] | | | |
|-------------------|-----------------|-----------|------|----|------|-------------------|-----------------|-----------|------|----|------|
| | | A | B | C | D | | | A | B | C | D |
| DIL 14 PEK | 14 | 7.62 | 10.1 | 12 | 17.0 | DIL 16 PEK | 16 | 7.62 | 10.1 | 12 | 20.3 |

contact spring: gold-plated

contact sleeve: gold-plated

High-precision sockets and plugs for DIL-IC

IC-sockets partially equipped, e.g. for oscillators and relays

| | | | |
|-------------------------|---|-----------------------|--|
| | | | |
| DIL 4 OR ... | DIL 8 1 OR ... | DIL 8 2 OR ... | |
| art. no. | no. of contacts | | |
| DIL 4 OR ... | 4 | | |
| DIL 8 1 OR Z | 8 | | |
| DIL 8 2 OR ... | | | |
| please indicate: | ... surface of contact G = gold-plated Z = tin-plated | | |
| contact spring: | gold-plated | | |

LED display sockets of 0.6" pitch

| | | | | | |
|------------------------|-----------------|-----------|----------------------|-----------------|-----------|
| | | | | | |
| art. no. | no. of contacts | dim. [mm] | art. no. | no. of contacts | dim. [mm] |
| DIL 16 06 E Z | 16 | A 20.3 | DIL 18 06 E Z | 18 | A 22.8 |
| | | | | | |
| art. no. | no. of contacts | dim. [mm] | art. no. | no. of contacts | dim. [mm] |
| DIL 16 06 H Z | 16 | A 20.3 | DIL 18 06 H Z | 18 | A 22.8 |
| contact spring: | gold-plated | | | | |
| contact sleeve: | tin-plated | | | | |

High-precision sockets and plugs for DIL-IC

LED display sockets in vertical construction

| art. no. | no. of contacts | dim. [mm] | |
|------------------------|-----------------|-------------|------|
| | | A | B |
| DIL 14 W 90 | 14 | 27.7 | 22.7 |
| contact spring: | | gold-plated | |
| contact sleeve: | | tin-plated | |

| art. no. | no. of contacts | dim. [mm] | art. no. | no. of contacts | dim. [mm] |
|-------------------------|-----------------|-------------------------------|---------------------|-----------------|-----------|
| | | A | | | A |
| DIL 8 G Z | 8 | 10.1 | DIL 16 G ... | 16 | 20.3 |
| DIL 10 G ... | 10 | 12.7 | DIL 20 G ... | 20 | 25.4 |
| DIL 14 G ... | 14 | 17.7 | | | |
| please indicate: | | ... surface of contact | | | |
| | | G = gold-plated | | | |
| | | Z = tin-plated | | | |
| contact spring: | | gold-plated | | | |

DIL adaptor plugs

| | PK 3 | SK 02 (≅ PK 5) | PK 3 | SK 02 (≅ PK 5) | | | |
|----------------------------|-----------------|-----------------------|-------------|-----------------------|-----------------|-----------|-------|
| | | | | | | | |
| art. no. | no. of contacts | dim. [mm] | | art. no. | no. of contacts | dim. [mm] | |
| | | A | B | | | A | B |
| DILS 04 PK 5 | 4 | 5.0 | 2.54 | DILS 16 PK 3 | 16 | 20.3 | 17.78 |
| DILS 06 PK 3 | 6 | 7.6 | 5.08 | DILS 16 PK 5 | | | |
| DILS 14 PK 3 | 14 | 17.7 | 15.24 | DILS 18 PK 5 | 18 | 23.0 | 20.32 |
| surface of contact: | | gold-plated | | | | | |

A

High-precision sockets and plugs for DIL-IC

B

C

D

| | | PK 3 | | | SK 02 (≅ PK 5) | | |
|----------------------------|-----------------|-------------|-------|-----------------------|-----------------------|-----------|-------|
| | | | | | | | |
| art. no. | no. of contacts | dim. [mm] | | art. no. | no. of contacts | dim. [mm] | |
| | | A | B | | | A | B |
| DILS 28 6 PK 3 | 28 | 35.5 | 33.02 | DILS 16 6 PK 3 | 16 | 20.3 | 17.78 |
| DILS 40 6 PK 3 | 40 | 50.8 | 48.26 | | | | |
| surface of contact: | | gold-plated | | | | | |

E

F

DIL platforms

 – suitable for **DIL-cases** DILS ... GA LO

| | | | | | PK 3 | | SK 02 (≅ PK 5) | | |
|----------------------------|-----------------|-------------|------|------|-------------------|-----------------|-----------------------|------|-------|
| | | | | | | | | | |
| art. no. | no. of contacts | dim. [mm] | | | art. no. | no. of contacts | dim. [mm] | | |
| | | A | B | C | | | A | B | C |
| DILS 08 GO | 8 | 12.4 | 12.5 | 7.62 | DILS 24 GO | 24 | 32.8 | 20.1 | 15.24 |
| DILS 14 GO | 14 | 20.0 | | | DILS 28 GO | 28 | 37.8 | | |
| DILS 16 GO | 16 | 22.6 | | | DILS 40 GO | 40 | 53.1 | | |
| DILS 18 GO | 18 | 25.2 | | | | | | | |
| surface of contact: | | gold-plated | | | | | | | |

G

H

DIL cases - grid spacing 2.54 mm

 – suitable for **DIL** plugs DILS ... GO

| | | | PK 3 | | SK 02 (≅ PK 5) | | |
|----------------------|-----------|-----|-------------|----------------------|-----------------------|------|------|
| | | | | | | | |
| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
| | B | H | L | | B | H | L |
| DILS 08 GA LO | 12.5 | 6.7 | 12.4 | DILS 14 GB LO | 12.5 | 11.7 | 20.0 |
| DILS 14 GA LO | | | 20.0 | DILS 16 GB LO | | | 22.6 |
| DILS 16 GA LO | | | 22.6 | DILS 18 GB LO | | | 25.2 |
| DILS 18 GA LO | | | 25.2 | DILS 24 GB LO | | | 32.8 |
| DILS 24 GA LO | 20.1 | 6.7 | 32.8 | DILS 28 GB LO | 20.1 | 11.7 | 37.8 |
| DILS 40 GA LO | | | 53.1 | DILS 40 GB LO | | | 53.1 |
| DILS 08 GB LO | | | 12.5 | 11.7 | | | 12.4 |

I

K

L

M

N

High-precision sockets and plugs for DIL-IC

SMD-plug for DIL

- with SK 5-contacts
- other number of contacts on request!

| art. no. | no. of contacts | dim. [mm] | | | | art. no. | no. of contacts | dim. [mm] | | | |
|----------------------------|-----------------|------------|------|-----|------|------------------|-----------------|-----------|------|-----|------|
| DIL 08 SMD SK5 Z | 8 | 7.62 | 10.1 | 3.5 | 10.0 | DIL 20 SMD SK5 Z | 20 | 7.62 | 10.1 | 3.5 | 25.2 |
| DIL 16 SMD SK5 Z | 16 | | | | 20.1 | | | | | | |
| surface of contact: | | fin-plated | | | | | | | | | |

SMD socket for DIL-IC

- other number of contacts upon request!

| art. no. | no. of contacts | dim. [mm] | | | | art. no. | no. of contacts | dim. [mm] | | | |
|------------------------|-----------------|-------------|------|------|-----|-----------------|-----------------|-----------|------|------|-------|
| DIL 16 SMD M | 16 | 20.1 | 10.1 | 7.62 | 3.5 | DIL 24 03 SMD M | 24 | 30.3 | 10.1 | 7.62 | 3.5 |
| DIL 20 SMD M | 20 | | | | | 25.2 | DIL 28 SMD M | 28 | 35.4 | 17.6 | 15.24 |
| contact spring: | | gold-plated | | | | | | | | | |
| contact sleeve: | | fin-plated | | | | | | | | | |

IC-mounting tools - Design DIL

| art. no. | spacing of contact rows [mm] | |
|------------------|------------------------------|--|
| MIC 03 | 7.62 | |
| MIC 06 | 15.24 | |
| material: | polyacetole, non-conductive | |

Sockets for IC-PLCC

- PLCC sockets for case design EIA/JEDEC TYPE "A"
- **VPE** = packing unit (pieces/tube)
- data sheet for pin configuration of individual PLCC sockets available upon request
- dual polarity indicators guarantee the correct alignment of the chip
- drainage holes for easier inside cleaning
- test holes are moulded next to each contact

| art. no. | no. of contacts | packing unit | dim. [mm] | | | | | | |
|----------------------------|-----------------|--------------|-----------|-------|-------|-------|------|-------|-------|
| PLCC 20 | 20 | 39 | A 1 | A 2 | B 1 | B 2 | C | Ø D1 | Ø D2 |
| PLCC 28 | 28 | 33 | 7.62 | 7.62 | 18.10 | 18.10 | 20.3 | 12.70 | 12.70 |
| PLCC 32 | 32 | 29 | | 10.16 | | 20.70 | 22.2 | | 15.24 |
| PLCC 44 | 44 | 25 | 12.70 | 12.70 | 23.20 | 23.20 | 27.5 | 17.78 | 17.78 |
| PLCC 52 | 52 | 23 | 15.24 | 15.24 | 25.70 | 25.70 | 31.0 | 20.32 | 20.32 |
| PLCC 68 | 68 | 19 | 20.32 | 20.32 | 30.80 | 30.80 | 37.3 | 25.40 | 25.40 |
| PLCC 84 | 84 | 16 | 25.40 | 25.40 | 36.00 | 36.00 | 44.5 | 30.48 | 30.48 |
| surface of contact: | | tin-plated | | | | | | | |

SMD sockets for PLCC - low profile housing

- these PLCC sockets conform to case designs EIA/JEDEC TYPE "A"
- **VPE** = packing unit (pieces/tube)*dimensions ± 0.2 mm; tin-plated phosphorbronze socket contacts
- dual polarity indicators guarantee the correct alignment of the chip
- drainage holes for easier inside cleaning
- test holes are moulded next to each contact
- efficient heat dissipation
- **packing:** bar magazine

| art. no. | no. of contacts | packing unit | dim. [mm] | | | | |
|----------------------------|-----------------|--------------|-----------|-------|-------|-------|------|
| PLCC 20 SMD | 20 | 32 | A | B | C | D | Q |
| PLCC 28 SMD | 28 | 27 | 18.16 | 18.16 | 7.62 | 7.62 | 20.6 |
| PLCC 32 SMD | 32 | 24 | | 20.66 | | 10.16 | 22.5 |
| PLCC 44 SMD | 44 | 22 | 23.27 | 23.27 | 12.70 | 12.70 | 27.5 |
| PLCC 68 SMD | 68 | 16 | 30.89 | 30.89 | 20.32 | 20.32 | 38.8 |
| PLCC 84 SMD | 84 | 14 | 35.97 | 35.97 | 25.40 | 25.40 | 44.8 |
| surface of contact: | | tin-plated | | | | | |

Sockets for TO ... cases

Transistor sockets for TO 5

| | | | |
|-------------------------|--|--|--|
| | | | |
| <p>art. no.</p> | <p>no. of contacts</p> | | |
| <p>PF 53 ...</p> | <p>3</p> | | |
| | | | |
| <p>art. no.</p> | <p>no. of contacts</p> | | |
| <p>PF 54 ...</p> | <p>4</p> | | |
| | | | |
| <p>art. no.</p> | <p>no. of contacts</p> | | |
| <p>PF 58 23 ...</p> | <p>8</p> | | |
| <p>please indicate:</p> | <p>... surface of contact G = gold-plated Z = tin-plated</p> | | |
| <p>contact spring:</p> | <p>gold-plated</p> | | |
| | | | |
| <p>art. no.</p> | <p>no. of contacts</p> | | |
| <p>PF 58 2 G</p> | <p>8</p> | | |
| <p>contact spring:</p> | <p>gold-plated</p> | | |
| <p>contact sleeve:</p> | <p>gold-plated</p> | | |

A


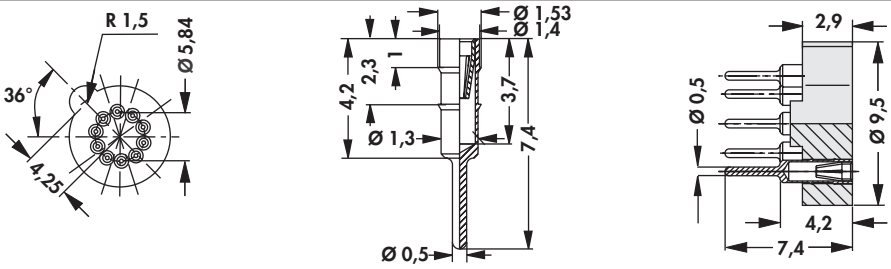
Sockets for TO ... cases

B

C

D


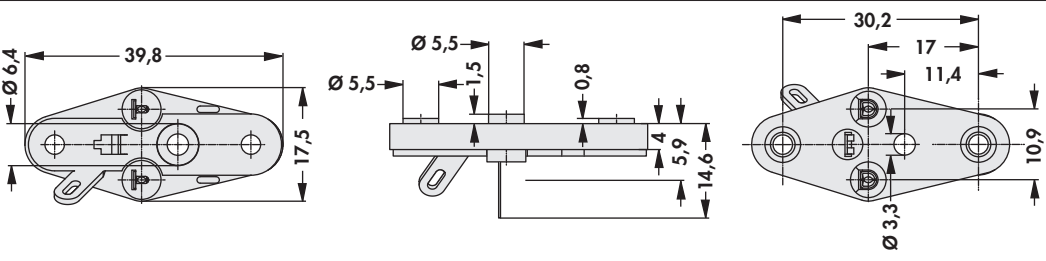
Sockets for TO 5

| | |
|---|--|
|  |  |
| art. no. | no. of contacts |
| PF 510 G | 10 |
| contact spring: | gold-plated |
| contact sleeve: | gold-plated |

E

F

Sockets for power transistors TO 3

| | |
|---|--|
|  |  |
| art. no. | no. of contacts |
| TF 3 2 | 3 |
| surface of contact: | gold-plated |

G

H

I

K


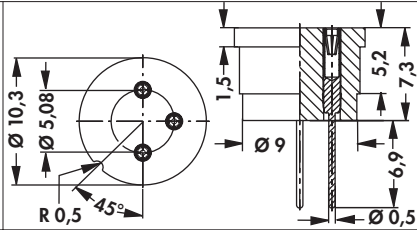

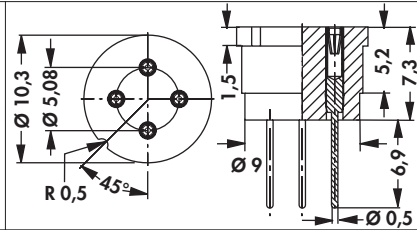

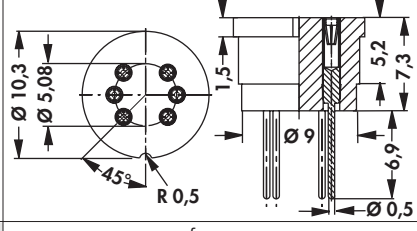

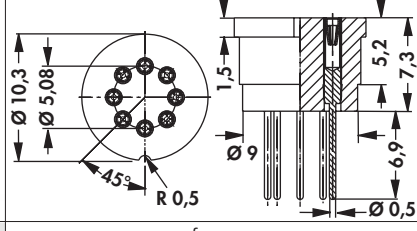

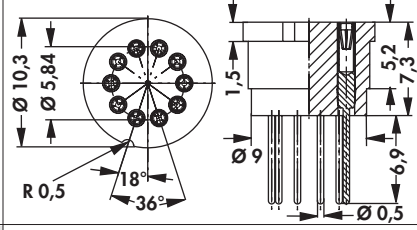
L

M


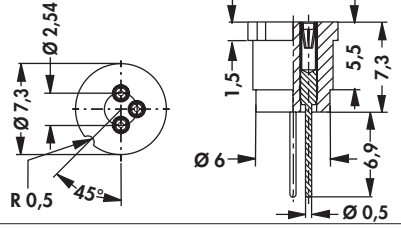

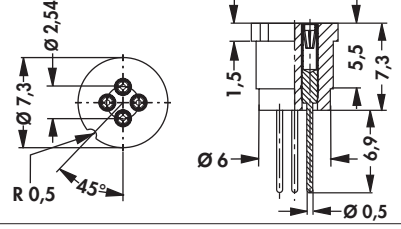
N

Sockets for TO ... cases

Transistor sockets - teflon sockets for TO 5

| | | | |
|--|--|---|---|
|  |  |  |  |
| art. no. | no. of contacts | art. no. | no. of contacts |
| TF 53 | 3 | TF 54 | 4 |
|  |  |  |  |
| art. no. | no. of contacts | art. no. | no. of contacts |
| TF 56 | 6 | TF 58 | 8 |
|  |  | | |
| art. no. | no. of contacts | | |
| TF 510 | 10 | | |

Transistor sockets - teflon sockets for TO 18


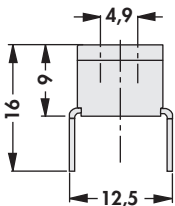
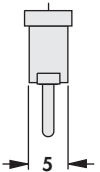
| | | | |
|---|---|---|---|
|  |  |  |  |
| art. no. | no. of contacts | art. no. | no. of contacts |
| TF 183 | 3 | TF 184 | 4 |
| contact spring: | gold-plated | | |
| contact sleeve: | gold-plated | | |

A

Sockets for crystal oscillators

B

C


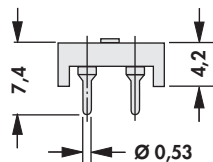
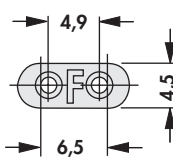
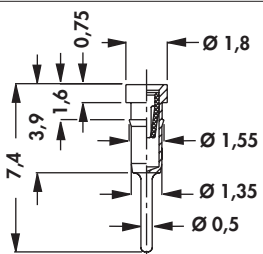

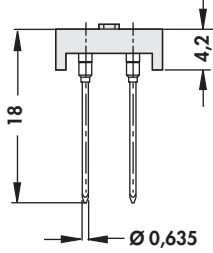
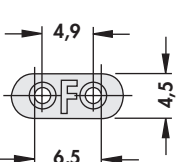
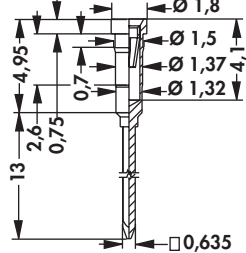
| | | | |
|----------------------------|---|---|---|
| art. no. |  |  |  |
| QS 25 GS | | | |
| surface of contact: | silver-plated | | |

Precision sockets for crystal oscillators in case HC 18

D

E

F

| | | | | |
|-------------------------|--|--|---|--|
| art. no. |  |  |  |  |
| PQ 18 ... | | | | |
| art. no. |  |  |  |  |
| PQ 18 W ... | | | | |
| please indicate: | ... surface of contact G = gold-plated Z = tin-plated | | | |
| contact spring: | gold-plated | | | |

G

H

Insulators for crystal oscillators



* = equates self retaining

I

K

L

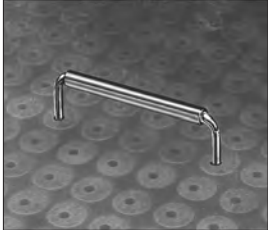
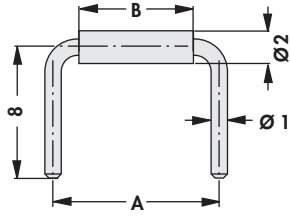

M

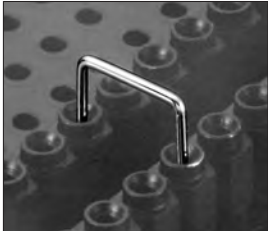
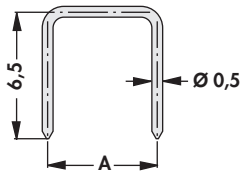

| | | |
|---|--|-----------|
|  |  | * |
| art. no. | case design | dim. [mm] |
| ISQ 04 | HC-18/U/ HC-49/U/ HC-43/U | C |
| ISQ 05 | | - |
| ISQ 06 | | 2.4 |
| ISQ 07 | | - |
| ISQ 08 | | - |
| ISQ 08 | HC-50/U/ HC-42/U/ HC-25/U | D |
| dielectric strength: | 9 kV | |
| name of foil: | MYLAR | |
| heat resistance: | 250°C | |
| material thickness: | 0.127 mm | |

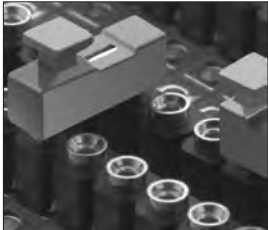
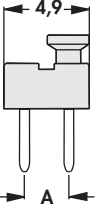
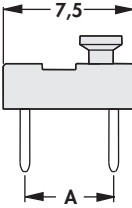
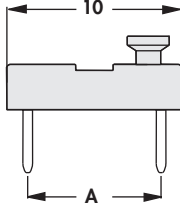
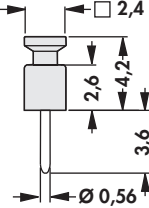
N

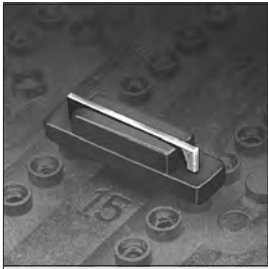
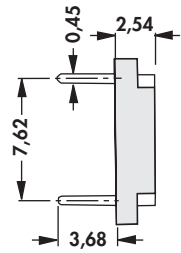
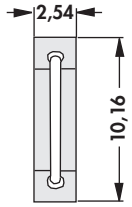
Jumper links / Separable jumpers

Jumper links

| | | | | | |
|---|---|-------------|---|-----------|------|
|  |  | |  | | |
| art. no. | dim. [mm] | | art. no. | dim. [mm] | |
| | A | B | | A | B |
| LB 02 G | 5.08 | 2.0 | LB 04 G | 10.16 | 7.0 |
| LB 03 G | 7.62 | 4.5 | LB 06 G | 15.24 | 12.0 |
| surface of contact: | | gold-plated | | | |

| | | | | | |
|---|---|---|---|-----------|--|
|  |  | |  | | |
| art. no. | dim. [mm] | | art. no. | dim. [mm] | |
| | A | | | A | |
| CB 1 ... | 2.54 | | CB 6 G | 7.62 | |
| CB 3 ... | 5.08 | | | | |
| please indicate: | | ... surface of contact G = gold-plated Z = tin-plated | | | |

| | | | | | | | | |
|---|---|-------------|---|-----------|--|--|---|--|
|  |  | |  | |  | |  | |
| art. no. | dim. [mm] | | art. no. | dim. [mm] | | | | |
| | A | | | A | | | | |
| LEB 01 G | 2.54 | | LEB 03 G | 7.62 | | | | |
| LEB 02 G | 5.08 | | | | | | | |
| surface of contact: | | gold-plated | | | | | | |

| | | | | |
|---|---|-------------|---|--|
|  |  | |  | |
| art. no. | | | | |
| PSB 03 G | | | | |
| surface of contact: | | gold-plated | | |

A
B
C
D
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I
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L
M
N

Jumper links / Separable jumpers

Separable jumpers for soldering technology

– the contacts have a preformed dividing groove and can easily be separated with a screwdriver

| art. no. | no. of contacts | dim. [mm] | | art. no. | no. of contacts | dim. [mm] | |
|----------------------------|-----------------|------------|-------|----------------------|-----------------|-----------|-------|
| | | A | B | | | A | B |
| CAB 3 06 03 Z | 6 | 7.30 | 5.08 | CAB 3 14 03 Z | 14 | 17.46 | 15.24 |
| CAB 3 08 03 Z | 8 | 9.84 | 7.62 | CAB 3 16 03 Z | 16 | 20.00 | 17.78 |
| CAB 3 12 03 Z | 12 | 14.92 | 12.70 | | | | |
| surface of contact: | | tin-plated | | | | | |

Jumper links, grid spacing 2.54 mm, □ 0.635 mm

– **separable!** any requested number of contact can be delivered

| art. no. | dim. [mm] | | art. no. | dim. [mm] | |
|-------------------------|-----------|----------------------------|-----------------------|-----------------------------------|-----|
| | A | C | | A | C |
| LB SL 0508 ... | 5.08 | 6.1 | LB SL 1016 ... | 10.16 | 6.1 |
| LB SL 0762 ... | 7.62 | | LB SL 1524 ... | 15.24 | |
| please indicate: | | ... no. of contacts | | ... surface of contact | |
| | | 1 - 36 | | G = gold-plated Z = tin-plated | |

Jumper links, grid spacing 2.00 mm, □ 0.5 mm

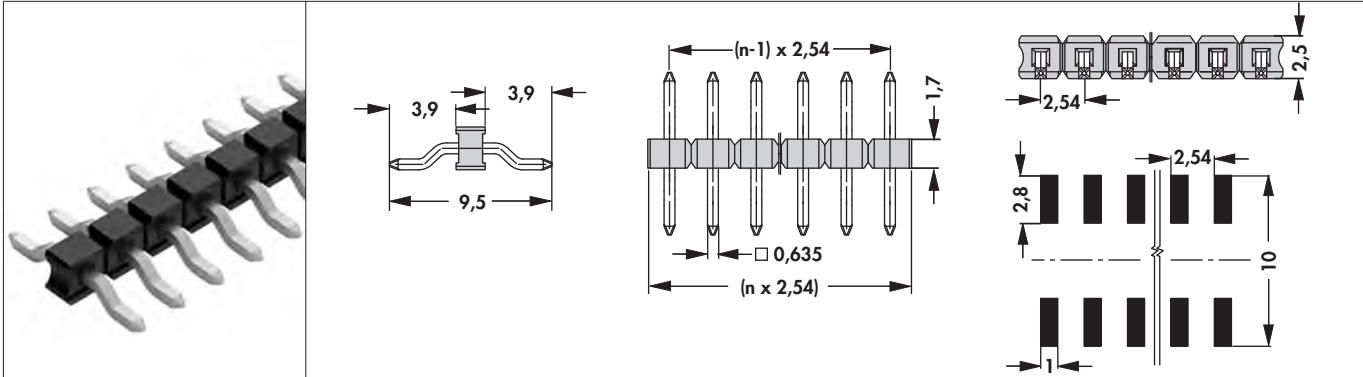
– **separable!** any requested number of contact can be delivered

| art. no. | dim. [mm] | | |
|-------------------------|-----------|-----------------------------------|--|
| | A | C | |
| LB SLY 06 ... | 6 | 4.5 | |
| please indicate: | | ... no. of contacts | |
| | | 1 - 50 | |
| please indicate: | | ... surface of contact | |
| | | G = gold-plated Z = tin-plated | |

Jumper links / Separable jumpers

Jumper link for LED- and standard-PCBs

- in SMD-technology
- □ 0,635 mm
- **separable!** any requested number of contact can be delivered



art. no.

LB SL LP 039 SMD ...

please indicate:

... no. of contacts
2 - 20

... surface of contact
G = gold-plated
Z = tin-plated

High-precision contacts, loose

Female contacts for $\varnothing 0.5$ mm

| | | | | | |
|---|--------------------|------------------|-------------------|------------------|--------------------|
| art. no. | | art. no. | | art. no. | |
| 1706 G | $\varnothing 0,5$ | PEK G | $\varnothing 0,5$ | PK 1 ... | $\varnothing 0,5$ |
| art. no. | | art. no. | | art. no. | |
| 1831 Z | $\varnothing 0,5$ | WWPS 1 G | $\square 0,635$ | SK 06 ... | $\varnothing 0,5$ |
| art. no. | | art. no. | | art. no. | |
| SK 13 X 2 G | $\square 0,635$ | TF G | $\varnothing 0,5$ | SK 19 ... | $\varnothing 0,76$ |
| art. no. | | art. no. | | art. no. | |
| SIL 1 ... | $\varnothing 1,35$ | SK 17 ... | $\varnothing 0,5$ | SK 18 ... | $\varnothing 0,76$ |
| <p>please indicate: ... surface of contact G = gold-plated Z = tin-plated</p> | | | | | |
| contact spring: | | gold-plated | | | |

Female contact for 0.64 mm \square and $\varnothing 0.80$ mm

| | | | | | |
|-----------------|-------------------|----------------|-----------------|----------------|-------------------|
| art. no. | | art. no. | | art. no. | |
| SKB 5 Z | $\varnothing 0,6$ | SKB 9 Z | $\square 0,635$ | SK 21 Z | $\varnothing 0,6$ |
| contact spring: | | gold-plated | | | |
| contact sleeve: | | tin-plated | | | |

High-precision contacts, loose

Female contact for 0.64 mm □ and Ø 0.80 mm

| | | | |
|------------------------|-------------|--|--|
| art. no. | | | |
| BL 18 G X 1 | | | |
| contact spring: | gold-plated | | |
| contact sleeve: | gold-plated | | |

Contacts with solder head

| | | | | | |
|---|--|------------------|--|------------------|--|
| art. no. | | art. no. | | art. no. | |
| PK 4 Z | | SK 02 ... | | SK 03 ... | |
| art. no. | | art. no. | | | |
| SK 04 Z | | SK 08 G | | | |
| please indicate: ... surface of contact G = gold-plated Z = tin-plated | | | | | |


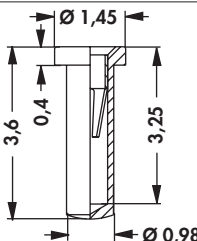
Pin contacts

| | | | | | |
|---|--|------------------|--|----------------------|--|
| art. no. | | art. no. | | art. no. | |
| SK 05 ... | | SK 11 ... | | SK 14 X 2 ... | |
| art. no. | | art. no. | | art. no. | |
| SK 40 G | | SK 41 ... | | SK 42 ... | |
| please indicate: ... surface of contact G = gold-plated Z = tin-plated | | | | | |


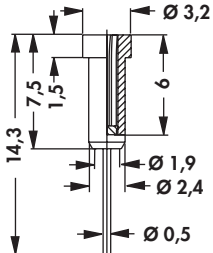


Connector-sleeves


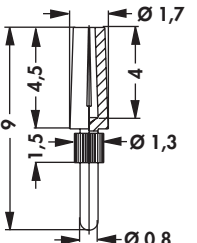
For 0.4 mm with BeCu spring 3 μm Ni, at least 0.1 μm Au

| | | |
|----------|---|--|
| art. no. |  |  |
| SB 1 | | |


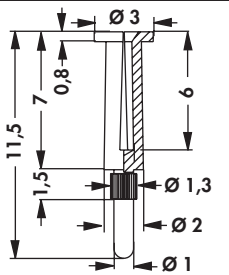

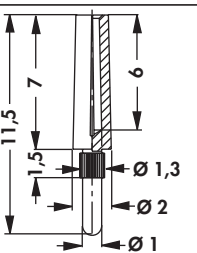

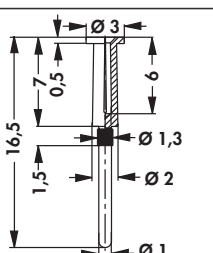
For 0.4 mm with bronze spring, teflon insulated

| | | |
|----------|---|--|
| art. no. |  |  |
| SB 2 | | |

For 0.8 mm, slotted

| | | |
|----------|--|---|
| art. no. |  |  |
| SB 3 | | |

For 1 mm, slotted

| | | |
|---------------------|---|--|
| art. no. |  |  |
| SB 4 | | |
| art. no. |  |  |
| SB 5 | | |
| art. no. |  |  |
| SB 6 | | |
| surface of contact: | | gold-plated |



Connector-sleeves

For 1 mm, slotted, plastic insulated

| | | |
|----------|--|--|
| art. no. | | |
| SB 9 | | |

For 1 mm, with BeCu spring 3 μm Ni, 1 μm Au

| | | |
|----------|--|--|
| art. no. | | |
| SB 12 | | |

For 1 mm, slotted, plastic insulated

| | | |
|----------|--|--|
| art. no. | | |
| SB 16 | | |

For 2 mm, slotted, plastic insulated

| | | |
|-----------|--|--|
| art. no. | | |
| SB 13 ... | | |

please indicate: ... case colour
 S = black
 R = red
 B = blue

For 2 mm, slotted, plastic insulated, separable

| | | |
|---------------------|-------------|--|
| art. no. | | |
| SB 15 | | |
| surface of contact: | gold-plated | |

A

Technical data: Sockets

B

C

D

E

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G

H

I

K

L

M

N

| | DIL ... E ..., DIL ... M ..., DIL ... N ..., DIL ... OR ... | DIL ... O ..., DIL ... P ..., DIL ... Q ..., DIL ... U ... | DIL ... PEK | DIL ... 06 E Z, DIL ... 06 H Z |
|---|--|---|---|---|
| contact material | CuZn-alloy | | | |
| surface contact / contact sleeve | Ni+ $\geq 0.2\mu\text{m Au}$ / Ni+4...6 $\mu\text{m Sn}$ | | Ni+ $\geq 0.2\mu\text{m Au}$ | Ni+4...6 $\mu\text{m Sn}$ |
| inner contact spring material | CuBe-alloy | | CuBe-alloy | |
| inner contact spring surface | Ni+0,25 $\mu\text{m Au}$ | | Ni+0,75 $\mu\text{m Au}$ | Ni+0,25 $\mu\text{m Au}$ |
| plugability for circuit points | 0,22x0,25mm... 0,4x0,55mm/ Ø0,4...0,56mm | | Ø0,4...0,56mm/ 0,22x0,25mm... 0,4x0,55mm | |
| insert depth | 2.5...3.6mm | | 2.5...3.6mm | |
| insertion / drawing force | 4 lamellas contact/ 1.8 N/1.4 N | | 4 lamellas contact/ 1.8 N/1.4 N | |
| shock resistance | 50 g | | | |
| vibration resistance max. | 15 g | | | |
| volume resistance | 10 m Ω | | | |
| contact resistance | 4 m Ω | | | |
| contact resistance after 1000 cycles | 7 m Ω | | | |
| capacity between two adjacent con- tacts | 0,4 pF | | | |
| nominal current | 1.5 A | | | |
| nominal voltage | 150 V DC | | | |
| test voltage | 1000 V | | | |
| insulating body material | PPS, GF | | | |
| temperature range | -40°C... +200°C/ (260°C/10 s) | | | |
| class of inflammability | UL 94 V-0 | | | |
| specific insulation resistance | $> 10^{12} \Omega \cdot \text{m}$ | | | |

Technical data: Sockets

| | DIL ... G ..., DIL 14 W 90 | DILS ... PK ... | DILS ... GO | DILS ... LO |
|---|--|------------------------|--------------------|----------------------------------|
| contact material | CuZn-alloy | | CuSn alloy | |
| surface contact / contact sleeve | Ni+4...6µm Sn | Ni+≥0.2µm Au | | |
| inner contact spring material | CuBe-alloy | | | |
| inner contact spring surface | Ni+0,75µm Au | | | |
| plugability for circuit points | 0,22x0,25mm... 0,4x0,55mm/ Ø0,4...0,56mm | | | |
| insert depth | 2.5...3.6mm | | | |
| insertion / drawing force | 4 lamellas contact/ 1.8 N/1.4 N | | | |
| shock resistance | 50 g | | | |
| vibration resistance max. | 15 g | | | |
| volume resistance | 10 mΩ | | | |
| contact resistance | 4 mΩ | | | |
| contact resistance after 1000 cycles | 7 mΩ | | | |
| capacity between two adjacent con- tacts | 0,4 pF | | | |
| nominal current | 1.5 A | | | |
| nominal voltage | 150 V DC | | | |
| test voltage | 1000 V | | | |
| insulating body material | PPS, GF | | | PA 4.6. GF |
| temperature range | -40°C... +200°C/ (260°C/10 s) | | | -40°C... +163°C/ (260°C/10 s) |
| class of inflammability | UL 94 V-0 | | | |
| specific insulation resistance | > 10 ¹² Ω·m | | | |

A

Technical data: Sockets

B

C

D

E

F

G

H

I

K

L

M

N

| | DIL ... SMD M, DIL...SMD SK5 | MIC ... | PLCC ..., PLCC ... SMD | PF ..., PQ 18 ... |
|---|--|---|--|--|
| contact material | CuZn-alloy | | CuSn alloy | CuZn-alloy |
| surface contact / contact sleeve | Ni+ $\geq 0.2\mu\text{m}$ Au/ Ni +4... $6\mu\text{m}$ Sn | | Ni+2... $4\mu\text{m}$ Sn | Ni+ $\geq 0.2\mu\text{m}$ Au/ Ni +4... $6\mu\text{m}$ Sn |
| inner contact spring material | CuBe-alloy | | | CuBe-alloy |
| inner contact spring surface | Ni+0,25 μm Au | | | Ni+0,75 μm Au |
| plugability for circuit points | 0,22x0,25mm... 0,4x0,55mm/ $\varnothing 0,4...0,56\text{mm}$ | | | 0,22x0,25mm... 0,4x0,55mm/ $\varnothing 0,4...0,56\text{mm}$ |
| insert depth | 2.5...3.6mm | | | 2.5...3.6mm |
| insertion / drawing force | 4 lamellas contact/ 1.8 N/1.4 N | | | 4 lamellas contact/ 1.8 N/1.4 N |
| shock resistance | 50 g | | | 50 g |
| vibration resistance max. | 15 g | | | 15 g |
| volume resistance | 10 m Ω | | >30 m Ω | 10 m Ω |
| contact resistance | | | | 4 m Ω |
| contact resistance after 1000 cycles | | | | 7 m Ω |
| capacity between two adjacent con- tacts | 0,4 pF | | | 0,4 pF |
| nominal current | 1.5 A | | 1 A | 1.5 A |
| nominal voltage | 150 V DC | | | 60 V DC |
| test voltage | 1000 V | | 500 V | |
| insulating body material | PPS, GF | polyacetal/ non-con- ductive | PPS, GF | PA 4.6. GF |
| temperature range | -40°C... +200°C/ (260°C/10 s) | | -40°C... +105°C/ (260°C/10 s) | -40°C... +163°C/ (260°C/10 s) |
| class of inflammability | UL 94 V-0 | UL 94 V-0 (at thickness $\geq 3\text{mm}$), UL 94 V-1 | UL 94 V-0 | |
| specific insulation resistance | >10 ¹² $\Omega\cdot\text{m}$ | | >10 ⁸ $\Omega\cdot\text{m}$ | >10 ⁷ $\Omega\cdot\text{m}$ |
| | TF 3 2 (TO 3) | QS 25 GS | LB ... G | CB ... |
| contact material | CuSn-alloy, CuSn 6; Ni 1-2 μm , Au 0.2 μm | CuSn alloy | CuZn-alloy | |
| surface contact / contact sleeve | | Ni+3 μm Ag | Ni+ $\geq 0.2\mu\text{m}$ Au | Ni+ $\geq 0.2\mu\text{m}$ Au/ Ni +4... $6\mu\text{m}$ Sn |
| volume resistance | | 10 m Ω | | |
| contact resistance | <10 m Ω | | | |
| contact resistance after 1000 cycles | | 7 m Ω | | |
| capacity between two adjacent con- tacts | 1 pF | | | |
| nominal current | | 2.5 A | | |
| nominal voltage | | 125 V DC | | |
| test voltage | 1650 V | 500 V | | |
| insulating body material | stanyl PA 4.6 | PA, GF | | |
| temperature range | -65°C ... +290°C | -40°C ... +180°C | | |
| class of inflammability | UL 94 V-1 | UL 94 V-0 | | |
| specific insulation resistance | >10 ⁷ $\Omega\cdot\text{m}$ | | | |
| current rating | 15 A max. | | | |

Technical data: Sockets

| | LEB ... G | PSB 03 G | CAB 3 ... 03 Z | LB SL ..., LB SL LP ... |
|---|----------------------------------|--------------------------------|----------------------------------|--|
| contact material | CuZn-alloy | phosphor bronze | brass | CuSn alloy |
| surface contact / contact sleeve | Ni+0.15µm Au | Ni+≥0.2µm Au | Ni+4...6µm Sn | Ni+4...6µm Sn/ Ni+≥0.2µm Au |
| volume resistance | | | | 5 mΩ |
| nominal current | 3 A | | 1.5 A | 3 A |
| nominal voltage | 150 V DC | 125 V AC | 100 V DC | 250 V DC |
| test voltage | 1000 V | | 1000 V | 2000 V |
| insulating body material | thermoplastic polyester | PA 6. GF | PPS, GF | PA 4.6. GF |
| temperature range | -55°C... +125°C | | -40°C... +200°C/ (260°C/10 s) | -40°C... +163°C/ (260°C/10 s) |
| class of inflammability | UL 94 V-0 | | UL 94 V-0 | |
| specific insulation resistance | | | >10 ¹² Ω·m | >10 ⁷ Ω·m |
| | LB SLY 06 ... | 1706 G, PEK G, WWPS 1 G | PK 1 ..., SK 19 ... | 1831 Z, SIL 1 ..., SK 06 ..., SK 13 X 2 G |
| contact material | CuSn alloy | CuZn-alloy | | |
| surface contact / contact sleeve | Ni+4...6µm Sn/ Ni+≥0.2µm Au | Ni+≥0.2µm Au | Ni+≥0.2µm Au/ Ni+4...6µm Sn | |
| inner contact spring material | CuBe-alloy | | | |
| inner contact spring surface | | Ni+0,75µm Au | Ni+0,25µm Au | Ni+0,75µm Au |
| insert depth | 2.5...3.6mm | | | |
| insertion / drawing force | 4 lamellas contact/ 1.8 N/1.4 N | | | |
| volume resistance | 5 mΩ | | | |
| nominal current | 3 A | 1.5 A | | |
| nominal voltage | 100 V DC | 60 V DC | | |
| test voltage | 500 V | 1000 V | | |
| insulating body material | PA 4.6. GF | | | |
| temperature range | -40°C... +163°C/ (260°C/10 s) | | | |
| class of inflammability | UL 94 V-0 | | | |
| specific insulation resistance | >10 ⁷ Ω·m | | | |

A

Technical data: Sockets

B

C

D

E

F

G

H

I

K

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M

N

| | TF ..., TF G | SK 17 ... | SK 18 ... | SKB 5 Z, SKB 9 Z |
|---|--|--|--|-------------------------------------|
| contact material | CuZn-alloy | | | |
| surface contact / contact sleeve | Ni+ $\geq 0.2\mu\text{m Au}$ | Ni+4... $6\mu\text{m Sn}$ | | |
| inner contact spring material | CuBe-alloy | | | |
| inner contact spring surface | Ni+0,75 $\mu\text{m Au}$ | | Ni+0,25 $\mu\text{m Au}$ | Ni+0,75 $\mu\text{m Au}$ |
| plugability for circuit points | $\varnothing 0,4...0,56\text{mm}/$ 0,22x0,25mm... 0,4x0,55mm | $\square 0,22\text{x}0,25\text{mm}...$ $\square 0,4\text{x}0,55\text{mm}/$ $\varnothing 0,4...0,56\text{mm}$ | $\varnothing 0,4...0,56\text{mm}/$ 0,22x0,25mm... 0,4x0,55mm | |
| insert depth | 2.5...3.6mm | | | 2.5...6mm |
| insertion / drawing force | 4 lamellas contact/ 1.8 N/1.4 N | 1.8 N/1.4 N | | 6 lamella contacts/ 1.3N/0.3N |
| shock resistance | 50 g | | | |
| vibration resistance max. | 15 g | | | |
| volume resistance | 10 m Ω | | | |
| contact resistance | 4 m Ω | | | |
| contact resistance after 1000 cycles | 7 m Ω | | | |
| nominal current | 1.5 A | | | 3 A |
| nominal voltage | 100 V DC | 60 V DC | | 150 V DC |
| test voltage | 1000 V | | | |
| insulating body material | PTFE | | | |
| temperature range | -200°C ... +260°C | | | |
| class of inflammability | UL 94 V-0 | | | |
| specific insulation resistance | $> 10^{14} \Omega\cdot\text{m}$ | | | |
| | SK 21 Z | BL 18 G X 1 | PK 4 Z, SK 02 ..., SK 03 ..., SK 04 Z, SK 05 ..., SK 08 G, SK 14 X 2 ..., SK 40 G, SK 41 ..., SK 42 ... | SB 1 |
| contact material | CuZn-alloy | | | |
| surface contact / contact sleeve | Ni+4... $6\mu\text{m Sn}$ | Ni+ $\geq 0.2\mu\text{m Au}$ | Ni+ $\geq 0.2\mu\text{m Au}/$ Ni +4... $6\mu\text{m Sn}$ | Ni+ $\geq 0,1\mu\text{m Au}$ |
| inner contact spring material | CuBe-alloy | | | |
| inner contact spring surface | Ni+0,75 $\mu\text{m Au}$ | | | Ni+ $\geq 0,1\mu\text{m Au}$ |
| plugability for circuit points | $\square 0,55...0,65\text{mm}/$ $\varnothing 0,65...0,85\text{mm}$ | | | $\varnothing 0,35...0,5 \text{ mm}$ |
| insert depth | 2.5...3.6mm | 2.5...6mm | | 1.5...3mm |
| insertion / drawing force | 1.3N/0.3N | | | |
| nominal current | 3 A | | 1.5 A | 2 A |
| nominal voltage | 150 V DC | | 60 V DC | |
| test voltage | 1500 V | | 1000 V | |

Technical data: Sockets

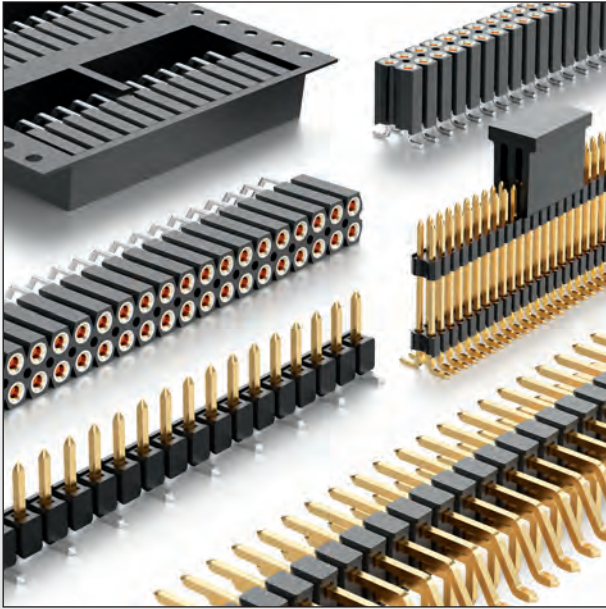
| | SB 2 | SB 3 | SB 4, SB 5, SB 6 | SB 9 |
|---|--|----------------------------|--------------------------|--------------|
| contact material | CuZn-alloy | | | |
| surface contact / contact sleeve | Ni+ $\geq 0.2\mu\text{m Au}$ | Ni+ $0.25\mu\text{m Au}$ | | |
| inner contact spring material | CuBe-alloy | | | |
| inner contact spring surface | Ni+ $0,75\mu\text{m Au}$ | | | |
| plugability for circuit points | $\varnothing 0,4...0,56\text{mm}/$ $0,22\times 0,25\text{mm}...$ $0,4\times 0,55\text{mm}$ | $\varnothing 0,8\text{mm}$ | $\varnothing 1\text{mm}$ | |
| insert depth | 2.8...3.8mm | 4mm | 6mm | |
| nominal current | 2 A | 3 A | | |
| nominal current 70°C | 1 A | 2 A | | |
| insulating body material | PTFE (teflon) | | | PA 6.6 |
| dielectric strength | $\leq 500\text{ V}$ | $\leq 500\text{ V}$ | | |
| | SB 12 | SB 16 | SB 13 | SB 15 |
| contact material | CuZn-alloy | | | |
| surface contact / contact sleeve | Ni+ $0.25\mu\text{m Au}$ | | | |
| inner contact spring material | CuBe-alloy | | | |
| inner contact spring surface | Ni+ $1\mu\text{m Au}$ | | | |
| plugability for circuit points | $\varnothing 1\text{mm}$ | | $\varnothing 2\text{mm}$ | |
| insert depth | 3.8...5.5mm | 2...6mm | 6mm | 12mm |
| volume resistance | $\leq 30\text{ m}\Omega$ | | | |
| nominal current | 4 A | 3 A | | |
| nominal current 70°C | 2 A | | | |
| insulating body material | PBT, GF | | polyolefin | PA 4.6. GF |
| class of inflammability | UL 94 V-0 | | UL 94 V-0 | |
| dielectric strength | $\leq 500\text{ V}$ | | | |

fischer

elektronik

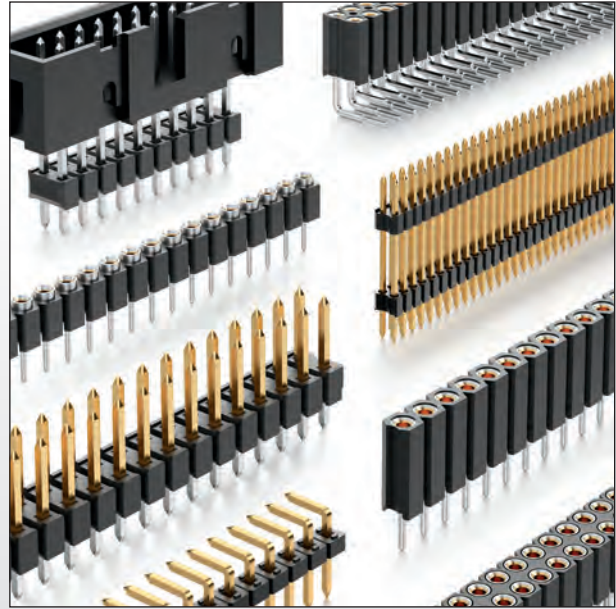
Male and female headers in SMD version
Male and female headers for solder technology (THT)

Male and female header in press-in mounting
Multipoint connector



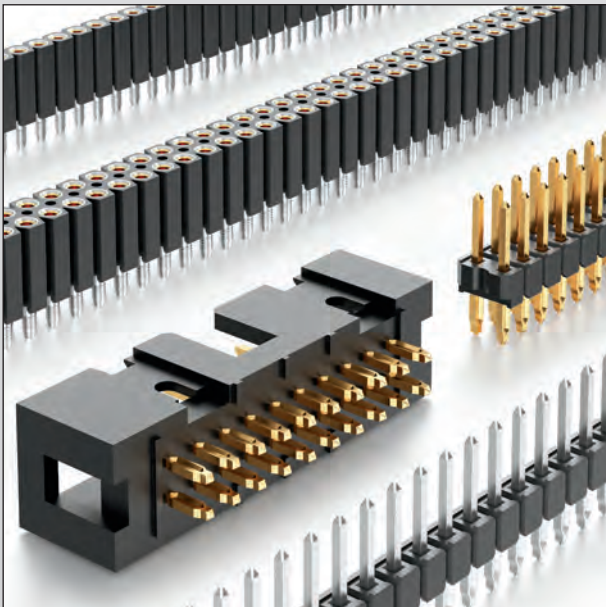
Male and female headers in SMD version

- male header, one and two rows with pick and place pad, horizontal and vertical version
- female header, one and two rows with pick and place pad, horizontal and vertical version
- grid spacing: 2,54 mm, 2,00 mm and 1,27 mm
- optional selectable type of packaging: bar magazine and tape and reel



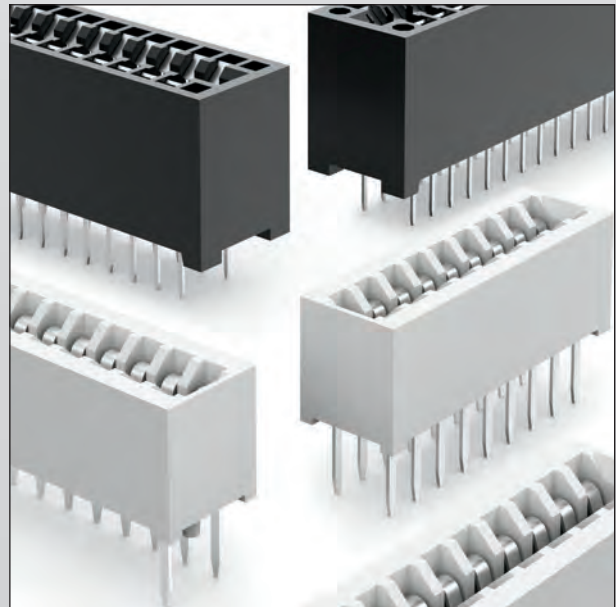
Male and female headers for solder technology (THT)

- male header, one and two rows, straight and angled version with square and precision contacts
- shrouded-header with second insulating body
- female header, one and two rows, straight and angled version with stamped contacts or precision contacts
- through-hole female headers, one and two rows
- grid spacing 2,54 mm, 2,0 mm and 1,27 mm



Male and female header in press-in mounting

- male header, one and two rows, straight version
- female header, one and two rows, straight version
- shrouded male header, two rows, straight version



Multipoint connector

- direct multipoint connector for additional circuit board with a thickness of 0,7 to 0,9 mm
- direct multipoint connector for a circuit board thickness of 1,6 mm

Male headers

Präzisionskontakte, solder and plug pins Ø 0.5 mm

- also available as single contact, **SK ...** → F 18


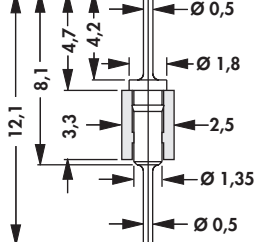

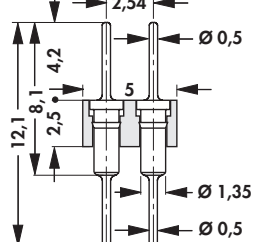

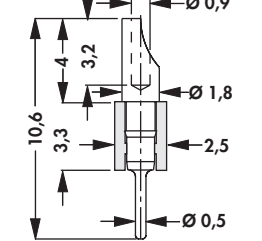

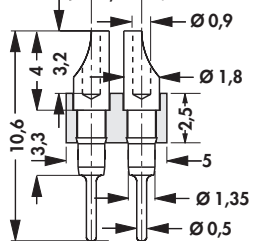

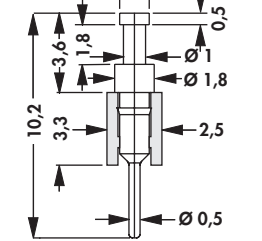

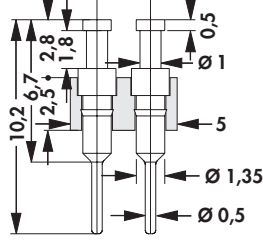

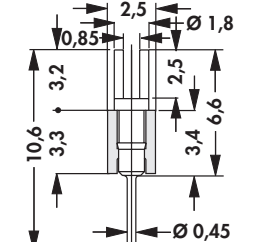

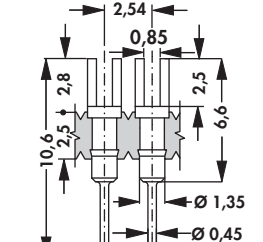
- **version:**

MK 05 / MK 205: contact pin on both sides

MK 04 / MK 204: solder-cup

MK 03 / MK 203: with solder head

MK 02 / MK 202: with solder fork

| | | | | | | | | | |
|---|---|---|---|---------------------|------------------------|----------------|------------------------|------------------|-----------------------|
| <p>art. no.</p>  <p>MK 05 ...</p> |  | <p>art. no.</p>  <p>MK 205 ...</p> |  | | | | | | |
| <p>art. no.</p>  <p>MK 04 ...</p> |  | <p>art. no.</p>  <p>MK 204 ...</p> |  | | | | | | |
| <p>art. no.</p>  <p>MK 03 ...</p> |  | <p>art. no.</p>  <p>MK 203 ...</p> |  | | | | | | |
| <p>art. no.</p>  <p>MK 02 ...</p> |  | <p>art. no.</p>  <p>MK 202 ...</p> |  | | | | | | |
| <p>please indicate:</p> <table border="0"> <tr> <td>... no. of contacts</td> <td>... surface of contact</td> </tr> <tr> <td>one row 1 - 50</td> <td>G = gold-plated</td> </tr> <tr> <td>two rows 2 - 100</td> <td>Z = tin-plated</td> </tr> </table> | | | | ... no. of contacts | ... surface of contact | one row 1 - 50 | G = gold-plated | two rows 2 - 100 | Z = tin-plated |
| ... no. of contacts | ... surface of contact | | | | | | | | |
| one row 1 - 50 | G = gold-plated | | | | | | | | |
| two rows 2 - 100 | Z = tin-plated | | | | | | | | |

A

Male headers
Precision contacts, Wire Wrap pin □ 0.635 mm

– version:

MK 10 / MK 210: with solder-cup

MK 08 / MK 208: with solder fork

| | | | | | | | | | | | | | | |
|--|---------------------|------------------------|--|--|--|--|---------------------|------------------------|--|----------------|-----------------|--|------------------|----------------|
| art. no. MK 10 ... | | | art. no. MK 210 ... | | | | | | | | | | | |
| art. no. MK 08 ... | | | art. no. MK 208 ... | | | | | | | | | | | |
| <p>please indicate:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;"></td> <td style="width: 35%;">... no. of contacts</td> <td style="width: 35%;">... surface of contact</td> </tr> <tr> <td></td> <td>one row 1 - 50</td> <td>G = gold-plated</td> </tr> <tr> <td></td> <td>two rows 2 - 100</td> <td>Z = tin-plated</td> </tr> </table> | | | | | | | ... no. of contacts | ... surface of contact | | one row 1 - 50 | G = gold-plated | | two rows 2 - 100 | Z = tin-plated |
| | ... no. of contacts | ... surface of contact | | | | | | | | | | | | |
| | one row 1 - 50 | G = gold-plated | | | | | | | | | | | | |
| | two rows 2 - 100 | Z = tin-plated | | | | | | | | | | | | |

F

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G 3

Technical data

→ G 101 - 107

Male headers

Precision contacts, solder and plug pins, Ø 0.5 mm

– rectangular PCB connection

| | | | | | | | | | | | |
|---|------------------------|--|--|--|--|---------------------|------------------------|----------------|-----------------|------------------|----------------|
| <p>art. no.</p> <p>MK 51 ...</p> | | | <p>art. no.</p> <p>MK 251 ...</p> | | | | | | | | |
| <p>art. no.</p> <p>MK 15 ...</p> | | | | | | | | | | | |
| <p>please indicate:</p> <table border="0"> <tr> <td>... no. of contacts</td> <td>... surface of contact</td> </tr> <tr> <td>one row 1 - 50</td> <td>G = gold-plated</td> </tr> <tr> <td>two rows 2 - 100</td> <td>Z = tin-plated</td> </tr> </table> | | | | | | ... no. of contacts | ... surface of contact | one row 1 - 50 | G = gold-plated | two rows 2 - 100 | Z = tin-plated |
| ... no. of contacts | ... surface of contact | | | | | | | | | | |
| one row 1 - 50 | G = gold-plated | | | | | | | | | | |
| two rows 2 - 100 | Z = tin-plated | | | | | | | | | | |


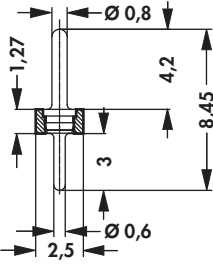

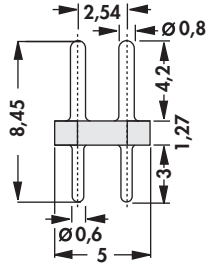

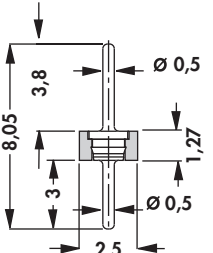

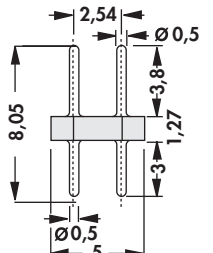

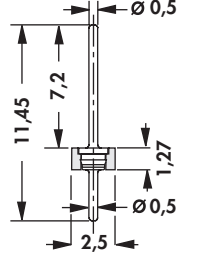

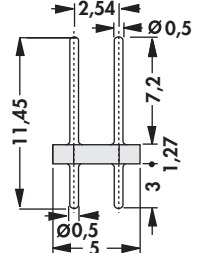

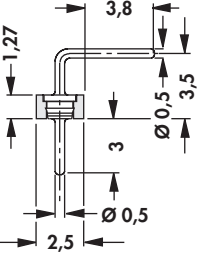
– parallel PCB connection

| | | | | | | | | | | | | |
|---|------------------------|-------------|--------------------------------|------------------|-------------|-------------|---------------------|------------------------|----------------|-----------------|------------------|----------------|
| | | | | | | | | | | | | |
| <p>art. no.</p> | <p>dim. [mm]</p> | | <p>art. no.</p> | <p>dim. [mm]</p> | | | | | | | | |
| <p>MK 14 X 1 ... G</p> | <p>A</p> | <p>X</p> | <p>MK 214 X 1 ... G</p> | <p>A</p> | <p>B</p> | <p>X</p> | | | | | | |
| <p>MK 14 X 2 ... G</p> | <p>13.4</p> | <p>2.7</p> | <p>MK 214 X 2 ... G</p> | <p>13.4</p> | <p>1.9</p> | <p>2.7</p> | | | | | | |
| <p>MK 14 X 3 ...</p> | <p>15.4</p> | <p>4.7</p> | <p>MK 214 X 3 ...</p> | <p>15.4</p> | <p>3.9</p> | <p>4.7</p> | | | | | | |
| <p>MK 14 X 3 ...</p> | <p>22.2</p> | <p>11.7</p> | <p>MK 214 X 3 ...</p> | <p>22.2</p> | <p>10.9</p> | <p>11.7</p> | | | | | | |
| <p>please indicate:</p> <table border="0"> <tr> <td>... no. of contacts</td> <td>... surface of contact</td> </tr> <tr> <td>one row 1 - 50</td> <td>G = gold-plated</td> </tr> <tr> <td>two rows 2 - 100</td> <td>Z = tin-plated</td> </tr> </table> | | | | | | | ... no. of contacts | ... surface of contact | one row 1 - 50 | G = gold-plated | two rows 2 - 100 | Z = tin-plated |
| ... no. of contacts | ... surface of contact | | | | | | | | | | | |
| one row 1 - 50 | G = gold-plated | | | | | | | | | | | |
| two rows 2 - 100 | Z = tin-plated | | | | | | | | | | | |

Male headers

Precision contacts, low profile


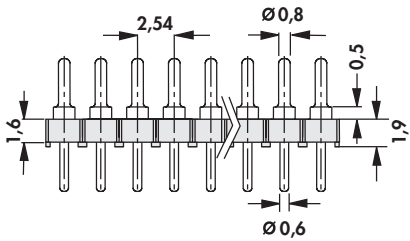
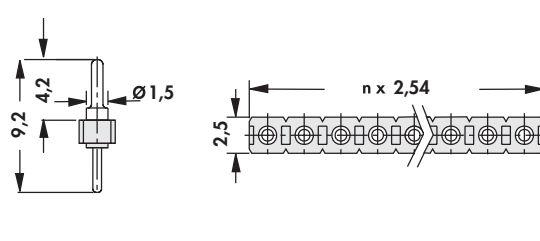

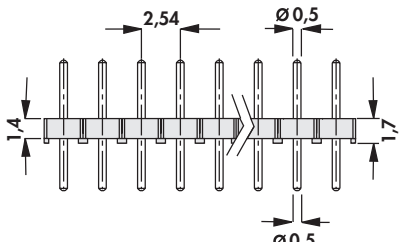
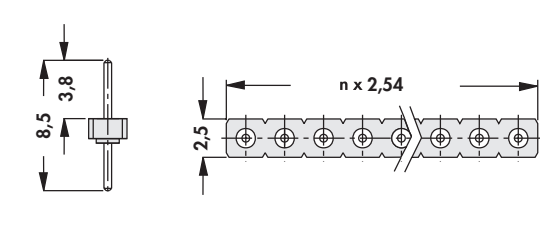

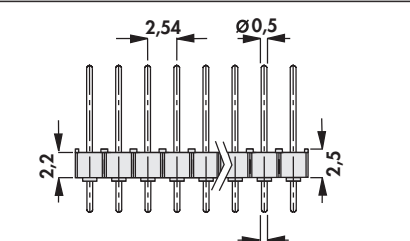
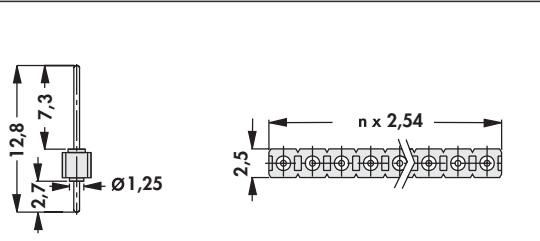
– also available as single contact, **SK ...** → F 18

| | | | | | | | | | | | |
|---|---|---|---|--|--|---------------------|------------------------|----------------|-----------------|------------------|----------------|
| art. no. MK LP 40 ... |  |  | art. no. MK LP 240 ... |  |  | | | | | | |
| art. no. MK LP 41 ... |  |  | art. no. MK LP 241 ... |  |  | | | | | | |
| art. no. MK LP 42 ... |  |  | art. no. MK LP 242 ... |  |  | | | | | | |
| art. no. MK LP 43 ... |  |  | | | | | | | | | |
| <p>please indicate:</p> <table border="0"> <tr> <td>... no. of contacts</td> <td>... surface of contact</td> </tr> <tr> <td>one row 1 - 50</td> <td>G = gold-plated</td> </tr> <tr> <td>two rows 4 - 100</td> <td>Z = tin-plated</td> </tr> </table> | | | | | | ... no. of contacts | ... surface of contact | one row 1 - 50 | G = gold-plated | two rows 4 - 100 | Z = tin-plated |
| ... no. of contacts | ... surface of contact | | | | | | | | | | |
| one row 1 - 50 | G = gold-plated | | | | | | | | | | |
| two rows 4 - 100 | Z = tin-plated | | | | | | | | | | |

Male headers

Precision contacts, low profile

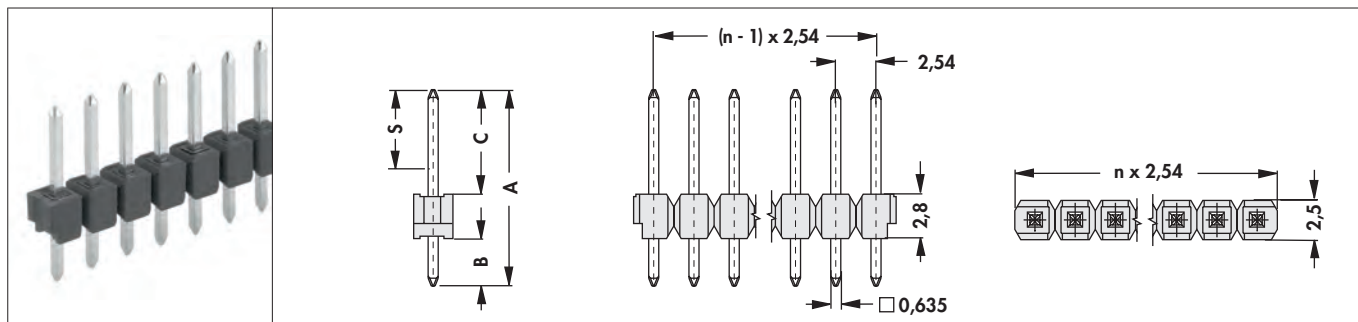
– one row

| | | | |
|---|--|--|---|
| <p>art. no.</p> <p>SL 7 ...</p> |  |  |  |
| <p>art. no.</p> <p>SL 8 ...</p> |  |  |  |
| <p>art. no.</p> <p>SL 9 ...</p> |  |  |  |
| <p>please indicate:</p> <p>... no. of contacts one row 1 - 20</p> <p>... surface of contact G = gold-plated Z = tin-plated</p> | | | |

A

Male headers

- every pin length is available on request
- one row, □ 0.635 mm



| art. no. | dim. [mm] | | | | art. no. | dim. [mm] | | | |
|----------------------|-----------|-----|------|---------------------|---------------------|---------------------|-----|------|---|
| | A | B | C | S | | A | B | C | S |
| SL 11 097... | 9.7 | 3.0 | 3.9 | 4 | SL 1 025 ... | 11.2 | 2.6 | 5.8 | 4 |
| SL 11 112 ... | 11.2 | | 5.4 | | 5 | SL 1 053 ... | | 13.9 | |
| SL 11 124 ... | 12.4 | | 6.6 | SL 1 078 ... | | 16.4 | | 7.8 | 5 |
| SL 11 139 ... | 13.9 | | 8.1 | SL 1 104 ... | | 19.0 | | 10.4 | |
| SL 11 164 ... | 16.4 | | 10.6 | SL 1 128 ... | | 21.4 | | 12.8 | 6 |
| SL 11 190 ... | 19.0 | | 13.2 | SL 1 154 ... | | 24.0 | | 15.4 | |
| SL 11 214 ... | 21.4 | | 15.6 | SL 1 179 ... | | 26.5 | | 17.9 | |
| SL 11 240 ... | 24.0 | | 18.2 | SL 1 230 ... | | 31.6 | | 23.0 | |
| SL 11 265 ... | 26.5 | | 20.7 | | | | | | |
| SL 11 316 ... | 31.6 | | 25.8 | | | | | | |

please indicate:

... no. of contacts
one row 1 - 36

... surface of contact
S = selective gold-plated
G = gold-plated
Z = tin-plated

G

H

I

K

L

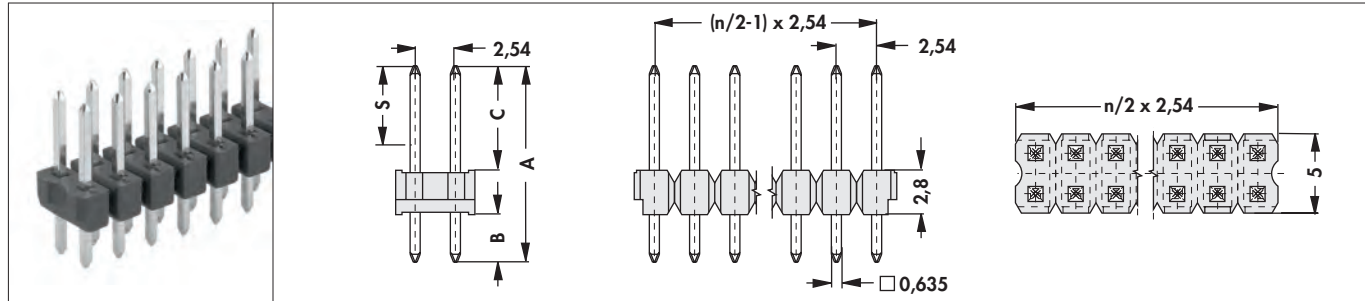
M

N

G 7
Technical data
→ G 101 - 107

Male headers

- every pin length is available on request
- two rows, □ 0.635 mm



| art. no. | dim. [mm] | | | | art. no. | dim. [mm] | | | | |
|---------------|-----------|-----|------|--------------|--------------|--------------|-----|------|------|-----|
| | A | B | C | S | | A | B | C | S | |
| SL 22 097 ... | 9.7 | 3.0 | 3.9 | 4 | SL 2 025 ... | 11.2 | 5.8 | 5.8 | 4 | |
| SL 22 112 ... | 11.2 | | 5.4 | | 5 | SL 2 053 ... | | 13.9 | | 5.3 |
| SL 22 124 ... | 12.4 | | 6.6 | SL 2 078 ... | | 16.4 | | 7.8 | | |
| SL 22 139 ... | 13.9 | | 8.1 | SL 2 104 ... | | 19.0 | | 10.4 | | |
| SL 22 164 ... | 16.4 | | 10.6 | SL 2 128 ... | | 21.4 | | 12.8 | 6 | |
| SL 22 190 ... | 19.0 | | 13.2 | SL 2 154 ... | | 24.0 | | 15.4 | | |
| SL 22 214 ... | 21.4 | | 15.6 | SL 2 179 ... | | 26.5 | | 17.9 | | |
| SL 22 240 ... | 24.0 | | 18.2 | 6 | | SL 2 230 ... | | 31.6 | 23.0 | |
| SL 22 265 ... | 26.5 | | 20.7 | | | | | | | |
| SL 22 316 ... | 31.6 | | 25.8 | | | | | | | |

please indicate: ... no. of contacts two rows 2 - 72 ... surface of contact
S = selective gold-plated
G = gold-plated
Z = tin-plated

A
B
C
D
E
F
G
H
I
K
L
M
N

Male headers

Through-Hole-Reflow (THR) soldering technology

– every pin length is available upon request

– one row, \square 0.635 mm

| | | | | | | | | | |
|--------------------------|--|---|-----|---|---|-----------|---|------|---|
| | | | | | | | | | |
| art. no. | dim. [mm] | | | | art. no. | dim. [mm] | | | |
| | A | B | C | S | | A | B | C | S |
| SL 20 THR 097 ... | 9.7 | 2 | 4.9 | 4 | SL 20 THR 139 ... | 13.9 | 2 | 9.1 | 5 |
| SL 20 THR 112 ... | 11.2 | | 6.4 | | SL 20 THR 164 ... | 16.4 | | 11.6 | |
| SL 20 THR 124 ... | 12.4 | | 7.6 | 5 | | | | | |
| please indicate: | ... no. of contacts one row 1 - 36 | | | | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | | | | |

– two rows, \square 0.635 mm

| | | | | | | | | | |
|--------------------------|---|---|-----|---|---|-----------|---|------|---|
| | | | | | | | | | |
| art. no. | dim. [mm] | | | | art. no. | dim. [mm] | | | |
| | A | B | C | S | | A | B | C | S |
| SL 21 THR 097 ... | 9.7 | 2 | 4.9 | 4 | SL 21 THR 139 ... | 13.9 | 2 | 9.1 | 5 |
| SL 21 THR 112 ... | 11.2 | | 6.4 | | SL 21 THR 164 ... | 16.4 | | 11.6 | |
| SL 21 THR 124 ... | 12.4 | | 7.6 | 5 | | | | | |
| please indicate: | ... no. of contacts two rows 2 - 72 | | | | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | | | | |

Male headers

"Dimensions A + B" changeable

- **separable!** any requested number of contact can be delivered
- any pin length is available upon request

- one row, \square 0.635 mm

- **the surface of dimension "C"** of following articles is selective gold-plated: **SLK 3 025 ... S, SL 3 025 ... S**

| art. no. | dim. [mm] | | | | art. no. | dim. [mm] | | | | |
|--------------|-----------|------|-----|---|--------------|---------------|------|-----|-----|---|
| | A | B | C | S | | A | B | C | S | |
| SL 3 025 ... | 4.5 | 3.0 | 5.8 | 5 | SL 3 152 ... | 16.7 | 15.2 | 5.8 | 6 | |
| SL 3 053 ... | 6.9 | 5.4 | | | SL 3 182 ... | 19.7 | 18.2 | | | |
| SL 3 080 ... | 9.5 | 8.0 | | | SL 3 207 ... | 22.2 | 20.7 | | | |
| SL 3 101 ... | 11.6 | 10.1 | | | 6 | SLK 3 025 ... | 4.5 | 3.0 | 3.0 | 4 |
| SL 3 131 ... | 14.6 | 13.1 | | | | | | | | |

please indicate:

... no. of contacts
one row 1 - 36

... surface of contact
S = selective gold-plated
G = gold-plated
Z = tin-plated

- two rows, \square 0,635 mm

- **the surface of dimension "C"** of following articles is selective gold-plated: **SLK 4 025 ... S, SL 4 025 ... S**

| art. no. | dim. [mm] | | | | art. no. | dim. [mm] | | | |
|--------------|-----------|------|-----|---|---------------|-----------|------|-----|---|
| | A | B | C | S | | A | B | C | S |
| SL 4 025 ... | 4.5 | 3.0 | 5.8 | 5 | SL 4 152 ... | 16.7 | 15.2 | 5.8 | 6 |
| SL 4 101 ... | 11.6 | 10.1 | | 6 | SLK 4 025 ... | 4.5 | 3.0 | 3.0 | 4 |

please indicate:

... no. of contacts
two rows 2 - 72


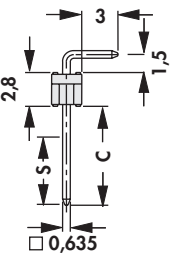
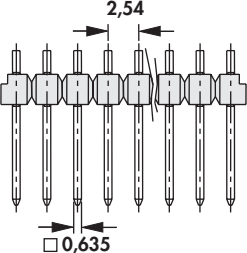
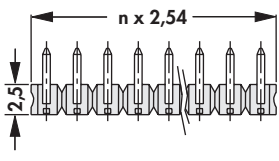
... surface of contact
S = selective gold-plated
G = gold-plated
Z = tin-plated

Male headers


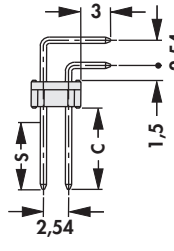
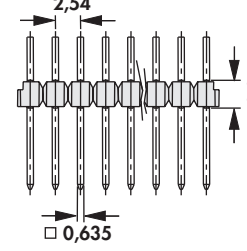
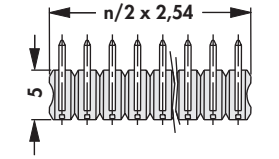
Insertion side "dimension C" changeable

- **separable!** any requested number of contact can be delivered
- any pin length is available on request

– one row, □ 0.635 mm

| | | | | | |
|---|---|--|---|-----------|---|
|  |  |  |  | | |
| art. no. | dim. [mm] | | art. no. | dim. [mm] | |
| | C | S | | C | S |
| SL 18 042 ... | 4.2 | 5 | SL 18 108 ... | 10.8 | 5 |
| SL 18 082 ... | 8.2 | | SL 18 132 ... | 13.2 | 6 |
| please indicate: | ... no. of contacts one row 1 - 36 | | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | | |

– two rows, □ 0.635 mm


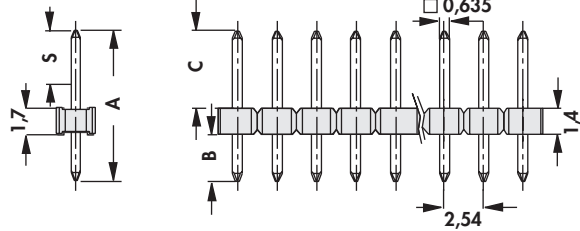
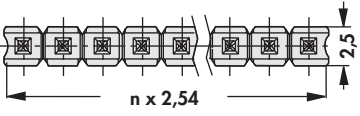
| | | | | | |
|--|--|---|---|-----------|---|
|  |  |  |  | | |
| art. no. | dim. [mm] | | art. no. | dim. [mm] | |
| | C | S | | C | S |
| SL 19 082 ... | 8.2 | 5 | SL 19 132 ... | 13.2 | 6 |
| SL 19 108 ... | 10.8 | | | | |
| please indicate: | ... no. of contacts two rows 2 - 72 | | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | | |

Male headers

Low profile, straight

– any pin length is available on request


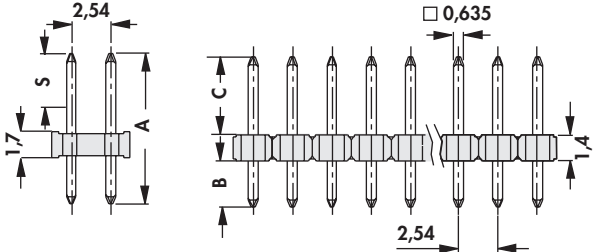
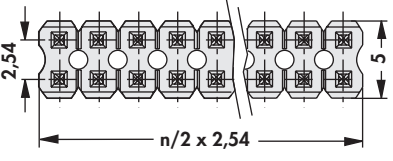
– one row, □ 0.635 mm

| art. no. | dim. [mm] | | | | art. no. | dim. [mm] | | | |
|-----------------|-----------|---|-----|---|-----------------|-----------|---|------|---|
| | A | B | C | S | | A | B | C | S |
| SL LP 1 082 ... | 8.2 | 3 | 3.5 | 3 | SL LP 1 139 ... | 13.9 | 3 | 9.2 | 5 |
| SL LP 1 097 ... | 9.7 | | 5.0 | 4 | SL LP 1 164 ... | 16.4 | | 11.7 | |
| SL LP 1 112 ... | 11.2 | | 6.5 | | SL LP 1 190 ... | 19.0 | | 14.3 | |

please indicate: ... no. of contacts one row 1 - 36 ... surface of contact
S = selective gold-plated
G = gold-plated
Z = tin-plated

– two rows, □ 0.635 mm

| art. no. | dim. [mm] | | | | art. no. | dim. [mm] | | | |
|-----------------|-----------|---|-----|---|-----------------|-----------|---|------|---|
| | A | B | C | S | | A | B | C | S |
| SL LP 2 082 ... | 8.2 | 3 | 3.5 | 3 | SL LP 2 139 ... | 13.9 | 3 | 9.2 | 5 |
| SL LP 2 097 ... | 9.7 | | 5.0 | 4 | SL LP 2 164 ... | 16.4 | | 11.7 | |
| SL LP 2 112 ... | 11.2 | | 6.5 | | SL LP 2 190 ... | 19.0 | | 14.3 | |

please indicate: ... no. of contacts two rows 2 - 72 ... surface of contact
S = selective gold-plated
G = gold-plated
Z = tin-plated

A

Male headers

Low profile, angled

– any pin length is available on request

– one row, \square 0.635 mm

| | | | | | | | | | |
|-------------------------|--|---|-----|---|---|-----------|---|-----|---|
| | | | | | | | | | |
| art. no. | dim. [mm] | | | | art. no. | dim. [mm] | | | |
| | A | B | C | S | | A | B | C | S |
| SL LP 3 041 ... | 4.5 | 3 | 4.1 | 4 | SL LP 3 069 ... | 4.5 | 3 | 6.9 | 5 |
| please indicate: | ... no. of contacts one row 1 - 36 | | | | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | | | | |

– two rows, \square 0.635 mm

| | | | | | | | | |
|--------------------------|---|---|-----|---|-----------|---|-----|---|
| | | | | | | | | |
| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | | |
| | A | B | C | | A | B | C | S |
| SL LP 4 041 ... G | 4.5 | 3 | 4.1 | SL LP 4 069 ... | 4.5 | 3 | 6.9 | 5 |
| SL LP 4 041 ... Z | | | | | | | | |
| please indicate: | ... no. of contacts two rows 2 - 72 | | | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | | | | |

I

K

L

M

N

Male headers

Sandwich-design

- "S" selective gold-plated up to 33 mm pin length
- for interconnections of stacked PCBs
- within the total length of the pin the insulator position can be changed as required ... Design specification-sheet
- **separable!** any requested number of contact can be delivered

- one row, □ 0.635 mm

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | | art. no. | dim. [mm] | |
|--------------|-----------|------|---|--------------|-----------|------|--------------|--------------|-----------|------|
| | A | L | S | | A | L | S | | A | L |
| SL 5 071 ... | 7.1 | 16.4 | 5 | SL 5 156 Z | 15.6 | 24.9 | 6 | SL 5 285 ... | 28.5 | 37.8 |
| SL 5 097 ... | 9.7 | 19.0 | | SL 5 172 ... | 17.2 | 26.5 | | SL 5 315 ... | 31.5 | 40.8 |
| SL 5 121 ... | 12.1 | 21.4 | 6 | SL 5 197 ... | 19.7 | 29.0 | SL 5 360 ... | 36.0 | 45.3 | |
| SL 5 147 ... | 14.7 | 24.0 | | SL 5 223 ... | 22.3 | 31.6 | SL 5 415 ... | 41.5 | 50.8 | |
| SL 5 156 G | 15.6 | 24.9 | | SL 5 237 ... | 23.7 | 33.0 | SL 5 525 ... | 52.2 | 61.5 | |

please indicate: ... no. of contacts one row 1 - 36 ... surface of contact
 S = selective gold-plated
 G = gold-plated
 Z = tin-plated

- two rows, □ 0,635 mm

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | | art. no. | dim. [mm] | |
|--------------|-----------|------|---|--------------|-----------|------|--------------|--------------|-----------|------|
| | A | L | S | | A | L | S | | A | L |
| SL 6 071 ... | 7.1 | 16.4 | 5 | SL 6 156 Z | 15.6 | 24.9 | 6 | SL 6 285 ... | 28.5 | 37.8 |
| SL 6 097 ... | 9.7 | 19.0 | | SL 6 172 ... | 17.2 | 26.5 | | SL 6 315 ... | 31.5 | 40.8 |
| SL 6 121 ... | 12.1 | 21.4 | 6 | SL 6 197 ... | 19.7 | 29.0 | SL 6 360 ... | 36.0 | 45.3 | |
| SL 6 147 ... | 14.7 | 24.0 | | SL 6 223 ... | 22.3 | 31.6 | SL 6 415 ... | 41.5 | 50.8 | |
| SL 6 156 G | 15.6 | 24.9 | | SL 6 237 ... | 23.7 | 33.0 | SL 6 525 ... | 52.2 | 61.5 | |


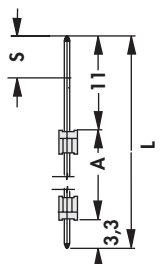
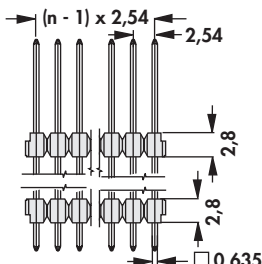
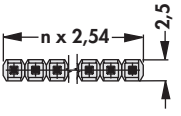
please indicate: ... no. of contacts two rows 2 - 72 ... surface of contact
 S = selective gold-plated
 G = gold-plated
 Z = tin-plated

Male headers


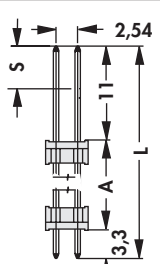
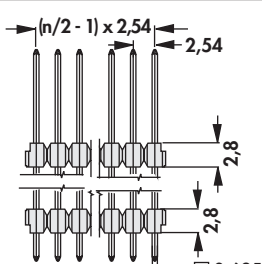
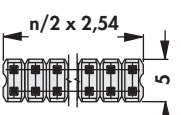
Sandwich-design

- "S" selective gold-plated up to 33 mm pin length
- for interconnections of stacked PCBs
- for plugging the the female headers **BL 11 (SL 13 ...)** → G 67 and **BL 12 (SL 14 ...)** → G 67
- suitable for PCB thicknesses between 1.5 mm and 33 mm
- **separable!** any requested number of contact can be delivered

– one row □ 0.635 mm

|  |  |  |  | | | |
|---|---|--|---|---|-----------|------|
| art. no. | dim. [mm] | | S | art. no. | dim. [mm] | |
| | A | L | | | A | L |
| SL 13 071 ... | 7.1 | 21.4 | 6 | SL 13 235 ... | 23.5 | 37.8 |
| SL 13 097 ... | 9.7 | 24.0 | | SL 13 265 ... | 26.5 | 40.8 |
| SL 13 122 ... | 12.2 | 26.5 | | SL 13 310 ... | 31.0 | 45.3 |
| SL 13 147 ... | 14.7 | 29.0 | | SL 13 365 ... | 36.5 | 50.8 |
| SL 13 187 ... | 18.7 | 33.0 | | | | |
| | | | | | | |
| please indicate: | ... no. of contacts one row 1 - 36 | | | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | | |

– two rows, □ 0.635 mm

|  |  |  |  | | | |
|---|---|--|---|---|-----------|------|
| art. no. | dim. [mm] | | S | art. no. | dim. [mm] | |
| | A | L | | | A | L |
| SL 14 071 ... | 7.1 | 21.4 | 6 | SL 14 235 ... | 23.5 | 37.8 |
| SL 14 097 ... | 9.7 | 24.0 | | SL 14 265 ... | 26.5 | 40.8 |
| SL 14 122 ... | 12.2 | 26.5 | | SL 14 310 ... | 31.0 | 45.3 |
| SL 14 147 ... | 14.7 | 29.0 | | SL 14 365 ... | 36.5 | 50.8 |
| SL 14 187 ... | 18.7 | 33.0 | | | | |
| | | | | | | |
| please indicate: | ... no. of contacts two rows 2 - 72 | | | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | | |

Design specification for connectors, grid spacing 2.54 mm

date: _____
 pieces per order: _____
 company: _____
 name, dept.: _____
 town: _____
 street: _____
 fax: _____
 signature: _____

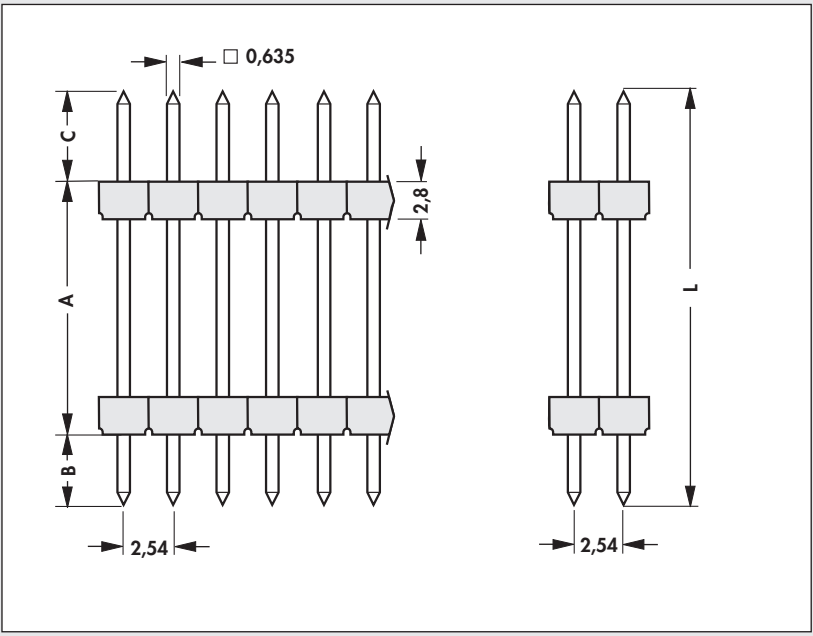
- inquiry
- order

surface finish

- selective gold-plated
- gold-plated
- tin-plated

one row 1 - 36 contacts possible
 two rows 2 - 72 contacts possible

number of contacts



dimensions:

L

A

B

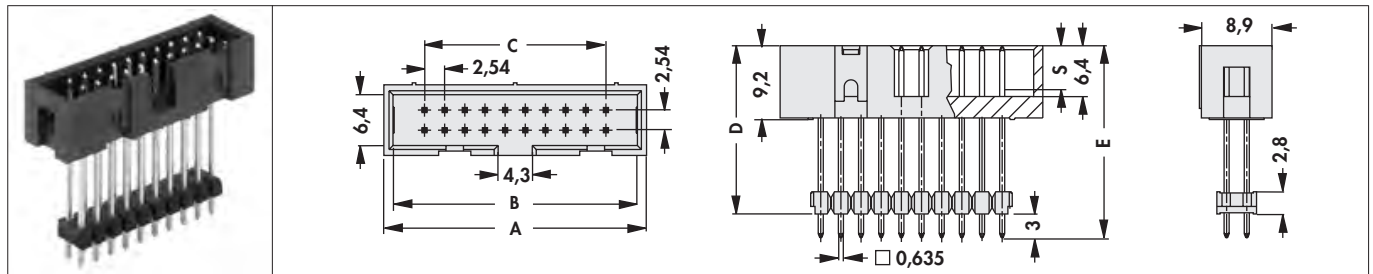
C

L = total contact length
A = distance between PCBs
B = solder side
C = insertion side

Male headers

Shrouded male header, with coding and bolting device

– suitable for many flat cable connectors in 2.54 mm pitch

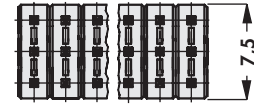
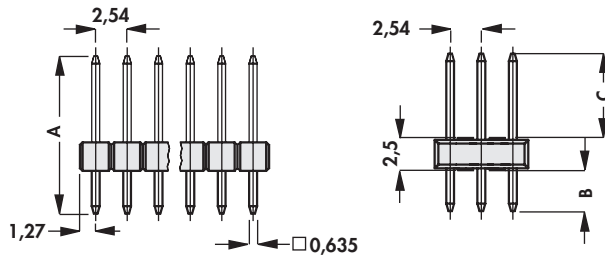


| art. no. | no. of contacts | dim. [mm] | | | | | |
|----------------|-----------------|-----------|------|-------|------|------|---|
| | | A | B | C | D | E | S |
| SLU 10 165 ... | 10 | 20.4 | 17.8 | 10.16 | 13.5 | 16.5 | 5 |
| SLU 10 191 ... | | | | | 16.1 | 19.1 | |
| SLU 10 241 ... | | | | | 21.1 | 24.1 | 6 |
| SLU 10 266 ... | | | | | 23.6 | 26.6 | |
| SLU 16 165 ... | 16 | 28.0 | 25.4 | 17.78 | 13.5 | 16.5 | 5 |
| SLU 16 191 ... | | | | | 16.1 | 19.1 | |
| SLU 16 241 ... | | | | | 21.1 | 24.1 | 6 |
| SLU 16 266 ... | | | | | 23.6 | 26.6 | |
| SLU 20 165 ... | 20 | 33.1 | 30.5 | 22.86 | 13.5 | 16.5 | 5 |
| SLU 20 191 ... | | | | | 16.1 | 19.1 | |
| SLU 20 241 ... | | | | | 21.1 | 24.1 | 6 |
| SLU 20 266 ... | | | | | 23.6 | 26.6 | |
| SLU 26 165 ... | 26 | 40.7 | 38.1 | 30.48 | 13.5 | 16.5 | 5 |
| SLU 26 191 ... | | | | | 16.1 | 19.1 | |
| SLU 26 241 ... | | | | | 21.1 | 24.1 | 6 |
| SLU 26 266 ... | | | | | 23.6 | 26.6 | |
| SLU 40 165 ... | 40 | 58.5 | 55.9 | 48.26 | 13.5 | 16.5 | 5 |
| SLU 40 191 ... | | | | | 16.1 | 19.1 | |
| SLU 40 241 ... | | | | | 21.1 | 24.1 | 6 |
| SLU 40 266 ... | | | | | 23.6 | 26.6 | |
| SLU 50 165 ... | 50 | 71.2 | 68.6 | 60.96 | 13.5 | 16.5 | 5 |
| SLU 50 191 ... | | | | | 16.1 | 19.1 | |
| SLU 50 241 ... | | | | | 21.1 | 24.1 | 6 |
| SLU 50 266 ... | | | | | 23.6 | 26.6 | |

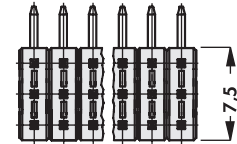
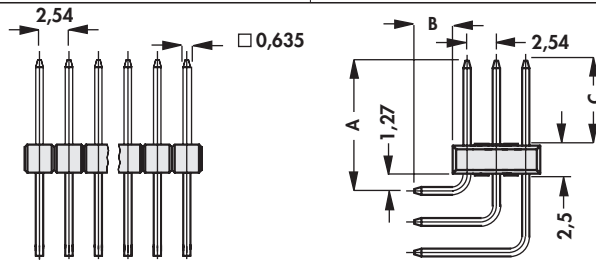
please indicate: ... surface of contact
S = selective gold-plated
Z = tin-plated

Male headers

Three rows, □ 0.635 mm



| art. no. | dim. [mm] | | |
|-----------------|-----------|-----|-----|
| | A | B | C |
| SL KG 3 113 ... | 11.3 | 3.3 | 5.5 |
| SL KG 3 126 ... | 12.6 | | 6.8 |
| SL KG 3 147 ... | 14.7 | | 8.9 |



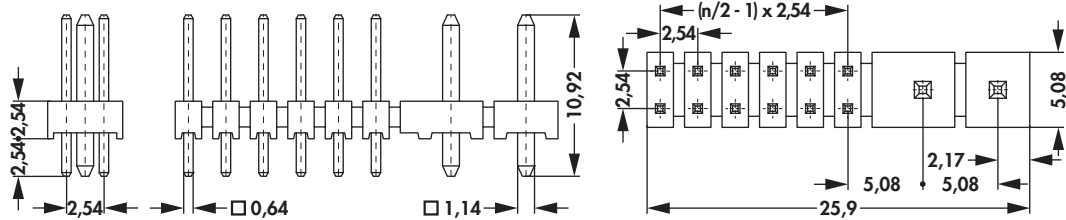
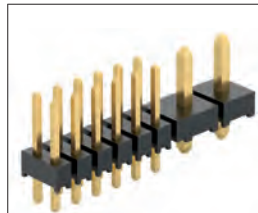
| art. no. | dim. [mm] | | |
|-----------------|-----------|-----|-----|
| | A | B | C |
| SL KA 3 072 ... | 7.2 | 3.3 | 3.4 |
| SL KA 3 085 ... | 8.5 | | 4.7 |
| SL KA 3 108 ... | 10.8 | | 7.0 |

please indicate: ... no. of contacts three rows 3 - 150 ... surface of contact
G = gold-plated
Z = tin-plated

Male headers

Turned precision male contacts

- Suitable for **BL 22 SHK 14 02 G** → G 72 and **BL 23 SHK 14 02 SMD G** → G 78
- Signal and high-power contacts
- Contacts gold-plated
- Other number of contacts / contact surface upon request



| | | |
|----------------------------|-----------------|---------------------|
| art. no. | signal contacts | high-power contacts |
| SL 26 SHK 14 02 G | 12 | 2 |
| surface of contact: | gold-plated | |

Male headers

Precision contacts, plug pins Ø 0.5 mm

| | | | | | |
|---|---|--|--|--|--|
| <p>art. no.</p> <p>MK 26 SMD ...</p> | | | | | |
| <p>please indicate:</p> | <p>... no. of contacts one row 4 - 20</p> | <p>... surface of contact G = gold-plated Z = tin-plated</p> | <p>... packing (optional)</p> <p>SM = bar magazine</p> <p>B SM = pick and place pad and bar magazine</p> <p>B TR = pick and place pad and tape and reel (250pcs/reel)</p> | | |

... packing (option) - additions:
MK 26 SMD ... B TR: 4-12 contacts


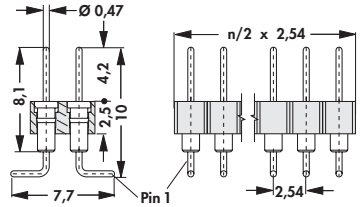
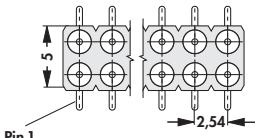
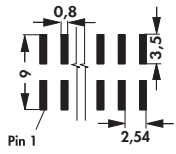
Option for automatic assembly

- reel diameter Ø 330 mm

| | | | |
|-------------------------------|---------------------------|-------------------------|---------------------------|
| | | <p>MK 26 SMD ... SM</p> | <p>MK 26 SMD ... B SM</p> |
| <p>... SM</p> <p>... B SM</p> | <p>MK 26 SMD ... B TR</p> | | |
| <p>... B TR</p> | | | |

Male headers

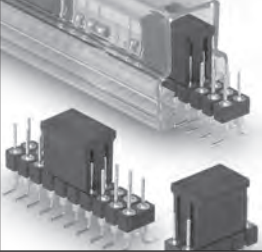
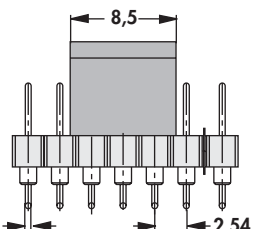
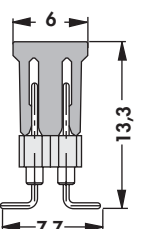
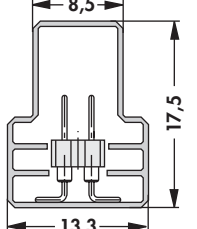
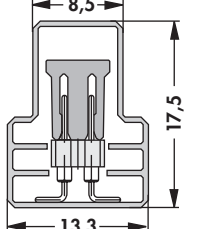
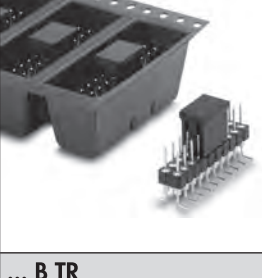
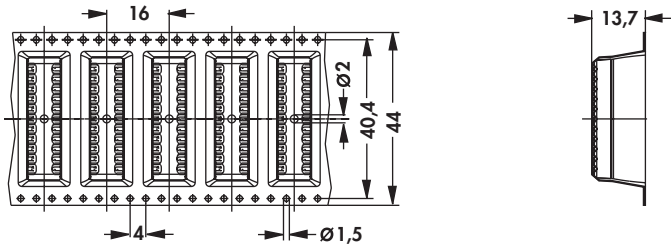
Precision contacts, plug pins $\varnothing 0.5$ mm

| | | | | |
|--|---|--|---|---|
| art. no. MK 226 SMD ... |  |  |  |  |
| please indicate: | ... no. of contacts two rows 4 - 40 | ... surface of contact G = gold-plated Z = tin-plated | ... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (250pcs/reel) | |

... packing (option) - additions:
 MK 226 SMD ... SM; ... B SM: 6-40 contacts
 MK 226 SMD ... B TR: 6-24 contacts


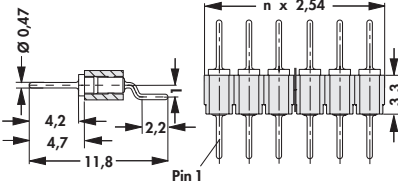
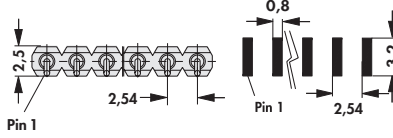
Option for automatic assembly

– reel diameter $\varnothing 330$ mm

| | | | | |
|---|--|--|---|--|
|  |  |  |  |  |
| ... SM ... B SM | MK 226 SMD ... SM | | MK 226 SMD ... B SM | |
|  |  | | | |
| ... B TR | MK 226 SMD ... B TR | | | |


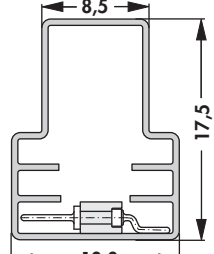
Male headers

Precision contacts, plug pins Ø 0.5 mm

| | | | |
|---|---|---|--|
| <p>art. no.</p>  <p>MK 27 SMD ...</p> |  |  | |
| <p>please indicate:</p> | <p>... no. of contacts one row 2 - 20</p> | <p>... surface of contact G = gold-plated Z = tin-plated</p> | <p>... packing (optional) SM = bar magazine</p> |

... packing (option) - additions:
MK 27 SMD ... SM: 3-20 contacts

Option for automatic assembly

| | |
|--|---|
|  |  <p>MK 27 SMD ... SM</p> |
| <p>... SM</p> | |

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fischer elektronik

2.54

Male headers

□ 0.635 mm

| art. no. | dim. [mm] | | art. no. | dim. [mm] | | art. no. | dim. [mm] | |
|-------------------|-----------|---|-------------------|-----------|---|-------------------|-----------|---|
| | C | S | | C | S | | C | S |
| SL 10 SMD 040 ... | 4.0 | 4 | SL 10 SMD 062 ... | 6.7 | 5 | SL 10 SMD 104 ... | 10.8 | 5 |
| SL 10 SMD 052 ... | 5.5 | | SL 10 SMD 078 ... | 8.2 | | SL 10 SMD 130 ... | 13.4 | |

please indicate:

- ... no. of contacts one row 4 - 20
- ... surface of contact
 - S = selective gold-plated
 - G = gold-plated
 - Z = tin-plated
- ... packing (optional)
 - SM = bar magazine
 - B SM = pick and place pad and bar magazine
 - B TR = pick and place pad and tape and reel

... packing (option) - additions:
 SL 10 SMD 040 - 104 ... SM; ... B SM: 4-20 contacts
 SL 10 SMD 040 - 062 ... B TR: 4-20 contacts, 250 pcs/reel
 SL 10 SMD 078 ... B TR: 4-12 contacts, 250 pcs/reel
 SL 10 SMD 104 - 130 ... B TR: 4-12 contacts, 150 pcs/reel

Option for automatic assembly

- reel diameter Ø 330 mm

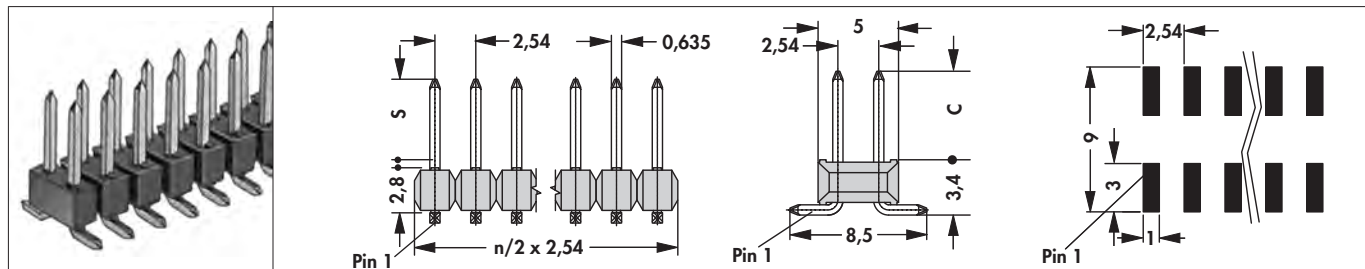
| | |
|----------------------------|--|
| <p>... SM ... B SM</p> | <p>SL 10 SMD ... SM SL 10 SMD ... B SM</p> |
| <p>... B TR</p> | <p>SL 10 SMD 040-062 ... 4-12 ... B TR SL 10 SMD 040-062 ... 13-20 ... B TR</p> <p>SL 10 SMD 078 ... 4-12 ... B TR SL 10 SMD 104 - 130 ... 4-12 ... B TR</p> |

G 23 Technical data → G 101 - 107

Downloaded from Arrow.com

Male headers

□ 0.635 mm

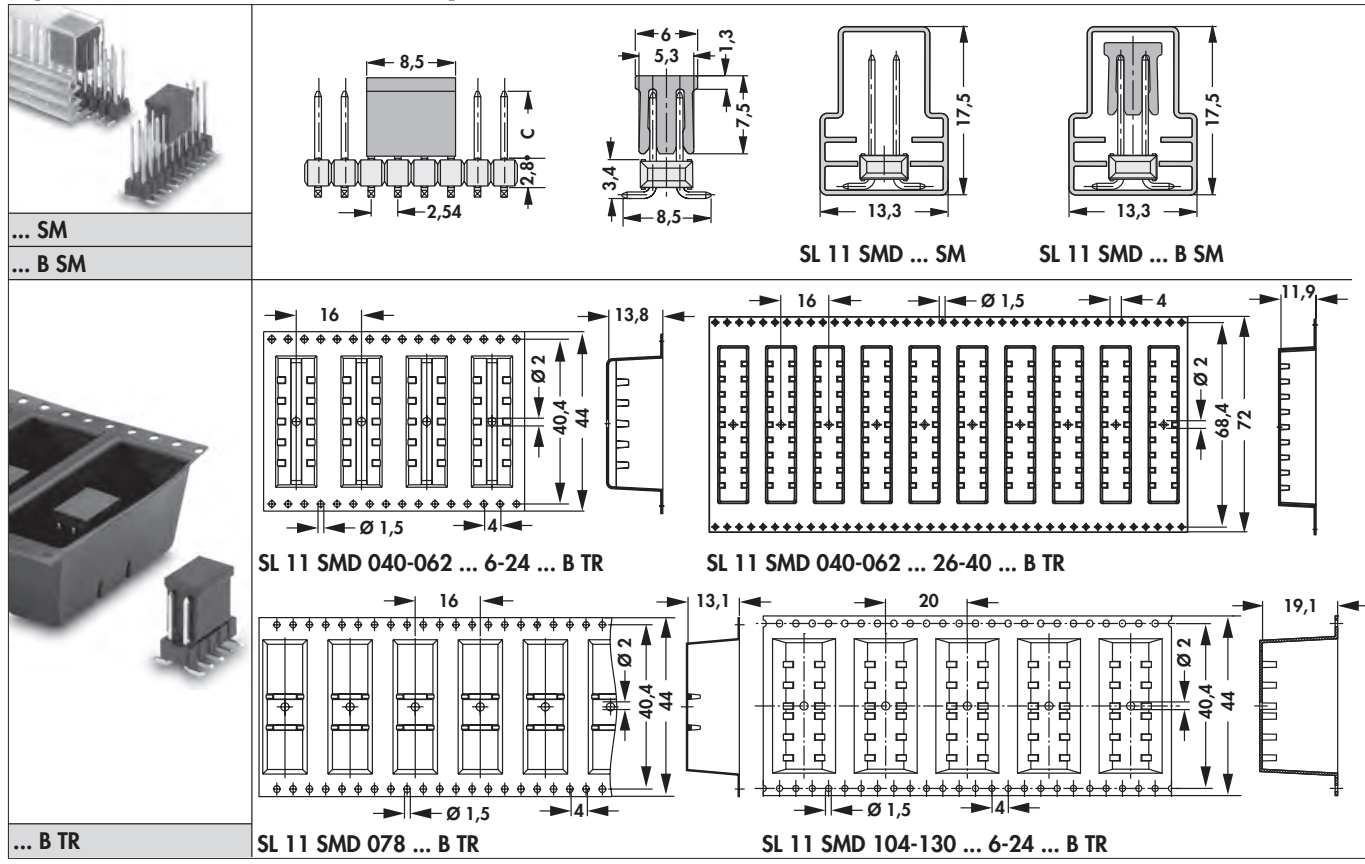


| art. no. | dim. [mm] | | art. no. | dim. [mm] | | art. no. | dim. [mm] | |
|-------------------|-----------|---|-------------------|-----------|---|-------------------|-----------|---|
| | C | S | | C | S | | C | S |
| SL 11 SMD 040 ... | 4.0 | 4 | SL 11 SMD 062 ... | 6.7 | 5 | SL 11 SMD 104 ... | 10.8 | 5 |
| SL 11 SMD 052 ... | 5.5 | | SL 11 SMD 078 ... | 8.2 | | SL 11 SMD 130 ... | 13.4 | |

please indicate: ... no. of contacts two rows 4 - 40 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated ... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (150pcs/reel) B TR = pick and place pad and tape and reel (250pcs/reel)

... packing (option) - additions:
 SL 11 SMD 040-104 ... SM; ... B SM: 6-40 contacts
 SL 11 SMD 040-062 ... B TR: 26-40 contacts, 250 pcs/reel
 SL 11 SMD 040-078 ... B TR: 6-24 contacts, 250 pcs/reel
 SL 11 SMD 104-130 ... B TR: 6-24 contacts, 150 pcs/reel

Option for automatic assembly



Male headers

□ 0.635 mm

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|---|-----------|-----|---|--------------------------|-----------|-----|---|--------------------------|-----------|------|---|
| | B | C | S | | B | C | S | | B | C | S |
| SL 12 SMD 031 ... | 5.2 | 3.1 | 4 | SL 12 SMD 035 ... | 3.2 | 3.5 | 4 | SL 12 SMD 083 ... | 5.2 | 8.3 | 5 |
| SL 12 SMD 032 ... | 3.2 | 5.8 | — | SL 12 SMD 058 ... | 5.2 | 5.8 | 5 | SL 12 SMD 109 ... | | 10.9 | |
| <p>please indicate: ... no. of contacts one row 2 - 20 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated ... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (500pcs/reel)</p> | | | | | | | | | | | |

... packing (option) - additions:
 SL 12 SMD ... B TR: 2-13 contacts

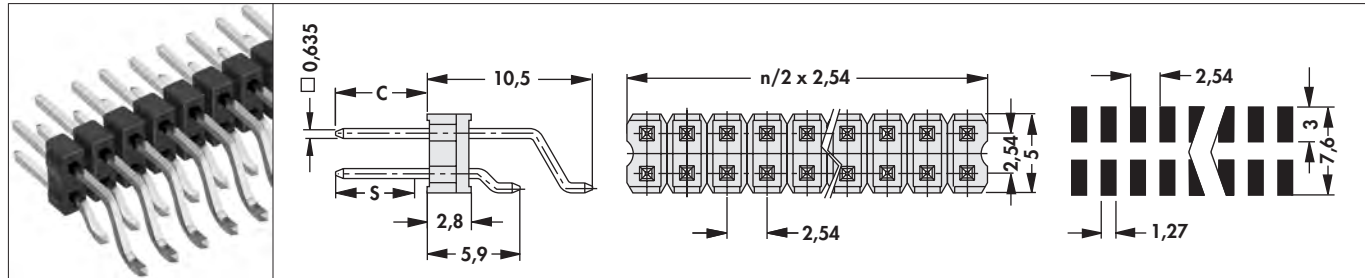
Option for automatic assembly

- reel diameter Ø 330 mm

| | | |
|----------|--|----------------------------|
| | | |
| ... B SM | | SL 12 SMD ... B SM |
| | | |
| ... B TR | | SL 12 SMD 031-109 ... B TR |

Male headers

□ 0.635 mm



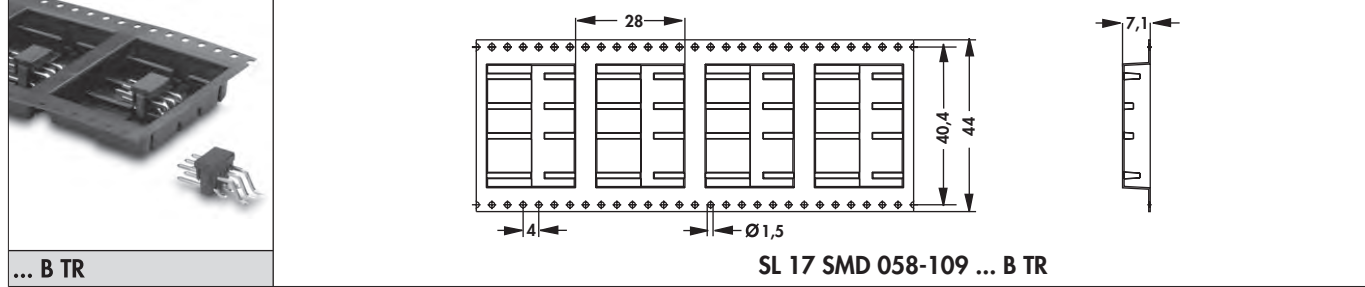
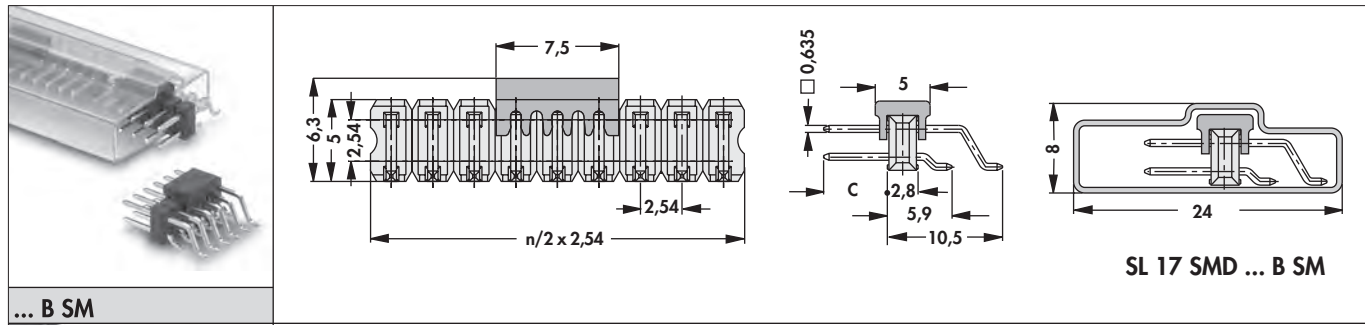
| art. no. | dim. [mm] | art. no. | dim. [mm] | art. no. | dim. [mm] |
|-------------------|-----------|-------------------|-----------|-------------------|-----------|
| SL 17 SMD 058 ... | C | SL 17 SMD 083 ... | C S | SL 17 SMD 109 ... | C S |
| | 5.8 | | 8.3 5 | | 10.9 5 |

please indicate: ... no. of contacts two rows 4 - 40 ... surface of contact G = gold-plated Z = tin-plated ... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (300pcs/reel)

... packing (option) - additions: SL 17 SMD ... B TR: 6-24 contacts

Option for automatic assembly

- reel diameter Ø 330 mm



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A

Male headers
□ 0.635 mm

| | | | | | |
|---|----------------|--|----------------|------------------------------|----------------|
| | | | | | |
| art. no. | dim. [mm] C | art. no. | dim. [mm] C | art. no. | dim. [mm] C |
| SL 28 SMD THR 058 ... | 5.8 | SL 28 SMD THR 083 ... | 8.3 | SL 28 SMD THR 109 ... | 10.9 |
| please indicate: | | | | | |
| ... no. of contacts two rows 4 - 40 | | ... surface of contact G = gold-plated Z = tin-plated | | | |

E

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M

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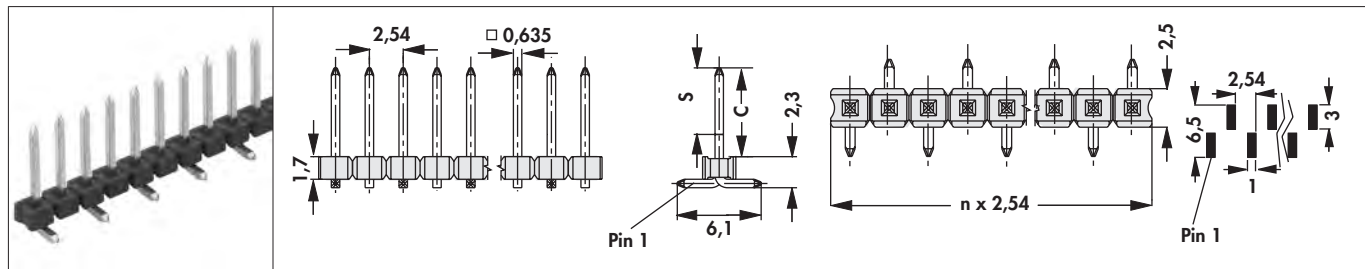
G 27

Technical data

→ G 101 - 107

Male headers

Low profile in SMD □ 0.635 mm



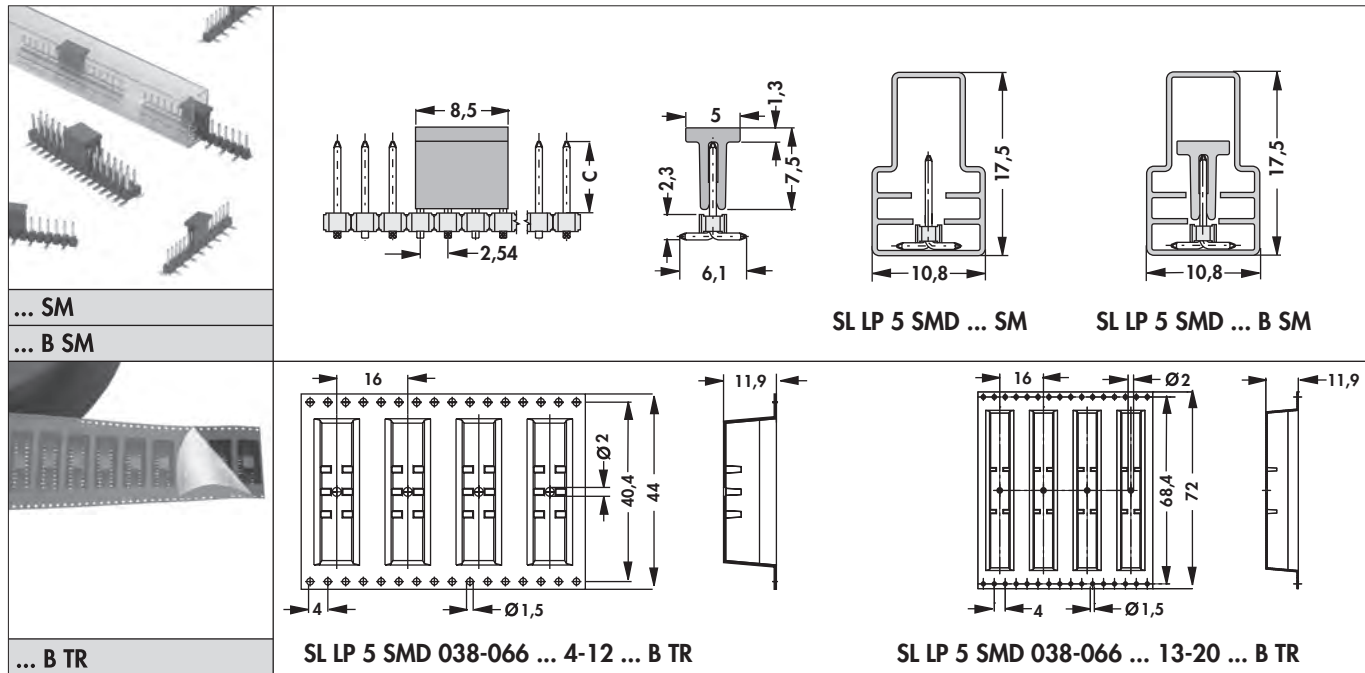
| art. no. | dim. [mm] | | art. no. | dim. [mm] | | art. no. | dim. [mm] | |
|---------------------|-----------|---|---------------------|-----------|---|---------------------|-----------|---|
| | C | S | | C | S | | C | S |
| SL LP 5 SMD 038 ... | 3.8 | 3 | SL LP 5 SMD 051 ... | 5.1 | 4 | SL LP 5 SMD 066 ... | 6.6 | 4 |

| | | | |
|------------------|---------------------|--|--|
| please indicate: | ... no. of contacts | ... surface of contact | ... packing (optional) |
| | one row 4 - 20 | S = selective gold-plated G = gold-plated Z = tin-plated | SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (250pcs/reel) |
| | | | |

... packing (option) - additions:
 SL LP 5 SMD ... SM; ... B SM: 4-20 contacts
 SL LP 5 SMD ... B TR: 4-20 contacts

Option for automatic assembly

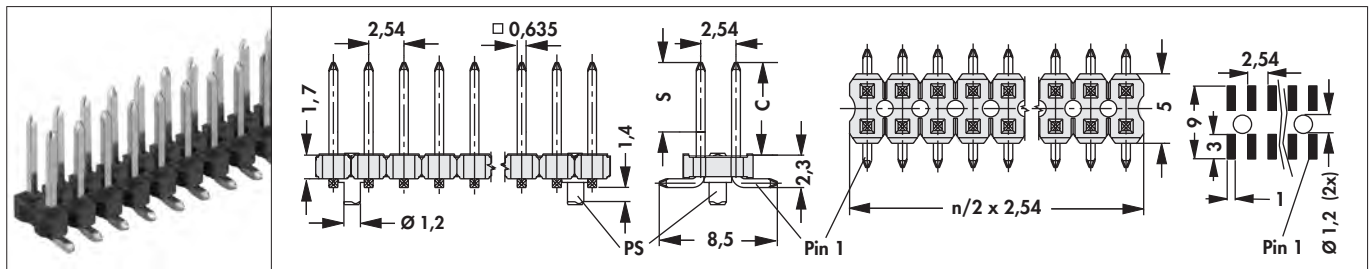
– reel diameter Ø 330 mm



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Male headers

Low profile in SMD □ 0.635 mm



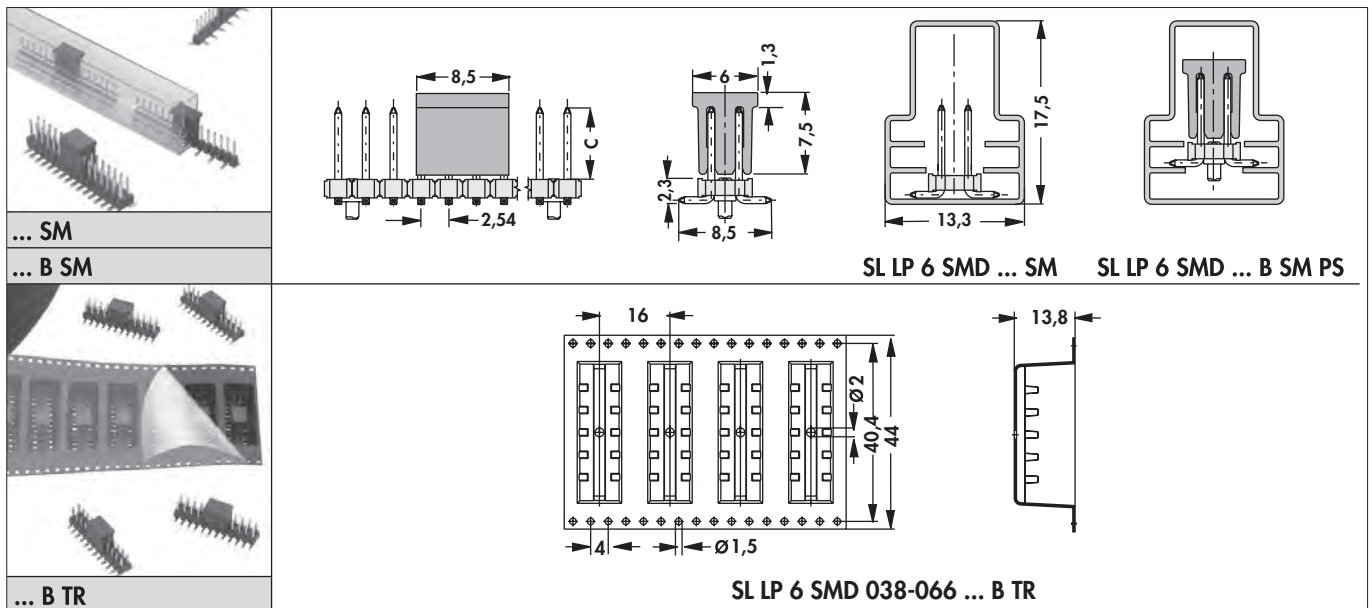
| art. no. | dim. [mm] | | art. no. | dim. [mm] | | art. no. | dim. [mm] | |
|---------------------|-----------|---|---------------------|-----------|---|---------------------|-----------|---|
| | C | S | | C | S | | C | S |
| SL LP 6 SMD 038 ... | 3.8 | 3 | SL LP 6 SMD 051 ... | 5.1 | 4 | SL LP 6 SMD 066 ... | 6.6 | 4 |

| | | | |
|------------------|--|--|---|
| please indicate: | ... no. of contacts two rows 4 - 40 | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | ... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (250pcs/reel) |
| | ... positioning (optional) PS = locating pin (2 pcs/bar bigger than 6 contacts) | | |

... packing (option) - additions:
 SL LP 6 SMD ... SM; ... B SM: 6-40 contacts
 SL LP 6 SMD ... B TR: 6-24 contacts

Option for automatic assembly

- reel diameter \varnothing 330 mm



... SM

... B SM

SL LP 6 SMD ... SM

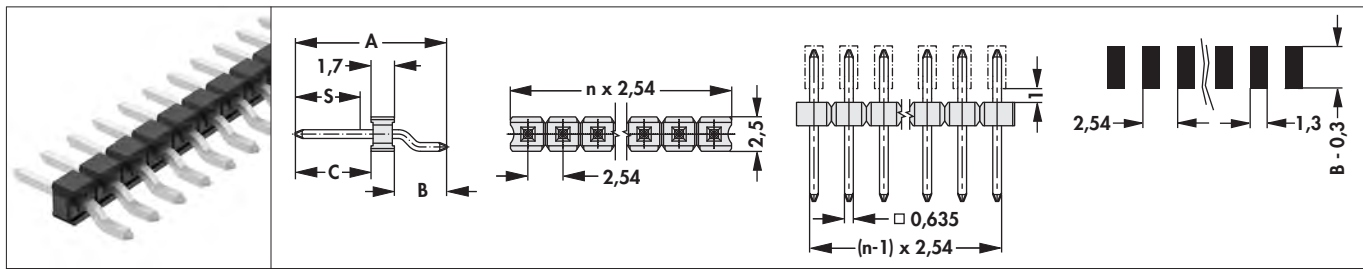
SL LP 6 SMD ... B SM PS

... B TR

SL LP 6 SMD 038-066 ... B TR

Male headers

Low profile in SMD □ 0.635 mm



| art. no. | dim. [mm] | | | |
|---------------------|-----------|-----|-----|---|
| | A | B | C | S |
| SL LP 7 SMD 030 ... | 8.0 | 3.3 | 3.0 | 3 |
| SL LP 7 SMD 040 ... | 9.5 | 3.8 | 4.0 | 4 |
| SL LP 7 SMD 055 ... | 11.0 | | 5.5 | |

please indicate: ... no. of contacts 2 - 20 ... surface of contact
S = selective gold-plated
G = gold-plated
Z = tin-plated

Male headers

□ 0.635 mm – for interconnections of stacked PCBs

- one row, 4-20 contacts
- within the total length of the pin the insulator can be changed according to customer's request

| art. no. | dim. [mm] | | art. no. | dim. [mm] | | art. no. | dim. [mm] | |
|---|-----------|---|--------------------------|-----------|---|--------------------------|-----------|---|
| | A | S | | A | S | | A | S |
| SL 15 SMD 107 ... | 10.7 | 5 | SL 15 SMD 182 ... | 18.2 | 6 | SL 15 SMD 207 ... | 20.7 | 6 |
| <p>please indicate:</p> <p>... no. of contacts one row 4 - 20</p> <p>... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated</p> <p>... positioning (optional) P = end pins straight for positioning</p> | | | | | | | | |

- two rows, 4-40 contacts
- within the total length of the insulator can be changed according to customer's request

| art. no. | dim. [mm] | | art. no. | dim. [mm] | | art. no. | dim. [mm] | |
|--|-----------|---|--------------------------|-----------|---|--------------------------|-----------|---|
| | A | S | | A | S | | A | S |
| SL 16 SMD 107 ... | 10.7 | 5 | SL 16 SMD 182 ... | 18.2 | 6 | SL 16 SMD 247 ... | 24.7 | 6 |
| SL 16 SMD 157 ... | 15.7 | 6 | SL 16 SMD 207 ... | 20.7 | | | | |
| <p>please indicate:</p> <p>... no. of contacts two rows 4 - 40</p> <p>... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated</p> <p>... positioning (optional) P = end pins straight for positioning</p> | | | | | | | | |

Male headers

Turned precision male contacts

- suitable for **BL 22 SHK 14 02 G** → G 72 and **BL 23 SHK 14 02 SMD G** → G 78
- signal and high-power contacts
- contacts gold-plated
- other number of contacts / contact surface upon request

| | | |
|------------------------------|-----------------|---------------------|
| | | |
| art. no. | signal contacts | high-power contacts |
| SL 27 SHK 14 02 SMD G | 12 | 2 |
| surface of contact: | gold-plated | |

Male headers

Male connectors in pressfit technology

- press-fit mounting without soldering, resilient press-fit area, easy insertion into the PCB
- Pressfit bar with insulating body has to be inserted up to the PCB
- **separable!** any requested number of contact can be delivered
- **contact material:** CuSn6

- one row, 1-36 contacts
- for PCB thickness ≥ 1.6 mm dimension B = 3.5 mm and ≥ 3.0 mm dimension B = 4.5 mm

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|-------------------------|--|-----|-----|--|-----------|-----|------|
| | A | B | C | | A | B | C |
| SLP 1 16 117 ... | 11.7 | 3.5 | 5.4 | SLP 1 16 144 ... | 14.4 | 3.5 | 8.1 |
| SLP 1 16 129 ... | 12.9 | | 6.6 | SLP 1 16 195 Z | 19.5 | | 13.2 |
| please indicate: | ... no. of contacts one row 1 - 36 | | | ... surface of contact G = gold-plated Z = tin-plated | | | |

- two rows, 2-72 contacts
- for PCB thickness ≥ 1.6 mm dimension B = 3.5 mm and ≥ 3.0 mm dimension B = 4.5 mm

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|-------------------------|---|-----|-----|--|-----------|-----|------|
| | A | B | C | | A | B | C |
| SLP 2 16 117 ... | 11.7 | 3.5 | 5.4 | SLP 2 16 144 ... | 14.4 | 3.5 | 8.1 |
| SLP 2 16 129 ... | 12.9 | | 6.6 | SLP 2 16 195 Z | 19.5 | | 13.2 |
| please indicate: | ... no. of contacts two rows 2 - 72 | | | ... surface of contact G = gold-plated Z = tin-plated | | | |

Hole diameter in PCB - hole structure acc. to DIN EN 60352-5

| |
|--|
| |
|--|

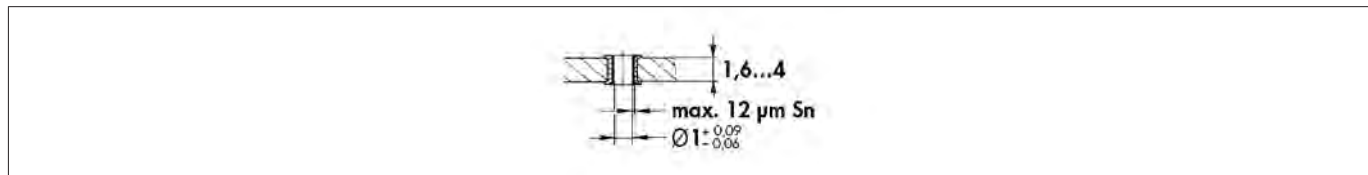
Male headers

Male header with shroud in pressfit technology

- suitable for lockable female multipoint connector **VFL ...** → H 11 and can be combined with many other female multipoint connectors with grid spacing 2.54 mm (e. g.: **PV ...**, **BL ...**)
- press-fit mounting without soldering, resilient press-fit area, easy insertion into PCB
- Pressfit bar with insulating body has to be inserted up to the PCB
- **contact material:** CuSn6

| | | | | | | | |
|---|-----------------|-----------------|-----------|-------|------|-----|---|
| | | | | | | | |
| | art. no. | no. of contacts | dim. [mm] | | | | |
| | | | A | B | C | D | E |
| SLUP 31 10 ... | 10 | 20.4 | 17.8 | 10.16 | 12.6 | 3.5 | |
| SLUP 31 16 ... | 16 | 28.0 | 25.4 | 17.78 | | | |
| SLUP 31 20 ... | 20 | 33.1 | 30.5 | 22.86 | | | |
| please indicate: ... surface of contact G = gold-plated Z = tin-plated | | | | | | | |


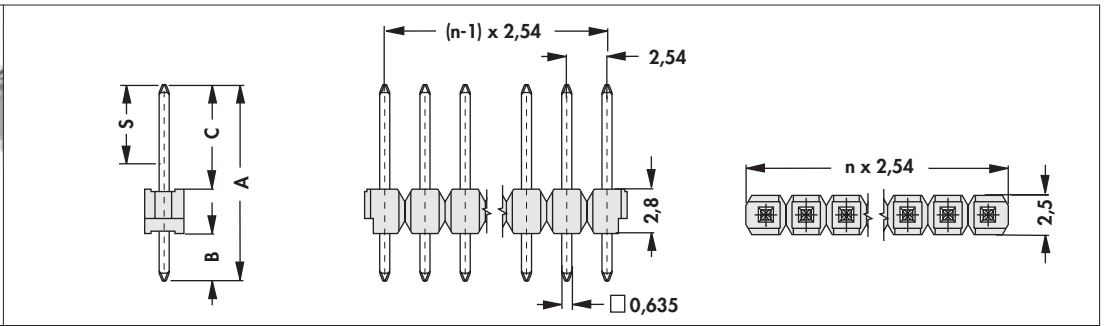
Hole diameter in PCB - hole structure acc. to DIN EN 60352-5



Male headers

Male connectors for LED applications


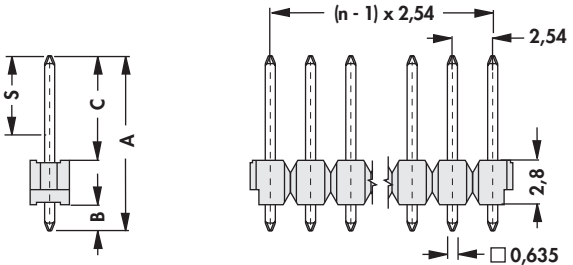
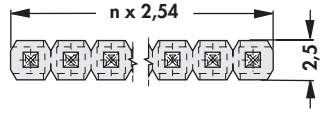
- every pin length is available upon request
- insulating body made of white plastic (nature)
- one row, □ 0.635 mm

| | | | | |
|---|--|---|--|---|
|  |  | | | |
| art. no. | dim. [mm] | | | |
| | A | B | C | S |
| SL 24 LED 097 ... | 9.7 | 3 | 3.9 | 4 |
| SL 24 LED 112 ... | 11.2 | | 5.4 | |
| SL 24 LED 124 ... | 12.4 | | 6.6 | |
| please indicate: | ... no. of contacts one row 1 - 36 | | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | |

Male headers

Male connectors for LED applications

- every pin length is available upon request
- insulating body made of white plastic (nature)
- one row, □ 0.635 mm

| art. no. | dim. [mm] | | | |
|-----------------------|-----------|---|-----|---|
| | A | B | C | S |
| SL 25 LED THR 097 ... | 9.7 | 2 | 4.9 | 4 |
| SL 25 LED THR 112 ... | 11.2 | | 6.4 | 5 |
| SL 25 LED THR 124 ... | 12.4 | | 7.6 | 5 |

please indicate: ... no. of contacts one row 1 - 36

... surface of contact
S = selective gold-plated
G = gold-plated
Z = tin-plated

Male headers

Standard, □ 0.5 mm

– any requested number of contact is available

| | | | | | | | | | |
|-------------------------|----------------------------|-----|-----|-----|-------------------------------|-----------|-----|-----|-----|
| | | | | | | | | | |
| art. no. | dim. [mm] | | | | art. no. | dim. [mm] | | | |
| | A | B | C | S | | A | B | C | S |
| SLY 1 081 ... | 8.1 | 3 | 3.6 | 3.0 | SLY 1 104 ... | 10.4 | 3 | 5.9 | 3.5 |
| SLY 1 085 ... | 8.5 | | 4.0 | | SLY 1 139 ... | 13.9 | | 9.4 | |
| SLY 1 098 ... | 9.8 | | 5.3 | 3.5 | | | | | |
| | | | | | | | | | |
| art. no. | dim. [mm] | | | | art. no. | dim. [mm] | | | |
| | A | B | C | S | | A | B | C | S |
| SLY 2 081 ... | 8.1 | 3 | 3.6 | 3.0 | SLY 2 104 ... | 10.4 | 3 | 5.9 | 3.5 |
| SLY 2 085 ... | 8.5 | | 4.0 | | SLY 2 139 ... | 13.9 | | 9.4 | |
| SLY 2 098 ... | 9.8 | | 5.3 | 3.5 | | | | | |
| | | | | | | | | | |
| art. no. | dim. [mm] | | | | art. no. | dim. [mm] | | | |
| | A | B | C | S | | A | B | C | |
| SLY 3 035 ... | 1.5 | 2.8 | 3.5 | 3.5 | SLY 3 082 ... G | 1.5 | 2.8 | 8.2 | |
| SLY 3 041 ... | | | 4.1 | | SLY 3 082 ... Z | | | | |
| | | | | | | | | | |
| art. no. | dim. [mm] | | | | art. no. | dim. [mm] | | | |
| | A | B | C | S | | A | B | C | |
| SLY 4 035 ... | 1.5 | 2.8 | 3.5 | 3.5 | SLY 4 082 ... G | 1.5 | 2.8 | 8.2 | |
| SLY 4 041 ... G | | | 4.1 | | SLY 4 082 ... Z | | | | |
| SLY 4 041 ... Z | | | — | | | | | | |
| please indicate: | ... no. of contacts | | | | ... surface of contact | | | | |
| | one row 1 - 50 | | | | S = selective gold-plated | | | | |
| | two rows 4 - 100 | | | | G = gold-plated | | | | |
| | | | | | Z = tin-plated | | | | |


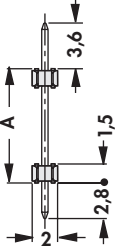
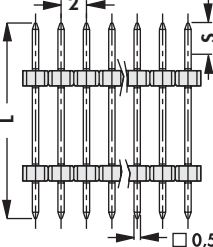
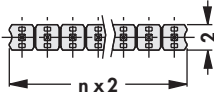
A
B
C
D
E
F
G
H
I
K
L
M
N

Male headers


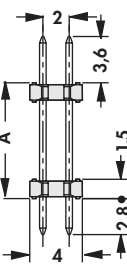
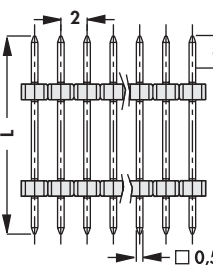
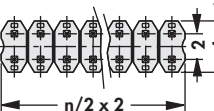
Design, matching for BLY ... → G 87

- are used for interconnections of stacked PCBs
- within the total length of the pin the insulator position can be changed as required ... **Design specification-sheet**
- **separable!** any requested number of contact can be delivered

– one row, □ 0.5 mm

| | | | | |
|---|---|--|---|--|
|  |  |  |  | |
| art. no. | dim. [mm] | | | |
| | A | L | S | |
| SLY 5 040 ... | 4.0 | 10.4 | 3.5 | |
| SLY 5 075 ... | 7.5 | 13.9 | | |
| SLY 5 081 ... G | 8.1 | 14.5 | — | |
| SLY 5 081 ... Z | | | | |
| SLY 5 122 ... G | 12.2 | 18.6 | | |
| SLY 5 122 ... Z | | | | |
| please indicate: | ... no. of contacts one row 1 - 50 | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | | |

– two rows, □ 0.5 mm

| | | | | |
|---|---|--|---|--|
|  |  |  |  | |
| art. no. | dim. [mm] | | | |
| | A | L | S | |
| SLY 6 040 ... | 4.0 | 10.4 | 3.5 | |
| SLY 6 075 ... | 7.5 | 13.9 | | |
| SLY 6 081 ... G | 8.1 | 14.5 | — | |
| SLY 6 081 ... Z | | | | |
| SLY 6 122 ... G | 12.2 | 18.6 | | |
| SLY 6 122 ... Z | | | | |
| please indicate: | ... no. of contacts two rows 2 - 100 | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | | |

Design specification for connectors, grid spacing 2 mm

date: _____
 pieces per order: _____
 company: _____
 name, dept.: _____
 town: _____
 street: _____
 fax: _____
 signature: _____

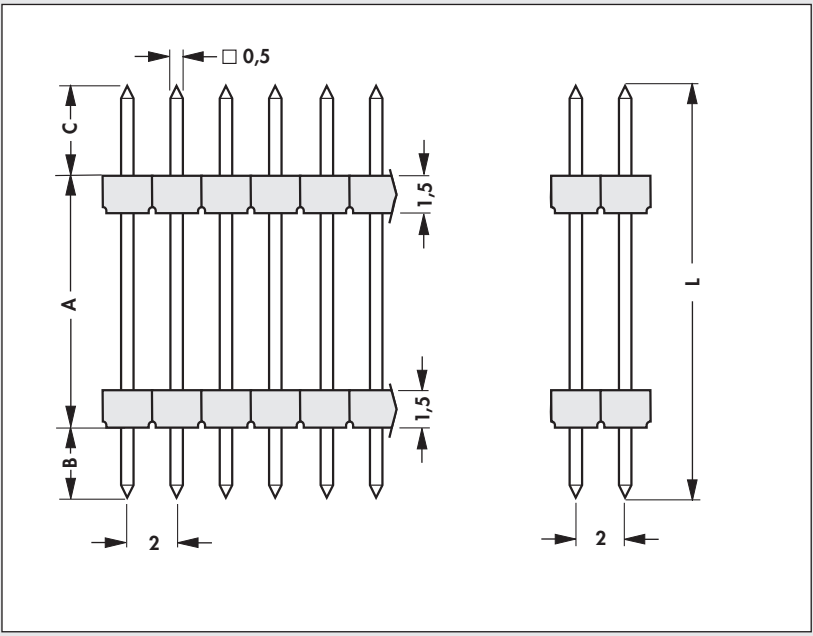
- inquiry
- order

surface finish

- selective gold-plated
- gold-plated
- tin-plated

one row 1 - 50 contacts possible
 two rows 2 - 100 contacts possible

number of contacts



dimensions:

L

A

B

C

L = total contact length
A = distance between PCBs
B = solder side
C = insertion side

A

Male headers

B

Turned precision male contacts

- suitable for **BLY 10 SHK 14 02 G** → G 88
- signal and high-power contacts
- contacts gold-plated
- other number of contacts / contact surface upon request

C

D

| | | |
|----------------------------|-----------------|---------------------|
| | | |
| art. no. | signal contacts | high-power contacts |
| SLY 13 SHK 14 02 G | 12 | 2 |
| surface of contact: | gold-plated | |
| | | |
| art. no. | signal contacts | high-power contacts |
| SLY 14 SHK 14 02 G | 12 | 2 |
| surface of contact: | gold-plated | |

E

F

G

H

I

K

L

M

N


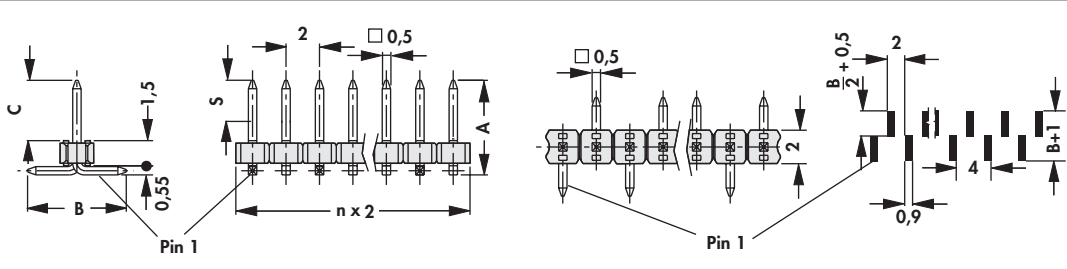
G 41

Technical data

→ G 101 – 107

Male headers

□ 0.5 mm

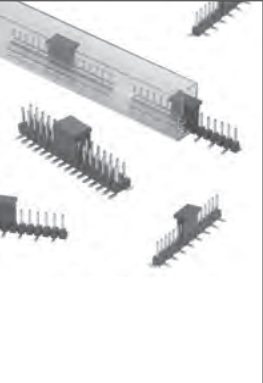
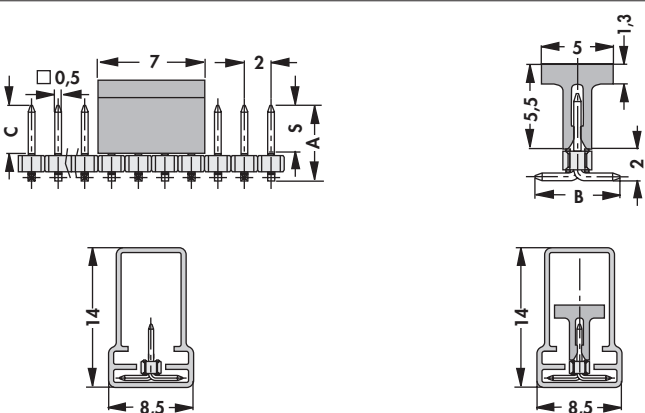
| art. no. | dim. [mm] | | | |
|-------------------|-----------|-----|-----|-----|
| | A | B | C | S |
| SLY 7 SMD 036 ... | 5.6 | 6.3 | 3.6 | 3.0 |
| SLY 7 SMD 045 ... | 6.5 | 4.6 | 4.5 | 3.5 |
| SLY 7 SMD 062 ... | 8.2 | | 6.2 | |

please indicate: ... no. of contacts one row 4 - 20 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated ... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (650pcs/reel)

... packing (option) - additions:
 SLY 7 SMD 036-045 ... B TR: 4-15 contacts


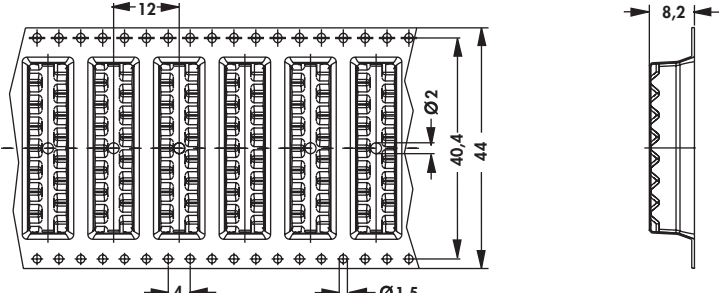
Option for automatic assembly

- reel diameter Ø 330 mm

... SM SLY 7 SMD ... SM

... B SM SLY 7 SMD ... B SM

... B TR SLY 7 SMD 036-045 ... B TR

A
B
C
D
E
F
G
H
I
K
L
M
N

A

Male headers
□ 0.5 mm

| | | | | |
|--------------------------|--|-----|--|-----|
| | | | | |
| art. no. | dim. [mm] | | | |
| | A | B | C | S |
| SLY 8 SMD 036 ... | 5.6 | 8.5 | 3.6 | 3.0 |
| SLY 8 SMD 045 ... | 6.5 | 6.5 | 4.5 | 3.5 |
| SLY 8 SMD 062 ... | 8.2 | | 6.2 | |
| please indicate: | ... no. of contacts two rows 4 - 40 | | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | |
| | | | ... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (650pcs/reel) | |

... packing (option) - additions:
SLY 8 SMD ... SM; ... B SM: 6-40 contacts
SLY 8 SMD 036-045 ... B TR: 6-30 contacts
Option for automatic assembly


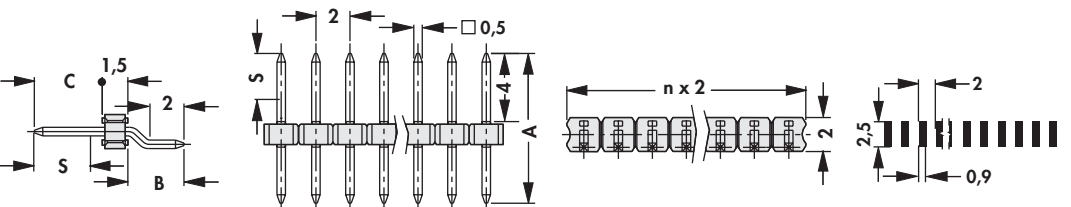
 – reel diameter \varnothing 330 mm

| | | |
|-----------------|-----------------------------------|--|
| | | |
| ... SM | SLY 8 SMD ... SM | |
| ... B SM | SLY 8 SMD ... B SM | |
| | SLY 8 SMD 036-045 ... B TR | |

N

Male headers

□ 0.5 mm


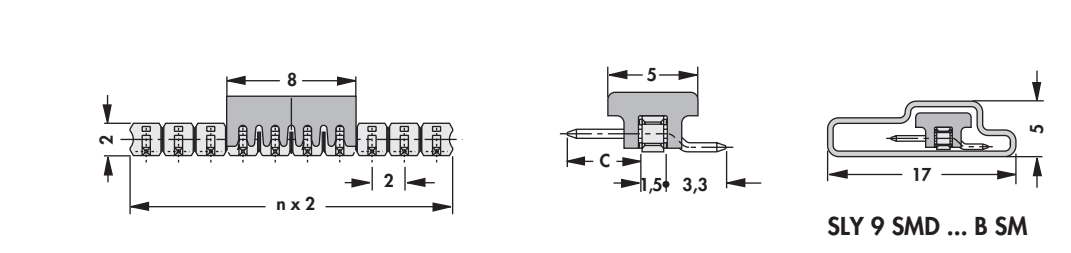



| art. no. | dim. [mm] | | | |
|-------------------|-----------|-----|-----|-----|
| | A | B | C | S |
| SLY 9 SMD 040 ... | 8.8 | 3.3 | 4.0 | 3.5 |
| SLY 9 SMD 055 ... | 10.3 | | 5.5 | |

please indicate:

- ... no. of contacts one row 2 - 20
- ... surface of contact
 - S = selective gold-plated
 - G = gold-plated
 - Z = tin-plated
- ... packing (optional)
 - B SM = pick and place pad and bar magazine

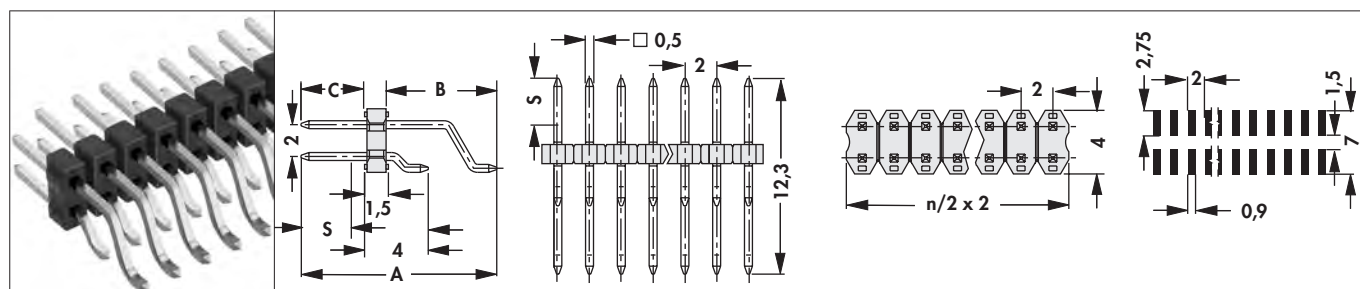
Option for automatic assembly

... B SM

SLY 9 SMD ... B SM

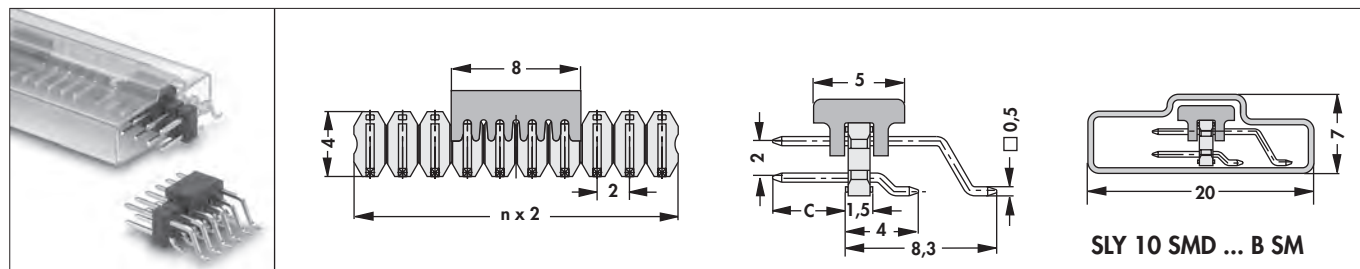
A

Male headers
□ 0.5 mm


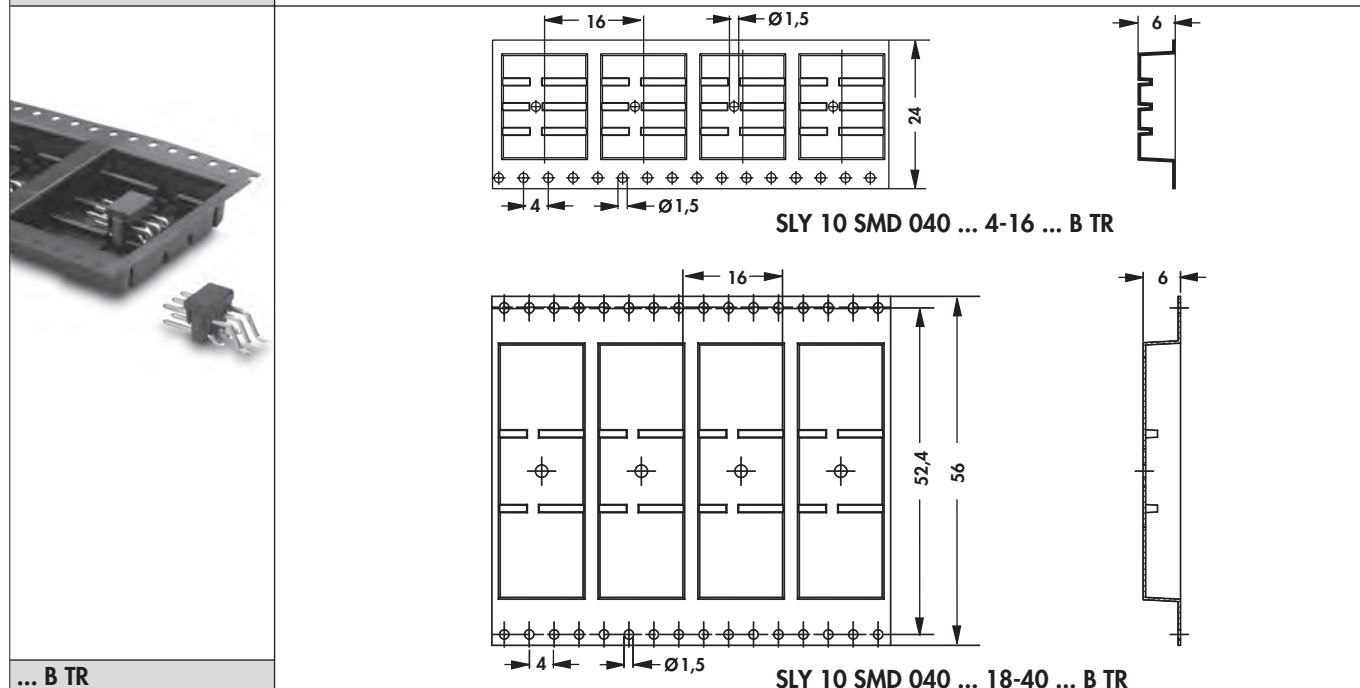
| art. no. | dim. [mm] | | | |
|---------------------------|---|---|---|-----|
| | A | B | C | S |
| SLY 10 SMD 040 ... | 12.3 | 6.8 | 4 | 3.5 |
| please indicate: | ... no. of contacts two rows 4 - 40 | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | ... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (700pcs/reel) | |

Option for automatic assembly

– reel diameter Ø 330 mm



... B SM

SLY 10 SMD ... B SM


... B TR

SLY 10 SMD 040 ... 4-16 ... B TR
SLY 10 SMD 040 ... 18-40 ... B TR

N

G 45

Technical data

→ G 101 - 107

Male headers

Design, matching for BLY ... → G 87

- are used to connect overlying PCBs
- within the total length of the pin the insulating body is variable upon request
- **separable!** every requested number of contact can be delivered

- one row, □ 0.5 mm

| art. no. | dim. [mm] A | art. no. | dim. [mm] A | art. no. | dim. [mm] A |
|---------------------------|----------------|---------------------------|----------------|---------------------------|----------------|
| SLY 11 SMD 051 ... | 5.1 | SLY 11 SMD 092 ... | 9.2 | SLY 11 SMD 133 ... | 13.3 |

please indicate:

| | |
|---------------------------------------|--|
| ... no. of contacts one row 4 - 20 | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated |
|---------------------------------------|--|

- two rows, □ 0.5 mm

| art. no. | dim. [mm] A | art. no. | dim. [mm] A | art. no. | dim. [mm] A |
|---------------------------|----------------|---------------------------|----------------|---------------------------|----------------|
| SLY 12 SMD 051 ... | 5.1 | SLY 12 SMD 092 ... | 9.2 | SLY 12 SMD 133 ... | 13.3 |


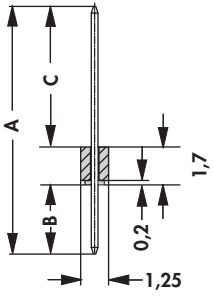
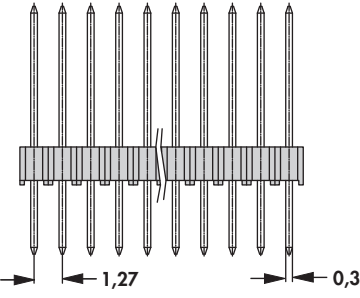
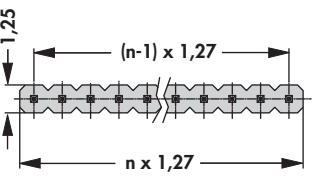
please indicate:

| | |
|--|--|
| ... no. of contacts two rows 4 - 40 | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated |
|--|--|

Male headers


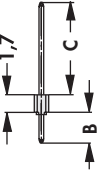
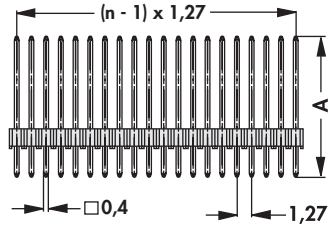
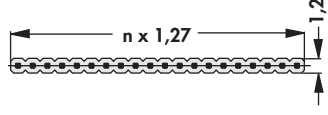
Pin cross section □ 0.3 mm, straight, slim insulating body

- suitable for female header **BLM ...** → G 93
- one row 1-20 contacts

|  |  |  |  | | | | |
|---|---|--|---|--|-----------|-----|------|
| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
| | A | B | C | | A | B | C |
| SLM N 1 063 ... | 11.1 | 3.1 | 6.3 | SLM N 11 063 ... | 12.8 | 4.8 | 6.3 |
| SLM N 1 092 ... | 14.0 | | 9.2 | SLM N 11 117 ... | 18.2 | | 11.7 |
| SLM N 1 117 ... | 16.5 | | 11.7 | | | | |
| please indicate: | ... no. of contacts one row 1 - 20 | | | ... surface of contact G = gold-plated Z = tin-plated | | | |

Pin cross section □ 0.4 mm, straight, slim insulating body

- matching for female header **BLM ...** → G 93
- one row 1-20 contacts

|  |  |  |  | | | | |
|---|---|--|---|--|-----------|-----|------|
| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
| | A | B | C | | A | B | C |
| SLV N 1 055 ... | 9.7 | 2.5 | 5.5 | SLV N 11 055 ... | 12.2 | 5.0 | 5.5 |
| SLV N 1 080 ... | 12.2 | | 8.0 | SLV N 11 080 ... | 14.7 | | 8.0 |
| SLV N 1 105 ... | 14.7 | | 10.5 | SLV N 11 105 ... | 17.2 | | 10.5 |
| SLV N 1 130 ... | 17.2 | | 13.0 | | | | |
| please indicate: | ... no. of contacts one row 1 - 20 | | | ... surface of contact G = gold-plated Z = tin-plated | | | |

Male headers

Pin cross section □ 0.4 mm, straight

- suitable for female header **BLM ...** → G 93
- one row 1-36 contacts

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|-------------------------|--|-----|------|--|-----------|-----|------|
| | A | B | C | | A | B | C |
| SLV W 1 036 ... | 7.8 | 2.5 | 3.6 | SLV W 1 130 ... | 17.2 | 2.5 | 13.0 |
| SLV W 1 055 ... | 9.7 | | 5.5 | SLV W 11 055 ... | 12.2 | 5.0 | 5.5 |
| SLV W 1 080 ... | 12.2 | | 8.0 | SLV W 11 080 ... | 14.7 | | 8.0 |
| SLV W 1 105 ... | 14.7 | | 10.5 | SLV W 11 105 ... | 17.2 | | 10.5 |
| please indicate: | ... no. of contacts one row 1 - 36 | | | ... surface of contact G = gold-plated Z = tin-plated | | | |


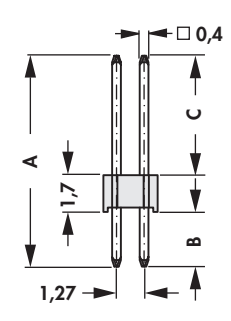
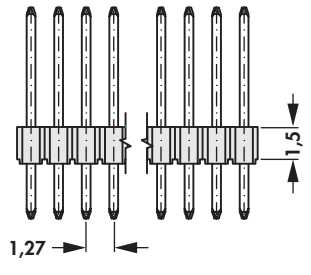
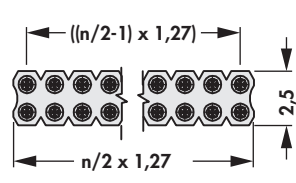
- matching for female header **BLM ...** → G 93
- two rows 4-72 contacts
- grid spacing 1.27 x 2.54 mm

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|-------------------------|---|-----|------|--|-----------|-----|------|
| | A | B | C | | A | B | C |
| SLV W 2 036 ... | 7.8 | 2.5 | 3.6 | SLV W 2 130 ... | 17.2 | 2.5 | 13.0 |
| SLV W 2 055 ... | 9.7 | | 5.5 | SLV W 22 055 ... | 12.2 | 5.0 | 5.5 |
| SLV W 2 080 ... | 12.2 | | 8.0 | SLV W 22 080 ... | 14.7 | | 8.0 |
| SLV W 2 105 ... | 14.7 | | 10.5 | SLV W 22 105 ... | 17.2 | | 10.5 |
| please indicate: | ... no. of contacts two rows 4 - 72 | | | ... surface of contact G = gold-plated Z = tin-plated | | | |

Male headers

Straight, pin cross section □ 0.4 mm

- matching for female header **BLV 2 ...** → G 94
- two rows 4-72 contacts
- grid spacing **1.27 x 1.27 mm**

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|------------------------|-----------|-----|-----|------------------------|-----------|-----|------|
| | A | B | C | | A | B | C |
| SLV W 4 036 ... | 7.8 | 2.5 | 3.6 | SLV W 4 105 ... | 14.7 | 2.5 | 10.5 |
| SLV W 4 055 ... | 9.7 | | 5.5 | SLV W 4 130 ... | 17.2 | | 13.0 |
| SLV W 4 080 ... | 12.2 | | 8.0 | | | | |

please indicate: ... no. of contacts
two rows 4 - 72

... surface of contact
G = gold-plated
Z = tin-plated

Male headers

Pin cross section matching for BLM ... → G 93,
 □ 0.4 mm, 90° angled, expanded insulating body

– one row 1-36 contacts

| | | | |
|---|----------------|---------------------------|----------------|
| | | | |
| art. no. | dim. [mm] C | art. no. | dim. [mm] C |
| SLV W 1 KA 030 ... | 3.0 | SLV W 1 KA 080 ... | 8.0 |
| SLV W 1 KA 055 ... | 5.5 | SLV W 1 KA 105 ... | 10.5 |
| please indicate: ... no. of contacts one row 1 - 36 ... surface of contact G = gold-plated Z = tin-plated | | | |


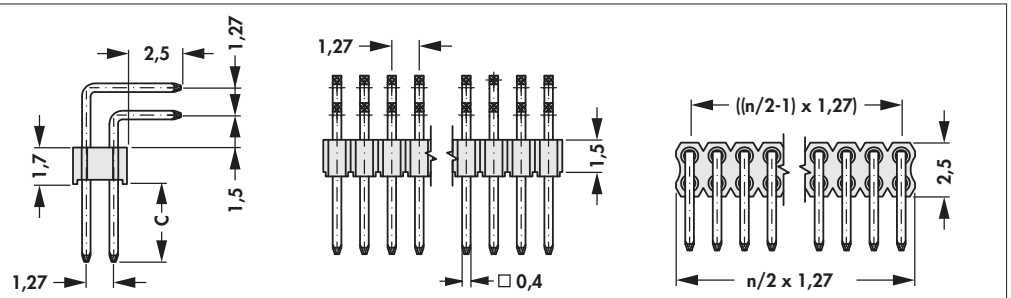
- two rows 6-72 contacts
- grid spacing 1.27 x 2.54 mm
- **packing in a bar magazine**
- **VPE** = packing unit (pieces/tube)
- preferred number of contacts, others upon request

| | | | | | | | |
|--|-----------------|--------------|----------------|------------------------------|-----------------|--------------|----------------|
| | | | | | | | |
| art. no. | no. of contacts | packing unit | dim. [mm] C | art. no. | no. of contacts | packing unit | dim. [mm] C |
| SLV W 2 KA 030 10 ... | 10 | 78 | 3.0 | SLV W 2 KA 054 10 ... | 10 | 78 | 5.4 |
| SLV W 2 KA 030 14 ... | 14 | 55 | | SLV W 2 KA 054 14 ... | 14 | 55 | |
| SLV W 2 KA 030 16 ... | 16 | 50 | | SLV W 2 KA 054 16 ... | 16 | 50 | |
| SLV W 2 KA 030 20 ... | 20 | 40 | | SLV W 2 KA 054 20 ... | 20 | 40 | |
| SLV W 2 KA 030 26 ... | 26 | 31 | | SLV W 2 KA 054 26 ... | 26 | 31 | |
| SLV W 2 KA 030 30 ... | 30 | 27 | | SLV W 2 KA 054 30 ... | 30 | 27 | |
| SLV W 2 KA 030 34 ... | 34 | 24 | | SLV W 2 KA 054 34 ... | 34 | 24 | |
| SLV W 2 KA 030 40 ... | 40 | 20 | | SLV W 2 KA 054 40 ... | 40 | 20 | |
| SLV W 2 KA 030 50 ... | 50 | 16 | | SLV W 2 KA 054 50 ... | 50 | 16 | |
| SLV W 2 KA 030 72 ... | 72 | 11 | | SLV W 2 KA 054 72 ... | 72 | 11 | |
| please indicate: ... surface of contact G = gold-plated Z = tin-plated | | | | | | | |

Male headers

Angled, pin cross section $\square 0,4$ mm

- matching for female header **BLV 2 ...** → G 94
- two rows 4-72 contacts
- **grid spacing 1.27 x 1.27 mm**
- preferred number of contacts, others upon request

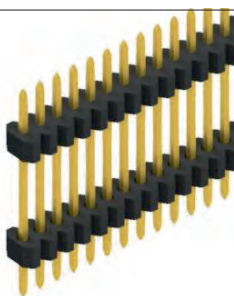
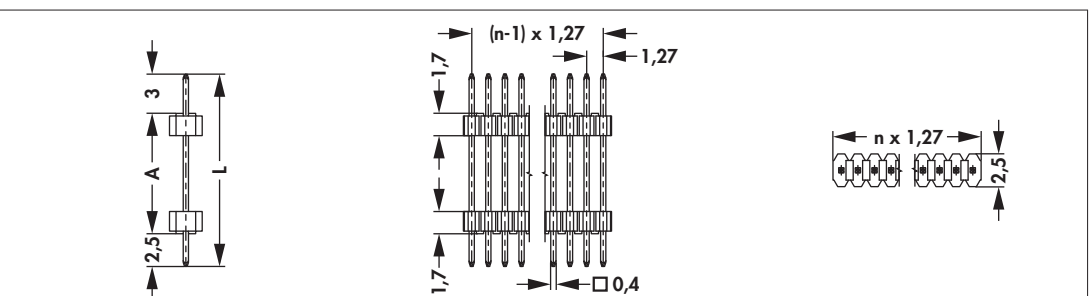
| art. no. | no. of contacts | dim. [mm] C | art. no. | no. of contacts | dim. [mm] C |
|-----------------------|-----------------|----------------|-----------------------|-----------------|----------------|
| SLV W 4 KA 036 10 ... | 10 | 3.6 | SLV W 4 KA 060 10 ... | 10 | 6.0 |
| SLV W 4 KA 036 14 ... | 14 | | SLV W 4 KA 060 14 ... | 14 | |
| SLV W 4 KA 036 16 ... | 16 | | SLV W 4 KA 060 16 ... | 16 | |
| SLV W 4 KA 036 20 ... | 20 | | SLV W 4 KA 060 20 ... | 20 | |
| SLV W 4 KA 036 26 ... | 26 | | SLV W 4 KA 060 26 ... | 26 | |
| SLV W 4 KA 036 30 ... | 30 | | SLV W 4 KA 060 30 ... | 30 | |
| SLV W 4 KA 036 34 ... | 34 | | SLV W 4 KA 060 34 ... | 34 | |
| SLV W 4 KA 036 40 ... | 40 | | SLV W 4 KA 060 40 ... | 40 | |
| SLV W 4 KA 036 50 ... | 50 | | SLV W 4 KA 060 50 ... | 50 | |
| SLV W 4 KA 036 72 ... | 72 | | SLV W 4 KA 060 72 ... | 72 | |

please indicate: ... surface of contact
G = gold-plated
Z = tin-plated

Sandwich-design

- for interconnections of stacked PCBs
- within the total length of the pin the insulator position can be changed as required
- **separable!** any requested number of contact can be delivered

– one row, $\square 0.4$ mm

| art. no. | dim. [mm] | |
|-----------------|-----------|------|
| | A | L |
| SLV W 6 092 ... | 9.2 | 14.7 |
| SLV W 6 117 ... | 11.7 | 17.2 |

please indicate: ... no. of contacts one row 1 - 36 ... surface of contact
G = gold-plated
Z = tin-plated

Male headers

- two rows, □ 0.4 mm
- grid 1.27 x 1.27 mm

| | | | |
|-------------------------|---|--|--|
| | | | |
| art. no. | dim. [mm] | | |
| | A | L | |
| SLV W 7 092 ... | 9.2 | 14.7 | |
| SLV W 7 117 ... | 11.7 | 17.2 | |
| please indicate: | ... no. of contacts two rows 4 - 72 | ... surface of contact G = gold-plated Z = tin-plated | |

- two rows, □ 0.4 mm
- grid 1.27 x 2.54 mm

| | | | |
|-------------------------|---|--|--|
| | | | |
| art. no. | dim. [mm] | | |
| | A | L | |
| SLV W 8 092 ... | 9.2 | 14.7 | |
| SLV W 8 117 ... | 11.7 | 17.2 | |
| please indicate: | ... no. of contacts two rows 4 - 72 | ... surface of contact G = gold-plated Z = tin-plated | |

A

Male headers
Pin cross section □ 0.4 mm, expanded insulating body

- suitable for female header **BLM ...** → G 93
- one row 4-20 contacts

| | | | | | | | |
|--|-----------|--|----------------------------|----------------------------|---|---|---|
| | | | | | | | |
| art. no. | dim. [mm] | | art. no. | dim. [mm] | | | |
| SLV W 1 SMD 048 ... | A | B | C | SLV W 1 SMD 073 ... | A | B | C |
| | | | | | | | |
| art. no. | dim. [mm] | | art. no. | dim. [mm] | | | |
| SLV W 9 SMD 102 ... | A | | SLV W 9 SMD 127 ... | A | | | |
| please indicate: | | | | | | | |
| ... no. of contacts one row 4 - 20 | | ... surface of contact G = gold-plated Z = tin-plated | | | | | |

G

H

I

K

L

M

N

Male headers

- suitable for female header **BLM ...** → G 93
- two rows 4-40 contacts
- grid spacing **1.27 x 2.54 mm**

| | | | | | | | |
|--|-------------------------------------|------------|------------|-----------------------------|-------------------------------------|------------|------------|
| | | | | | | | |
| <p>art. no.</p> | <p>dim. [mm]</p> <p>A B C</p> | | | <p>art. no.</p> | <p>dim. [mm]</p> <p>A B C</p> | | |
| <p>SLV W 2 SMD 048 ...</p> | <p>8.2</p> | <p>6.6</p> | <p>4.8</p> | <p>SLV W 2 SMD 073 ...</p> | <p>10.7</p> | <p>6.6</p> | <p>7.3</p> |
| | | | | | | | |
| <p>art. no.</p> | <p>dim. [mm]</p> <p>A</p> | | | <p>art. no.</p> | <p>dim. [mm]</p> <p>A</p> | | |
| <p>SLV W 11 SMD 102 ...</p> | <p>10.2</p> | | | <p>SLV W 11 SMD 127 ...</p> | <p>12.7</p> | | |
| <p>please indicate: ... no. of contacts two rows 4 - 40 ... surface of contact G = gold-plated Z = tin-plated</p> | | | | | | | |

Male headers

- matching for female header **BLV 2 ...** → G 94
- two rows 4-40 contacts
- grid spacing **1.27 x 1.27 mm**

| | | | | | | | |
|----------------------------|--|-----|---|----------------------------|--|-----|-----|
| | | | | | | | |
| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
| | A | B | C | | A | B | C |
| SLV W 4 SMD 048 ... | 8.2 | 5.3 | 4.8 | SLV W 4 SMD 073 ... | 10.7 | 5.3 | 7.3 |
| please indicate: | ... no. of contacts two rows 4 - 40 | | ... surface of contact G = gold-plated Z = tin-plated | | ... packing (optional) B TR = pick and place pad and tape and reel (250pcs/reel) | | |

... packing (option) - additions:

SLV W 4 SMD ... B TR: 4-12 contacts

Packaging options pick and place pad in bar magazine "... B SM" and pick and place pad in tape & reel "... B TR" on request.

Option for automatic assembly

| | |
|----------|--|
| | |
| ... B TR | |

- matching for female header **BLV 2 ...** → G 94
- two rows 4-40 contacts
- grid spacing **1.27 x 1.27 mm**

| | | | | |
|-----------------------------|--|--|---|-----------|
| | | | | |
| art. no. | dim. [mm] | | art. no. | dim. [mm] |
| | A | | | A |
| SLV W 10 SMD 102 ... | 10.2 | | SLV W 10 SMD 127 ... | 12.7 |
| please indicate: | ... no. of contacts two rows 4 - 40 | | ... surface of contact G = gold-plated Z = tin-plated | |

Male headers

Pin cross section □ 0.4 mm, expanded insulating body

- matching for female header **BLM ...** → G 93
- one row 2-20 contacts

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|----------------------------|--|---|--|----------------------------|--|---|-----|
| | A | B | C | | A | B | C |
| SLV W 3 SMD 048 ... | 9.5 | 3 | 4.8 | SLV W 3 SMD 073 ... | 12.0 | 3 | 7.3 |
| please indicate: | ... no. of contacts one row 2 - 20 | | ... surface of contact G = gold-plated Z = tin-plated | | ... packing (optional) SM = bar magazine | | |

... packing (option) - additions:

SLV W 3 SMD ... SM: 4-20 contacts

Packaging options pick and place pad in bar magazine "... B SM" and pick and place pad in tape & reel "... B TR" on request.

Option for automatic assembly

| | | |
|--------|------------------------|------------------------|
| | | |
| ... SM | SLV W 3 SMD 048 ... SM | SLV W 3 SMD 073 ... SM |

- two rows 4-40 contacts


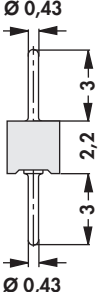
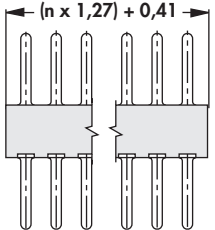
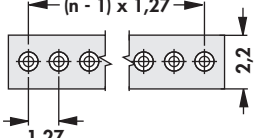

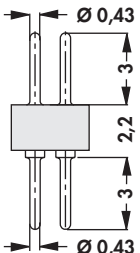
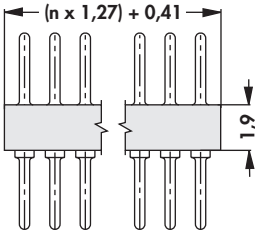
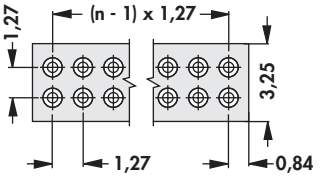

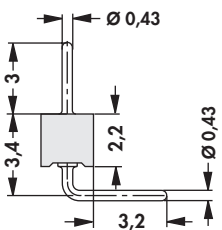
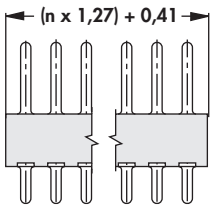
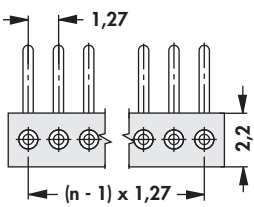

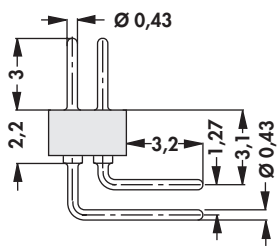
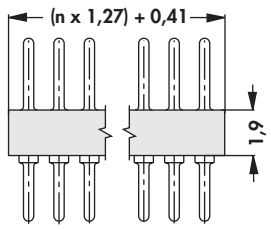
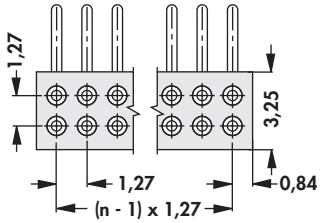
| art. no. | dim. [mm] | | |
|----------------------------|---|-----|--|
| | A | B | C |
| SLV W 5 SMD 036 ... | 11.5 | 6.2 | 3.6 |
| please indicate: | ... no. of contacts two rows 4 - 40 | | ... surface of contact G = gold-plated Z = tin-plated |

Packaging options pick and place pad in bar magazine "... B SM" and pick and place pad in tape & reel "... B TR" on request.

Male headers

Precision contacts, solder and plug pins, Ø 0.43 mm

- turned precision contacts, less space required on PCB
- other number of contacts on request

| | | | |
|---|---|--|---|
|  |  |  |  |
| art. no. SLR 1 025 ... | no. of contacts 25 | art. no. SLR 1 050 ... | no. of contacts 50 |
| please indicate: ... surface of contact G = gold-plated Z = tin-plated | | | |
|  |  |  |  |
| art. no. SLR 2 050 G | no. of contacts 50 | | |
|  |  |  |  |
| art. no. SLR 3 025 G | no. of contacts 25 | art. no. SLR 3 050 G | no. of contacts 50 |
|  |  |  |  |
| art. no. SLR 4 050 G | no. of contacts 50 | art. no. SLR 4 100 G | no. of contacts 100 |
| surface of contact: | | gold-plated | |

Male headers

Precision contacts, solder and plug pins Ø 0.43 mm

- less space required on PCB
- other number of contacts on request

| | | | |
|----------------------------|------------------------|--|------------------------|
| | | | |
| <p>art. no.</p> | <p>no. of contacts</p> | | <p>no. of contacts</p> |
| <p>SLR 5 SMD 50 G</p> | <p>50</p> | | <p>50</p> |
| <p>surface of contact:</p> | <p>gold-plated</p> | | |

A

Customer specified male and female headers

We manufacture male and female headers for your specific application.

All pin lengths from 7.5 to 45.3 mm for grid 2.54 mm and 7.5 to 30 mm for grid 2.00 mm available on request.

The insulator can be mounted at any requested position on the full length of the pin.

Grid spacing insertion with selective gold-plated contacts on request.

B

C

D

E

F

G

H

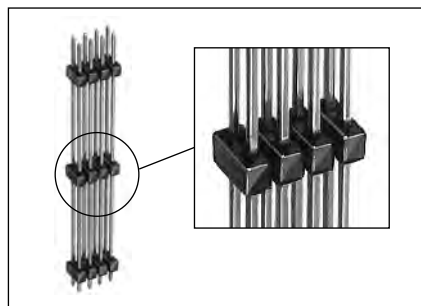
I

K

L

M

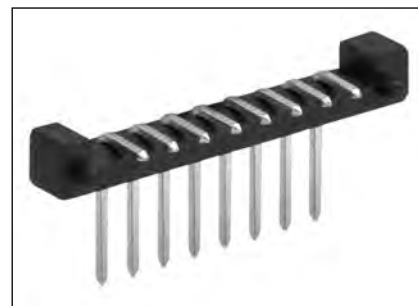
N



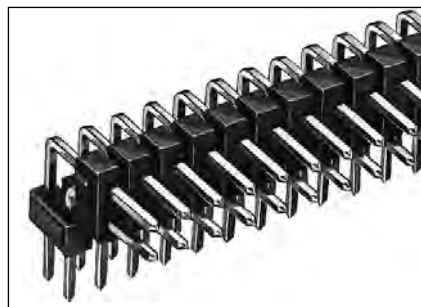
PCB connector,
extra long and additionally stabilized



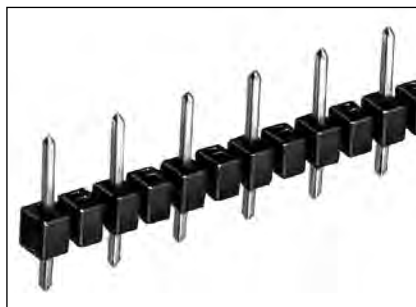
4-contact male header for THR-soldering;
grid 5.75 mm



8-contact male header with special
insulating body including locating pin



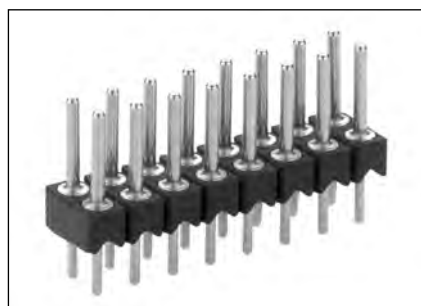
angled male header with two insulators



male header in 5.08 mm grid and
customised



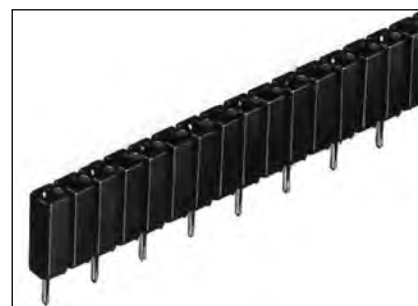
angled male and female header
1.27 mm grid, with customised
insulators



insulator body and precision contacts
according to customer's request



male header with various pin lengths



female header in 5.08 mm grid

Female headers

Precision contacts for pin cross section Ø 0.5 mm

| | | | | | | | | | | | |
|---|------------------------|--|-----------------------|--|--|---------------------|------------------------|----------------|------------------------|------------------|-----------------------|
| art. no. | | | art. no. | | | | | | | | |
| MK 01 ... | | | MK 201 ... | | | | | | | | |
| art. no. | | | art. no. | | | | | | | | |
| MK 17 ... | | | MK 217 ... | | | | | | | | |
| art. no. | | | art. no. | | | | | | | | |
| MK 31 ... | | | MK 231 ... | | | | | | | | |
| art. no. | | | art. no. | | | | | | | | |
| MK 12 X 2 ... | | | MK 212 X 2 ... | | | | | | | | |
| <p>please indicate:</p> <table border="0"> <tr> <td>... no. of contacts</td> <td>... surface of contact</td> </tr> <tr> <td>one row 1 - 50</td> <td>G = gold-plated</td> </tr> <tr> <td>two rows 2 - 100</td> <td>Z = tin-plated</td> </tr> </table> | | | | | | ... no. of contacts | ... surface of contact | one row 1 - 50 | G = gold-plated | two rows 2 - 100 | Z = tin-plated |
| ... no. of contacts | ... surface of contact | | | | | | | | | | |
| one row 1 - 50 | G = gold-plated | | | | | | | | | | |
| two rows 2 - 100 | Z = tin-plated | | | | | | | | | | |

| | | | | | | | | | |
|---|------------------------|-----------------------|----------------|---------------------|------------------------|----------------|------------------------|------------------|-----------------------|
| | | | | | | | | | |
| art. no. | dim. [mm] X | art. no. | dim. [mm] X | | | | | | |
| MK 13 X 1 ... | 5.9 | MK 213 X 1 ... | 5.9 | | | | | | |
| MK 13 X 2 ... | 8.9 | MK 213 X 2 ... | 8.9 | | | | | | |
| <p>please indicate:</p> <table border="0"> <tr> <td>... no. of contacts</td> <td>... surface of contact</td> </tr> <tr> <td>one row 1 - 50</td> <td>G = gold-plated</td> </tr> <tr> <td>two rows 2 - 100</td> <td>Z = tin-plated</td> </tr> </table> | | | | ... no. of contacts | ... surface of contact | one row 1 - 50 | G = gold-plated | two rows 2 - 100 | Z = tin-plated |
| ... no. of contacts | ... surface of contact | | | | | | | | |
| one row 1 - 50 | G = gold-plated | | | | | | | | |
| two rows 2 - 100 | Z = tin-plated | | | | | | | | |
| contact spring: | | gold-plated | | | | | | | |

A

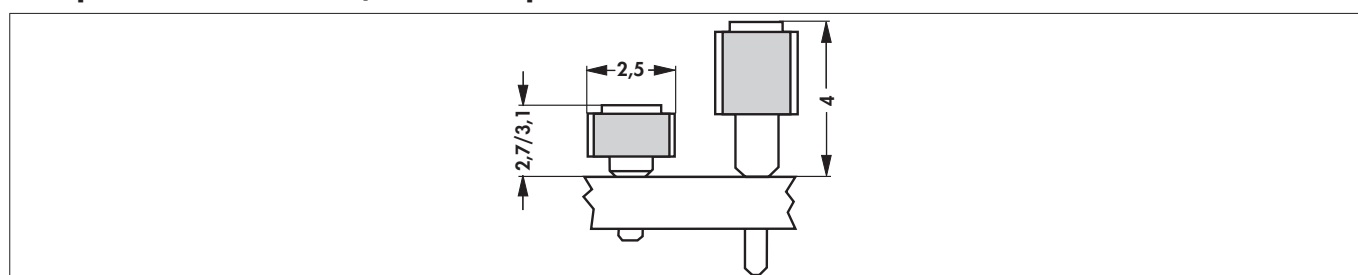
Female headers
Precision contacts for pin cross section \varnothing 0.5 mm

| | | | |
|---|--|---|--|
| art. no. MK 06 ... | | <p>Dimensions: \varnothing 1,8, 0,8, 3,3, \varnothing 0,5, 4,9, 6,2</p> | |
| art. no. MK 07 ... | | <p>Dimensions: 0,8, 2,5, \varnothing 1,8, 4,7, 3,3, 5,5, 17,9, \varnothing 1,32, 0,63</p> | art. no. MK 207 ... |
| please indicate: | | ... no. of contacts one row 1 - 50 two rows 2 - 100 | ... surface of contact G = gold-plated Z = tin-plated |

Low profile, less than 2.7/3.1 mm - with contact spring for pin cross section \varnothing 0.5 mm

 – solder pin \varnothing 0.76 mm


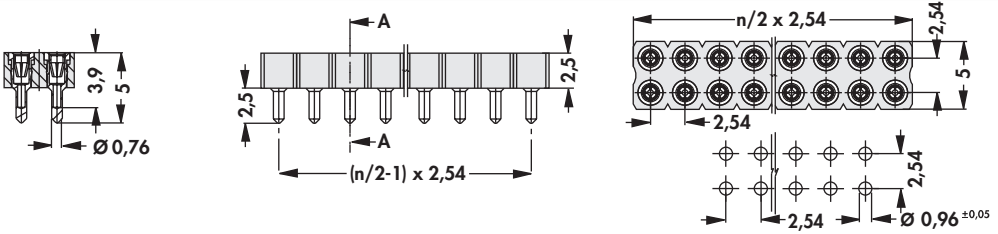
| | | | |
|--|--|--|---|
| art. no. MK LP 18 ... | | <p>Dimensions: 2,5, 0,52, \varnothing 1,83, 1,27, 2,7, 5, \varnothing 0,76, \varnothing 1,35</p> | art. no. MK LP 218 ... |
| art. no. MK LP 19 ... | | <p>Dimensions: 0,8, 2,5, \varnothing 1,83, 1,27, 3,1, 5,9, \varnothing 0,76, \varnothing 1,35</p> | art. no. MK LP 219 ... |
| please indicate: | | ... no. of contacts one row 1 - 50 two rows 4 - 100 | ... surface of contact G = gold-plated Z = tin-plated |
| contact spring: | | gold-plated | |

Low profile: 2.7/3.1 mm; standard profile: 4 mm


Female headers

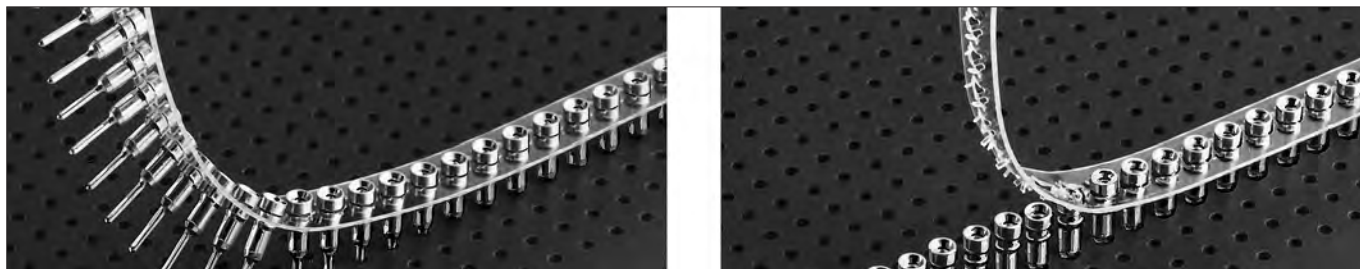
Precision contacts in THR-soldering technology for pin cross section Ø 0.5 mm

– THR: Through-Hole-Reflow-soldering technology (connector to be soldered with modified insert technique in Reflow-soldering method)

| | |
|---|---|
|  |  |
| <p>art. no.</p> | |
| <p>MK 228 THR ...</p> | |
| <p>please indicate:</p> | <p>... no. of contacts two rows 2 - 40</p> <p>... surface of contact G = gold-plated Z = tin-plated</p> |
| <p>contact spring:</p> | <p>gold-plated</p> |

Female headers

Peel-Off



- precision contacts are mounted in a temperature-resistant carrier strip which is removed after soldering
- special loadings upon request

| | | |
|--|---|--|
| art. no. PO A ... G | | |
| please indicate: ... no. of contacts from 2 pins to endless | | |
| contact sleeve: | gold-plated | |
| contact spring: | gold-plated | |
| annotation: | Technical data of carrier foil: max. tensile strength: 193 N/mm ² max. thermal expansion - longitudinal direction: 1.7x10 ⁻⁵ mm/°C melting point: 250°C | |

Female headers

Precision contacts on metal strip for pin cross section $\varnothing 0.5$ mm

| | | | |
|---|--|--|--|
| <p>art. no.</p> <p>SIL 1 ...</p> | | | |
| <p>art. no.</p> <p>SIL 2 ...</p> | | | |
| <p>art. no.</p> <p>SIL 3 ...</p> | | | |
| <p>please indicate: ... no. of contacts one row 2 - 100</p> | | <p>... surface of contact G = gold-plated Z = tin-plated</p> | |
| <p>contact spring:</p> | | <p>gold-plated</p> | |
| <p>annotation:</p> | | <p>carrier strip: brass</p> | |

A

Female headers

Stamped contact spring (fork contact)

– **separable!** any requested number of contact can be delivered

– for \square 0.635 mm pin cross section, straight

| | | | | | | | | | | | | | |
|--|---------------------|------------------------|--|--|--|---------------------|------------------------|--|----------------|------------------------|--|-----------------|-----------------------|
| art. no. BL 1 ... | | | | | | | | | | | | | |
| art. no. BL 2 ... | | | | | | | | | | | | | |
| <p>please indicate:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;"></td> <td style="width: 40%;">... no. of contacts</td> <td style="width: 40%;">... surface of contact</td> </tr> <tr> <td></td> <td>one row 1 - 36</td> <td>G = gold-plated</td> </tr> <tr> <td></td> <td>two rows 2 - 72</td> <td>Z = tin-plated</td> </tr> </table> | | | | | | ... no. of contacts | ... surface of contact | | one row 1 - 36 | G = gold-plated | | two rows 2 - 72 | Z = tin-plated |
| | ... no. of contacts | ... surface of contact | | | | | | | | | | | |
| | one row 1 - 36 | G = gold-plated | | | | | | | | | | | |
| | two rows 2 - 72 | Z = tin-plated | | | | | | | | | | | |

– for \square 0.635 mm pin cross section, angled

– **BL 4 ...:** packing (option) bar magazine (≥ 6 contacts)

| | | | | | | | | | | | | | |
|--|---------------------|------------------------|--|--|--|---------------------|------------------------|--|----------------|------------------------|--|-----------------|-----------------------|
| art. no. BL 3 ... | | | | | | | | | | | | | |
| art. no. BL 4 ... | | | | | | | | | | | | | |
| <p>please indicate:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;"></td> <td style="width: 40%;">... no. of contacts</td> <td style="width: 40%;">... surface of contact</td> </tr> <tr> <td></td> <td>one row 1 - 36</td> <td>G = gold-plated</td> </tr> <tr> <td></td> <td>two rows 2 - 72</td> <td>Z = tin-plated</td> </tr> </table> | | | | | | ... no. of contacts | ... surface of contact | | one row 1 - 36 | G = gold-plated | | two rows 2 - 72 | Z = tin-plated |
| | ... no. of contacts | ... surface of contact | | | | | | | | | | | |
| | one row 1 - 36 | G = gold-plated | | | | | | | | | | | |
| | two rows 2 - 72 | Z = tin-plated | | | | | | | | | | | |

G

H

I

K

L

M


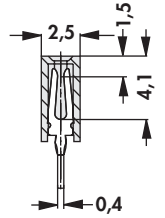
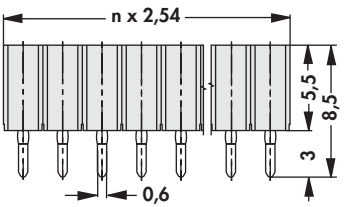
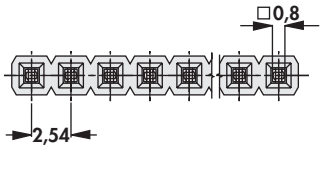

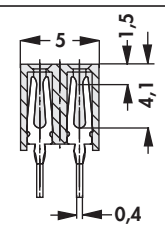
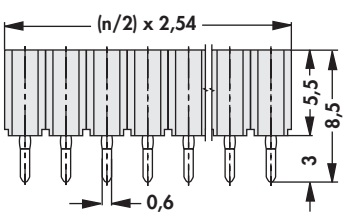
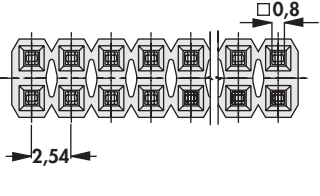
N

Female headers

Low profile, fork contact spring


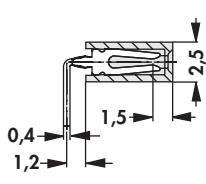
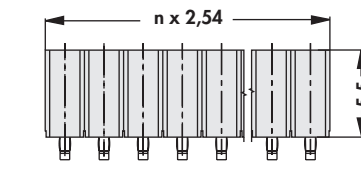
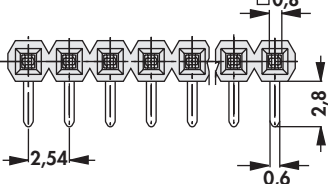

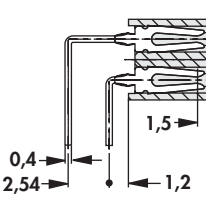
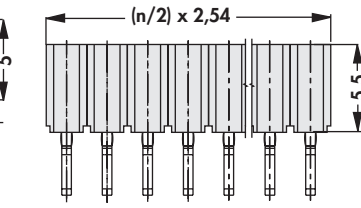
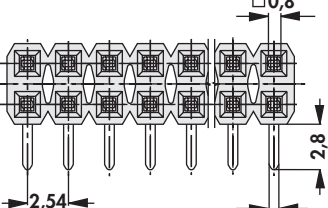
– **separable!** any requested number of contact can be delivered

– for \square 0.635 mm pin cross section, straight

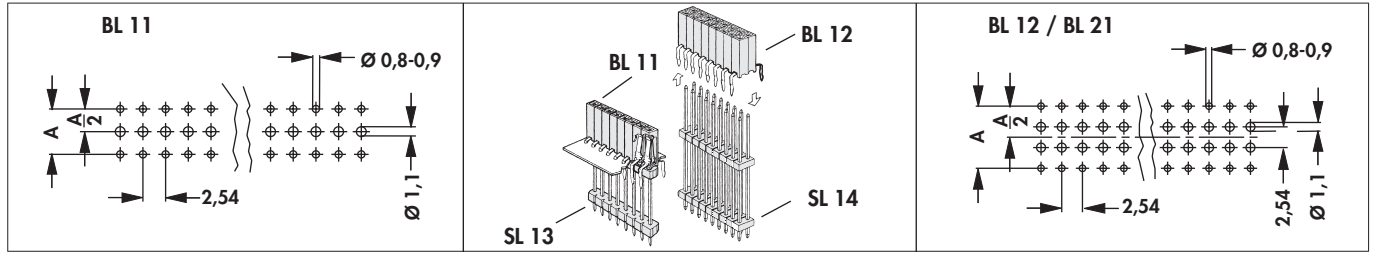
| | | | | | | | | | | | | | |
|---|---|---|--|---|----------------------------|-------------------------------|--|----------------|---------------------------|--|-----------------|----------------|--|
| art. no. BL LP 1 ... |  |  |  |  | | | | | | | | | |
| art. no. BL LP 2 ... |  |  |  |  | | | | | | | | | |
| <p>please indicate:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">... no. of contacts</td> <td style="width: 33%;">... surface of contact</td> <td style="width: 33%;"></td> </tr> <tr> <td>one row 1 - 36</td> <td>S = selective gold-plated</td> <td></td> </tr> <tr> <td>two rows 2 - 72</td> <td>Z = tin-plated</td> <td></td> </tr> </table> | | | | | ... no. of contacts | ... surface of contact | | one row 1 - 36 | S = selective gold-plated | | two rows 2 - 72 | Z = tin-plated | |
| ... no. of contacts | ... surface of contact | | | | | | | | | | | | |
| one row 1 - 36 | S = selective gold-plated | | | | | | | | | | | | |
| two rows 2 - 72 | Z = tin-plated | | | | | | | | | | | | |

– for \square 0.635 mm pin cross section, angled

– **BL LP 4 ...:** packing in a bar magazine (min. 4 contacts)

| | | | | | | | | | | | | | |
|---|---|---|--|---|----------------------------|-------------------------------|--|----------------|---------------------------|--|-----------------|----------------|--|
| art. no. BL LP 3 ... |  |  |  |  | | | | | | | | | |
| art. no. BL LP 4 ... |  |  |  |  | | | | | | | | | |
| <p>please indicate:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">... no. of contacts</td> <td style="width: 33%;">... surface of contact</td> <td style="width: 33%;"></td> </tr> <tr> <td>one row 1 - 36</td> <td>S = selective gold-plated</td> <td></td> </tr> <tr> <td>two rows 2 - 72</td> <td>Z = tin-plated</td> <td></td> </tr> </table> | | | | | ... no. of contacts | ... surface of contact | | one row 1 - 36 | S = selective gold-plated | | two rows 2 - 72 | Z = tin-plated | |
| ... no. of contacts | ... surface of contact | | | | | | | | | | | | |
| one row 1 - 36 | S = selective gold-plated | | | | | | | | | | | | |
| two rows 2 - 72 | Z = tin-plated | | | | | | | | | | | | |

Female headers



For □ 0.635 mm pin cross section, can be put through / 260 °C Reflow

- for each contact both contact springs have to be interconnected via the PCB
- **packing:** bar magazine
- stamped contact spring; - **separable!** any requested number of contact can be delivered

| | | | |
|-------------------------|--|--|-----------|
| | | | |
| art. no. | dim. [mm] | art. no. | dim. [mm] |
| BL 11 254 ... | A 2.54 | BL 11 508 ... | A 5.08 |
| please indicate: | ... no. of contacts one row 1 - 45 | ... surface of contact S = selective gold-plated Z = tin-plated | |

For □ 0.635 mm pin cross section, can be put through

- **packing:** bar magazine
- stamped contact spring; - **separable!** any requested number of contact can be delivered

| | | | |
|-------------------------|---|--|-----------|
| | | | |
| art. no. | dim. [mm] | art. no. | dim. [mm] |
| BL 12 650 ... | A 6.50 | BL 12 762 ... | A 7.62 |
| please indicate: | ... no. of contacts two rows 2 - 90 | ... surface of contact S = selective gold-plated Z = tin-plated | |
| | | | |
| art. no. | dim. [mm] | art. no. | dim. [mm] |
| BL 21 650 ... | A 6.50 | BL 21 762 ... | A 7.62 |

Female headers

Precision contacts for □ 0.635 mm and Ø up to 0.85 mm pin cross section

| | |
|---|-------------------------------------|
| | |
| <p>art. no.</p> | <p>inner contact spring surface</p> |
| <p>BL 5 ...</p> | <p>≥ 0,75 μm Au</p> |
| <p>BL 5 025 ...</p> | <p>≥ 0,25 μm Au</p> |
| <p>please indicate: ... no. of contacts one row 1 - 36</p> | |
| | |
| <p>art. no.</p> | <p>inner contact spring surface</p> |
| <p>BL 6 ...</p> | <p>≥ 0,75 μm Au</p> |
| <p>BL 6 025 ...</p> | <p>≥ 0,25 μm Au</p> |
| <p>please indicate: ... no. of contacts two rows 2 - 72</p> | |
| <p>contact sleeve:</p> | <p>tin-plated</p> |
| <p>contact spring:</p> | <p>gold-plated</p> |
| <p>art. no.</p> | |
| <p>BL KG 3 ...</p> | <p>inner contact spring surface</p> |
| <p>please indicate: ... no. of contacts three rows 9 - 96</p> | |
| <p>art. no.</p> | |
| <p>BL 7 ...</p> | <p>inner contact spring surface</p> |
| <p>please indicate: ... no. of contacts one row 1 - 36</p> | |
| <p>contact sleeve:</p> | <p>tin-plated</p> |
| <p>contact spring:</p> | <p>gold-plated</p> |

A

Female headers

Precision contacts for □ 0.635 mm and Ø up to 0.85 mm pin cross section

- packing in a bar magazine (≥ 6 contacts)
- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

| | | | |
|--|-------------|--|--|
| art. no. BL 8 ... | | | |
| please indicate: ... no. of contacts two rows 4 - 72 | | | |
| contact sleeve: | tin-plated | | |
| contact spring: | gold-plated | | |

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

| | | | |
|--|-------------|--|--|
| art. no. MK 21 ... | | | |
| please indicate: ... no. of contacts one row 1 - 50 | | | |
| art. no. MK 221 ... | | | |
| please indicate: ... no. of contacts two rows 2 - 100 | | | |
| contact sleeve: | tin-plated | | |
| contact spring: | gold-plated | | |

K

L

M

N

Female headers

Precision contacts for \square 0.635 mm and \varnothing up to 0.85 mm pin cross section

- with aligned Wire-Wrap pins
- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

| | | | |
|---|--------------------|-----------------------------------|-------------------------------------|
| <p>art. no.</p> <p>BL 9 ...</p> | | <p>\square 0,635</p> | <p>$n \times 2,54$</p> |
| <p>please indicate: ... no. of contacts one row 1 - 36</p> | | | |
| <p>art. no.</p> <p>BL 10 ...</p> | | <p>\square 0,635</p> | <p>$n/2 \times 2,54$</p> |
| <p>please indicate: ... no. of contacts two rows 2 - 72</p> | | | |
| <p>contact sleeve:</p> | <p>tin-plated</p> | | |
| <p>contact spring:</p> | <p>gold-plated</p> | | |

- for PC 104 modules
- no capillary action when soldering due to protected contact insert
- **separable!** any requested number of contact can be delivered


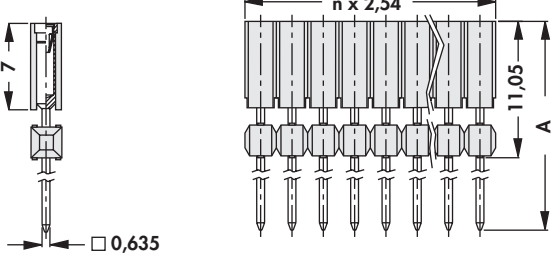
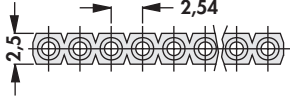
| | | | |
|---|--------------------|--------------------------------------|-------------------------------------|
| <p>art. no.</p> <p>BL 13 ...</p> | | <p>\varnothing 0,75</p> | <p>$n \times 2,54$</p> |
| <p>please indicate: ... no. of contacts one row 1 - 36</p> | | | |
| <p>art. no.</p> <p>BL 14 ...</p> | | <p>\varnothing 0,75</p> | <p>$n/2 \times 2,54$</p> |
| <p>please indicate: ... no. of contacts two rows 2 - 72</p> | | | |
| <p>contact sleeve:</p> | <p>gold-plated</p> | | |
| <p>contact spring:</p> | <p>gold-plated</p> | | |

Female headers


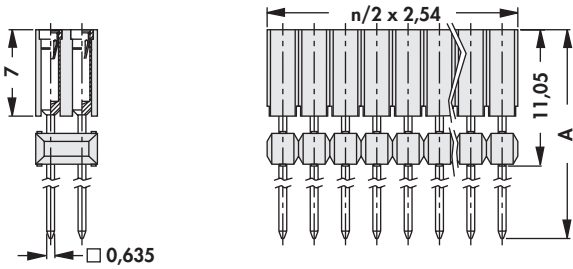
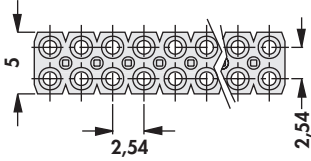
Precision contacts for □ 0.635 mm and Ø up to 0.85 mm pin cross section

- for PC 104 modules
- no capillary action when soldering due to protected contact insert
- **separable!** any requested number of contact can be delivered

– one row, 1-36 contacts

| | | |
|---|--|---|
|  |  |  |
| art. no. | dim. [mm] | |
| | A | |
| BL 18 141 ... | 14.1 | |
| BL 18 219 ... | 21.9 | |
| please indicate: | ... no. of contacts one row 1 - 36 | |
| contact sleeve: | gold-plated | |
| contact spring: | gold-plated | |

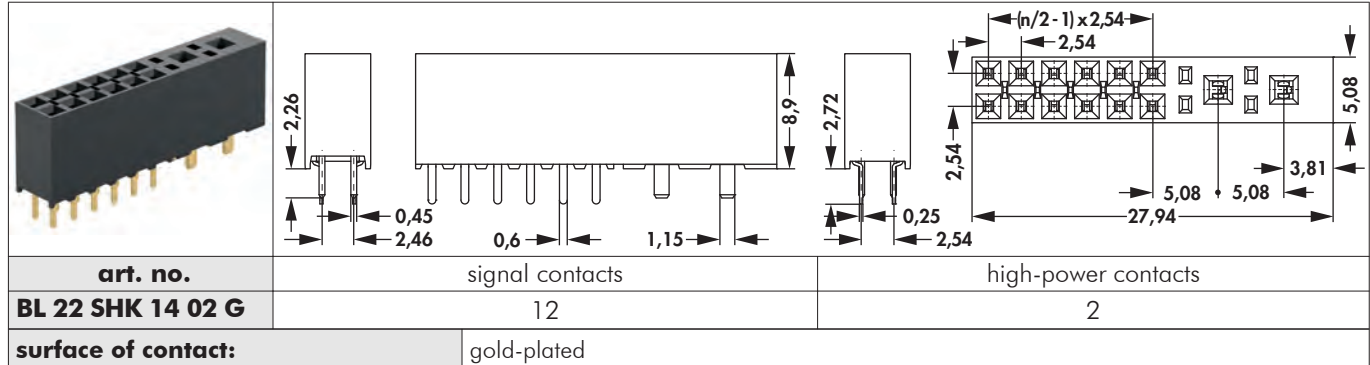
– two rows, 2-72 contacts

| | | |
|---|--|---|
|  |  |  |
| art. no. | dim. [mm] | |
| | A | |
| BL 19 141 ... | 14.1 | |
| BL 19 219 ... | 21.9 | |
| please indicate: | ... no. of contacts two rows 2 - 72 | |
| contact sleeve: | gold-plated | |
| contact spring: | gold-plated | |

Female headers

Turned precision female contacts

- suitable for SL 26 SHK 14 02 G → G 19 and SL 27 SHK 14 02 SMD G → G 32
- signal and high-power contacts
- contacts gold-plated
- other number of contacts / contact surface upon request



Female headers

Low profile, fork contact spring

- for \square 0.635 mm pin cross section
- other number of contacts on request

| | | | |
|---|--|--|--|
| art. no. BL LP 5 SMD ... | | | |
| please indicate: | ... no. of contacts one row 4 - 20 | ... surface of contact S = selective gold-plated Z = tin-plated | ... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine |

Option for automatic assembly

| | | | | |
|--------------------|--------------------------|--|---------------------------|-----------------------------|
| | | | | |
| ... SM ... B SM | BL LP 5 SMD ... B | | BL LP 5 SMD ... SM | BL LP 5 SMD ... B SM |

Female headers

| | | | | |
|-------------------------|---|--|--|--|
| art. no. | | | | |
| BL LP 6 SMD ... | | | | |
| please indicate: | ... no. of contacts two rows 4 - 40 | ... surface of contact S = selective gold-plated Z = tin-plated | ... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine | |

... packing (option) - additions:
 BL LP 6 SMD ... SM 6-40 contacts
 BL LP 6 SMD ... B SM 4-40 contacts

Option for automatic assembly

| | | | |
|----------------------------------|--------------------------|---------------------------|-----------------------------|
| | | | |
| ... SM ... B SM | BL LP 6 SMD ... B | BL LP 6 SMD ... SM | BL LP 6 SMD ... B SM |

| | | | | |
|-------------------------|--|--|--|--|
| art. no. | | | | |
| BL LP 7 SMD ... | | | | |
| please indicate: | ... no. of contacts one row 1 - 20 | ... surface of contact S = selective gold-plated Z = tin-plated | ... packing (optional) SM = bar magazine | |

... packing (option) - additions:
 BL LP 7 SMD ... SM 4-20 contacts

Option for automatic assembly

| | |
|---------------|---------------------------|
| | |
| ... SM | BL LP 7 SMD ... SM |

Female headers

Precision contacts for □ 0.635 mm and Ø up to 0.85 mm pin cross section

- no capillary action when soldering due to protected contact insert
- **separable!** any requested number of contact can be delivered

| art. no. | dim. [mm] | | |
|------------------|-----------|-----|-----|
| | A | B | C |
| BL 15 SMD 043... | 4.3 | 5.0 | 2.5 |
| BL 15 SMD 089... | 8.9 | 9.5 | 4.8 |

please indicate: ... no. of contacts one row 4 - 20

... packing (optional)
 SM = bar magazine
 B SM = pick and place pad and bar magazine
 B TR = pick and place pad and tape and reel (400pcs/reel)

... packing (option) - additions:
 BL 15 SMD ... B TR: 4-12 contacts

| | |
|-----------------|-------------|
| contact sleeve: | tin-plated |
| contact spring: | gold-plated |

Option for automatic assembly

- reel diameter Ø 330 mm

... SM

... B SM

... B TR

BL 15 SMD 043 ... SM

BL 15 SMD 043 ... B SM

BL 15 SMD 089 ... SM

BL 15 SMD 089 ... B SM

Female headers

Precision contacts for \square 0.635 mm and \varnothing up to 0.85 mm pin cross section

- no capillary action when soldering due to protected contact insert
- **separable!** any requested number of contact can be delivered

| art. no. | dim. [mm] | | |
|-------------------|-----------|------|-----|
| | A | B | C |
| BL 16 SMD 067 ... | 6.7 | 7.5 | 2.5 |
| BL 16 SMD 113 ... | 11.3 | 12.0 | 4.8 |

please indicate:

- ... no. of contacts**
two rows 4 - 40
- ... packing (optional)**
SM = bar magazine
B SM = pick and place pad and bar magazine
B TR = pick and place pad and tape and reel
- ... positioning (optional)**
PS = locating pin (2 pcs/bar bigger than 6 contacts)

... packing (option) - additions:

BL 16 SMD 067 ... B TR: 4-6 contacts, 500 pcs/reel

BL 16 SMD ... B TR: 6-40 contacts, 250 pcs/reel

| | |
|-----------------|-------------|
| contact sleeve: | tin-plated |
| contact spring: | gold-plated |

Option for automatic assembly

- reel diameter \varnothing 330 mm

... SM
... B SM

BL 16 SMD ... SM BL 16 SMD ... B SM

... B TR

BL 16 SMD 067 ... 4-6 B TR

BL 16 SMD 067-113 ... 6-24 B TR BL 16 SMD 067-113 ... 26-40 B TR

A

Female headers

B

Precision contacts for \square 0.635 mm and \varnothing up to 0.85 mm pin cross section

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

C

| | | | | |
|-------------------------|--|---|--|--|
| art. no. | | | | |
| BL 17 SMD ... | | | | |
| please indicate: | ... no. of contacts one row 2 - 20 | ... packing (optional) SM = bar magazine TR = tape and reel (1,300pcs./reel) | | |

D

packing (option) - additions:

BL 17 SMD ... SM: 3-20 contacts

BL 17 SMD ...TR: 2-13 contacts

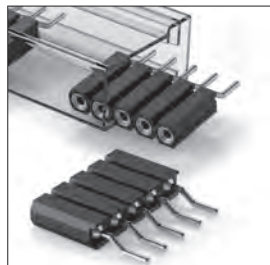
E

| | |
|------------------------|-------------|
| contact sleeve: | tin-plated |
| contact spring: | gold-plated |

Option for automatic assembly

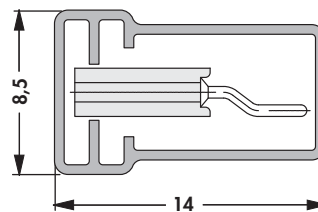
- reel diameter \varnothing 330 mm

F



G

... SM



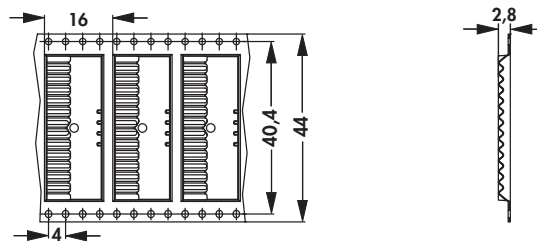
BL 17 SMD ... SM

H



I

... TR



BL 17 SMD ... TR

K

L

M

N

Female headers

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

| | | | | | |
|-------------------------|---|--|-------|-----------|------------------|
| art. no. | | | | | |
| BL 20 SMD ... | | 14,7 7 10,1 | Ø 0,6 | 2,54 5 | 4,6 2,54 3 |
| please indicate: | ... no. of contacts two rows 4 - 40 | ... packing (optional) SM = bar magazine TR = tape and reel (600pcs/reel) | | | |

... packing (option) - additions:
BL 20 SMD ... TR: 4-26 contacts

| | |
|------------------------|-------------|
| contact sleeve: | tin-plated |
| contact spring: | gold-plated |

Option for automatic assembly

| | | | | | |
|---------------|--|--|--|--|------------------------------|
| | | | | | |
| ... SM | | | | | BL 20 SMD ... SM |
| | | | | | |
| ... TR | | | | | BL 20 SMD ... 4-26 TR |

Turned precision female contacts

- suitable for **SL 26 SHK 14 02 G** → G 19 and **SL 27 SHK 14 02 SMD G** → G 32
- signal and high-power contacts
- contacts gold-plated
- other number of contacts / contact surface upon request

| | | | | |
|------------------------------|-----------------|---------------------|--|--|
| | | | | |
| art. no. | signal contacts | high-power contacts | | |
| BL 23 SHK 14 02 SMD G | 12 | 2 | | |
| surface of contact: | gold-plated | | | |

Female headers

Precision contacts for \square 0.635 mm and \varnothing up to 0.85 mm pin cross section

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

| | | |
|-------------------------|--|--|
| art. no. | | |
| MK 22 SMD ... | | |
| please indicate: | ... no. of contacts one row 4 - 20 | ... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (600pcs/reel) |

... packing (option) - additions:
MK 22 SMD ... B TR: 4-20 contacts

| | |
|------------------------|-------------|
| contact sleeve: | tin-plated |
| contact spring: | gold-plated |

Option for automatic assembly

| | | |
|-----------------|--|---------------------------------|
| | | MK 22 SMD ... B SM |
| ... B SM | | |
| | | MK 22 SMD ... 4-13 B TR |
| ... B TR | | MK 22 SMD ... 14-20 B TR |

Female headers

| | | | |
|-------------------------|---|---|--|
| art. no. | | | |
| MK 222 SMD ... | | | |
| please indicate: | ... no. of contacts two rows 4 - 40 | ... packing (optional) B SM = pick and place pad and bar magazine | |
| contact sleeve: | tin-plated | | |
| contact spring: | gold-plated | | |

Option for automatic assembly

| | | | |
|-----------------|----------------------------|--|--|
| | | | |
| ... B SM | MK 222 SMD ... B SM | | |

Precision contacts for □ 0.635 mm and up to Ø 0.85 mm pin cross section

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

| | | | |
|-------------------------|--|--|--|
| art. no. | | | |
| MK 24 SMD ... | | | |
| please indicate: | ... no. of contacts one row 2 - 20 | | |
| contact sleeve: | tin-plated | | |
| contact spring: | gold-plated | | |

Precision contacts for pin cross section Ø 0.5 mm


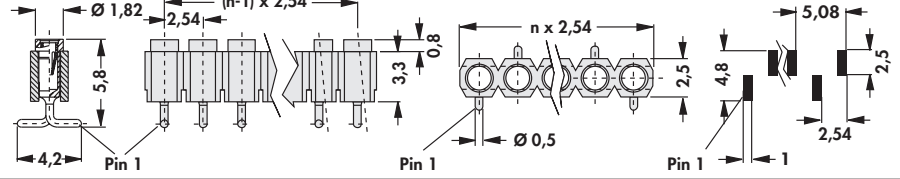
- one row
- no capillary action when soldering due to protected contact insert
- **separable!** any requested number of contact can be delivered

| | | | |
|-------------------------|--|--|--|
| art. no. | | | |
| MK 25 SMD ... | | | |
| please indicate: | ... no. of contacts one row 2 - 20 | | |
| contact sleeve: | tin-plated | | |
| contact spring: | gold-plated | | |

Female headers

Precision contacts for pin cross section $\varnothing 0.5$ mm


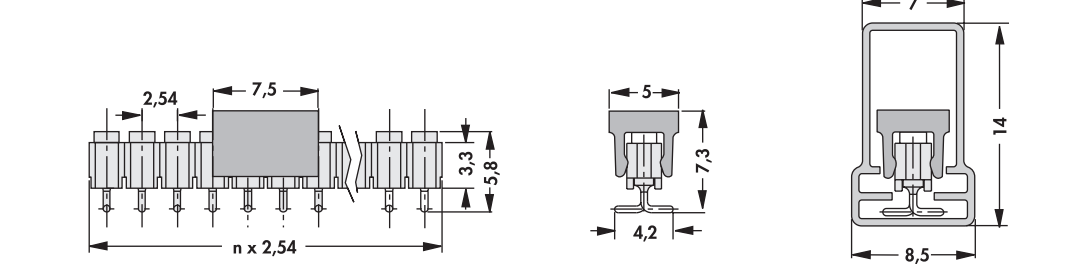
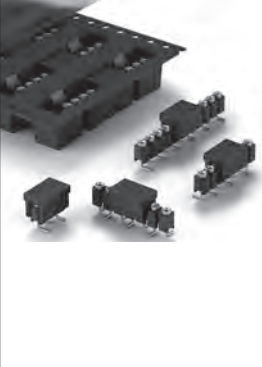
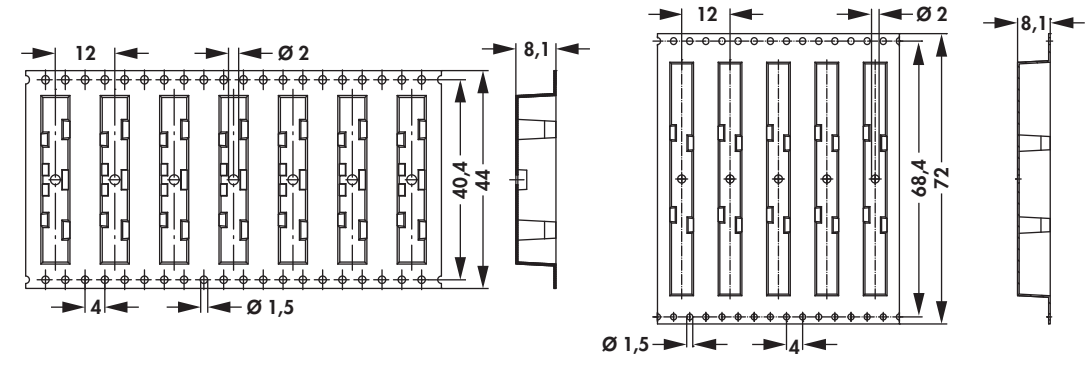
- one row
- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

| | | |
|---|---|--|
| art. no. MK 23 SMD ... |  |  |
| <p>please indicate:</p> <p>... no. of contacts one row 4 - 20</p> <p>... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (600pcs/reel)</p> | | |

... packing (option) - additions:
MK 22 SMD ... B TR: 4-20 contacts

| | |
|-----------------|-------------|
| contact sleeve: | tin-plated |
| contact spring: | gold-plated |

Option for automatic assembly

| | |
|---|--|
|  |  <p style="text-align: right;">MK 23 SMD ... B SM</p> |
| ... B SM | |
|  |  <p style="text-align: center;">MK 23 SMD ... 4-13 B TR</p> <p style="text-align: right;">MK 23 SMD ... 14-20 B TR</p> |
| ... B TR | |

Female headers

- two rows
- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

| | | |
|-------------------------|---|---|
| art. no. | | |
| MK 223 SMD ... | | |
| please indicate: | ... no. of contacts two rows 4 - 40 | ... packing (optional) B SM = pick and place pad and bar magazine |
| contact sleeve: | tin-plated | |
| contact spring: | gold-plated | |

Option for automatic assembly

| |
|-----------------|
| |
| ... B SM |

A

Female headers

B

Precision contacts for pin cross section $\varnothing 0.5$ mm

- no capillary action when soldering due to protected contact insert
- **separable!** any requested number of contact can be delivered

C

| | | | | |
|-------------------------|---|--|--|--|
| art. no. | | | | |
| MK 220 SMD ... | | | | |
| please indicate: | ... no. of contacts two rows 4 - 40 | ... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel | | |

D

... packing (option) - additions:

MK 220 SMD ... BTR 6-12 contacts; 800 pcs/reel

MK 220 SMD ... BTR 14-40 contacts; 500 pcs/reel

E

| | |
|------------------------|-------------|
| contact sleeve: | tin-plated |
| contact spring: | gold-plated |

Option for automatic assembly

– reel diameter $\varnothing 330$ mm

F

| | | | | |
|-----------------|---------------------------------|----------------------------------|--|----------------------------|
| | | | | MK 220 SMD ... B SM |
| ... B SM | | | | |
| | | | | |
| ... B TR | MK 220 SMD ... 6-12 B TR | MK 220 SMD ... 14-40 B TR | | |

H

I

K

L

M

N

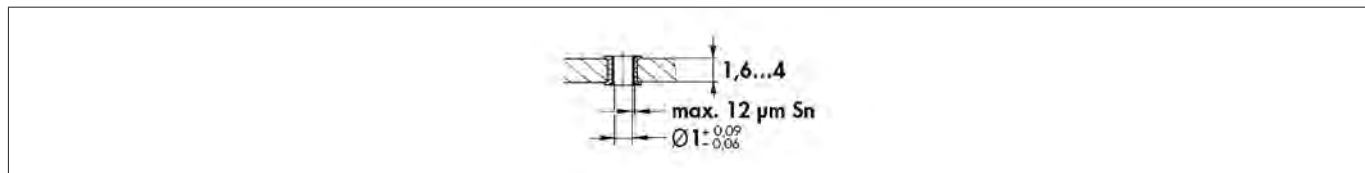
Female headers

Precision contacts for \square 0.635 mm and up to \varnothing 0.85 mm pin cross section in pressfit technology

- press-fit mounting without soldering, resilient press-fit area
- no capillary action when soldering due to protected inner contact contact
- Pressfit bar with insulating body has to be inserted up to the PCB
- **separable!** any requested number of contact can be delivered

| | | | | |
|--|-------------|--|--|--|
| art. no. BLP 1 ... | | | | |
| art. no. BLP 2 ... | | | | |
| please indicate: ... no. of contacts one row 1 - 36 two rows 2 - 72 | | | | |
| contact sleeve: | tin-plated | | | |
| contact spring: | gold-plated | | | |


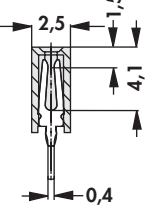
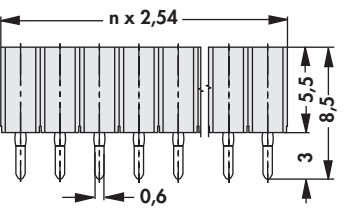
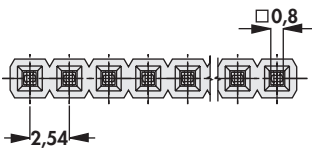
Hole diameter in PCB - hole structure acc. to DIN EN 60352-5



Female headers

Female connectors for LED applications, low profile, fork contact spring

- insulating body made of white plastic (nature)
- for \square 0.635 mm pin cross section, straight
- **separable!** any requested number of contact can be delivered

| | | | | |
|---|---|---|--|---|
| art. no. BL LP 9 LED ... |  |  |  |  |
| please indicate: | ... no. of contacts one row 1 - 36 | | ... surface of contact S = selective gold-plated Z = tin-plated | |

Female headers

Female connectors for LED applications

- insulating body made of white plastic (nature)
- for \square 0.635 mm pin cross section, straight
- **separable!** any requested number of contact can be delivered

| | | | | |
|--|--|--|---|--|
| <p>art. no.</p> <p>BL LP 8 LED SMD ...</p> | | | | |
| <p>please indicate: ... no. of contacts one row 1 - 20</p> | | <p>... surface of contact S = selective gold-plated Z = tin-plated</p> | <p>... packing (optional) SM = bar magazine</p> | |

... packing (option) - additions:
BL LP 8 LED SMD ... SM 4-20 contacts

Option for automatic assembly

| | |
|---------------|-------------------------------|
| <p>... SM</p> | <p>BL LP 8 LED SMD ... SM</p> |
|---------------|-------------------------------|

A

Female headers

Precision contacts for \square 0.5 mm and \varnothing up to 0.56 mm, pin cross section

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

| | | | | |
|---|-------------|--|--|--|
| art. no. BLY 1 ... | | | | |
| art. no. BLY 2 ... | | | | |
| art. no. BLY 3 ... | | | | |
| art. no. BLY 4 ... | | | | |
| please indicate: | | ... no. of contacts one row 1 - 50 two rows 2 - 100 | | |
| contact sleeve: | tin-plated | | | |
| contact spring: | gold-plated | | | |

H

I

K

L

M

N

Female headers

Turned precision female contacts

- suitable for **SLY 13 SHK 14 02 G** → G 41 and **SLY 14 SHK 14 02 G** → G 41
- signal and high-power contacts
- contacts gold-plated
- other number of contacts / contact surface upon request

| | | |
|----------------------------------|------------------------|----------------------------|
| | | |
| <p>art. no.</p> | <p>signal contacts</p> | <p>high-power contacts</p> |
| <p>BLY 10 SHK 14 02 G</p> | <p>12</p> | <p>2</p> |
| <p>surface of contact:</p> | <p>gold-plated</p> | |

Female headers

Precision contacts for \square 0.5 mm and \varnothing up to 0.56 mm, pin cross section

| | | | | |
|----------------------|---------------------------------------|---|--|--|
| art. no. | | | | |
| BLY 5 SMD ... | | | | |
| please indicate: | ... no. of contacts one row 4 - 20 | ... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (700pcs/reel) | | |

... packing (option) - additions:
BLY 5 SMD ... B TR: 4-15 contacts

| | |
|-----------------|-------------|
| contact sleeve: | tin-plated |
| contact spring: | gold-plated |

Option for automatic assembly

| | |
|----------|--------------------------------|
| | |
| ... B SM | BLY 5 SMD ... B SM |
| | |
| ... B TR | BLY 5 SMD ... 4-15 B TR |

Female headers

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

| | | | |
|-------------------------|---|---|----------------------------------|
| art. no. | | | |
| BLY 6 SMD ... | <p>7,2</p> <p>4,2</p> <p>1,9</p> <p>Ø 0,5</p> | <p>n x 2</p> <p>2</p> | <p>2</p> <p>2,54</p> <p>0,76</p> |
| please indicate: | ... no. of contacts one row 2 - 20 | ... packing (optional) TR = tape and reel | |

... packing (option) - additions:
BLY 6 SMD ... TR: 2-10 contacts
BLY 6 SMD ... TR: 11-20 contacts

| | |
|------------------------|-------------|
| contact sleeve: | fin-plated |
| contact spring: | gold-plated |

Option for automatic assembly

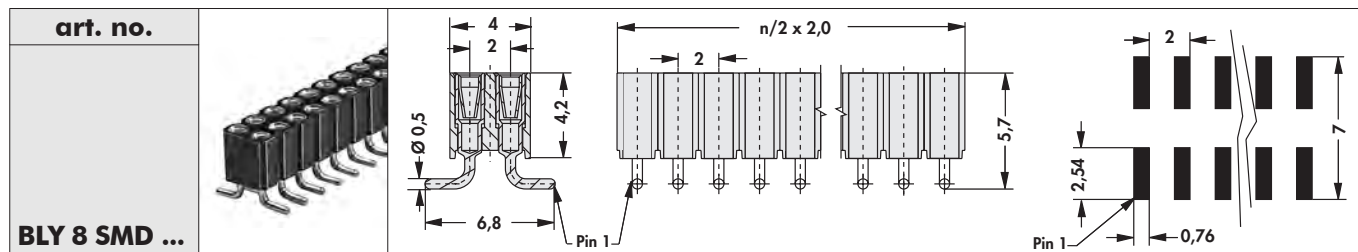
- reel diameter Ø 330 mm

| | |
|--------|--|
| | <p>BLY 6 SMD ... TR (2-10 contacts) (2.400 pcs/reel)</p> |
| ... TR | |
| | <p>BLY 6 SMD ... TR (11-20 contacts) (2.200 pcs/reel)</p> |
| ... TR | |

Female headers

Precision contacts for \square 0.5 mm and \varnothing up to 0.56 mm, pin cross section

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered



art. no.

BLY 8 SMD ...

please indicate:

... no. of contacts
two rows 4 - 40

... packing (optional)

SM = bar magazine

B SM = pick and place pad and bar magazine

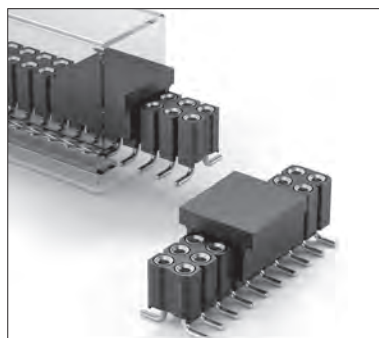
B TR = pick and place pad and tape and reel (650pcs/reel)

... packing (option) - additions:

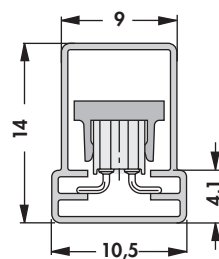
BLY 8 SMD ... B TR: 6-30 contacts

| | |
|-----------------|-------------|
| contact sleeve: | tin-plated |
| contact spring: | gold-plated |

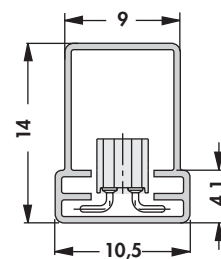
Option for automatic assembly

– reel diameter \varnothing 330 mm

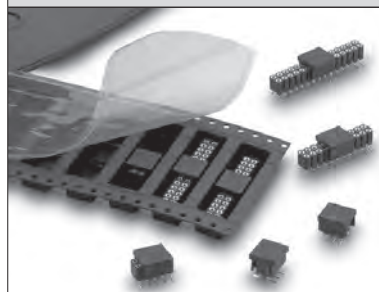
... B SM



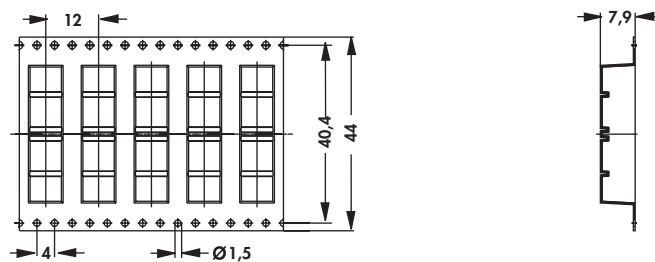
BLY 8 SMD ... B SM



BLY 8 SMD ... SM



... B TR

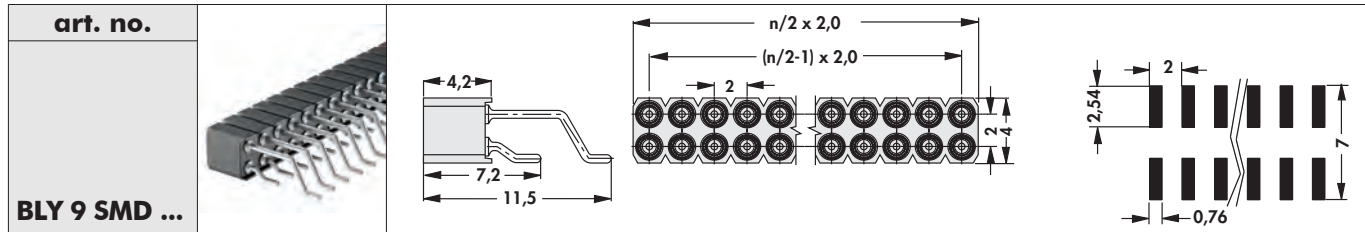


BLY 8 SMD ... B TR

Female headers

Precision contacts for \square 0.5 mm and \varnothing up to 0.56 mm pin cross section

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered



art. no.
BLY 9 SMD ...

please indicate:

... no. of contacts
two rows 4 - 40

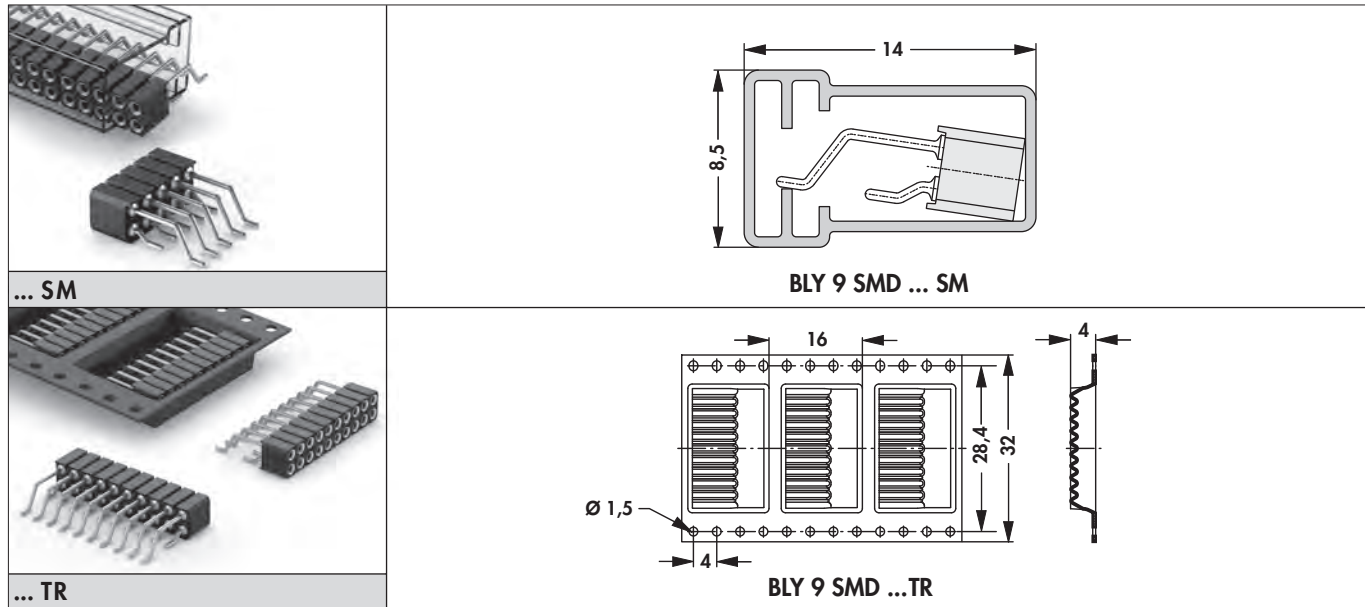
... packing (optional)
SM = bar magazine
TR = tape and reel (800pcs./reel)

... packing (option) - additions:
BLY 9 SMD ... SM: 8-40 contacts
BLY 9 SMD ... TR: 4-20 contacts

| | |
|-----------------|-------------|
| contact sleeve: | tin-plated |
| contact spring: | gold-plated |

Option for automatic assembly

- reel diameter \varnothing 330 mm



... SM

BLY 9 SMD ... SM


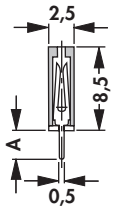
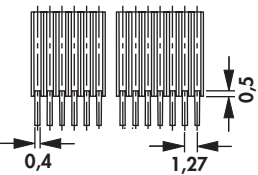
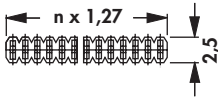

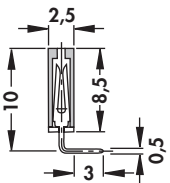
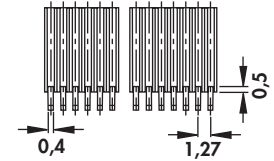
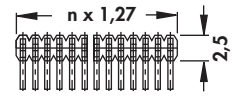
... TR

BLY 9 SMD ...TR

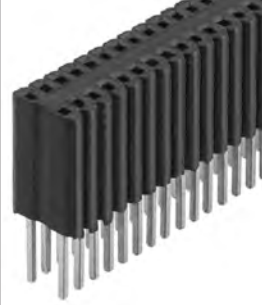
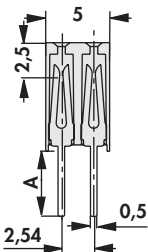
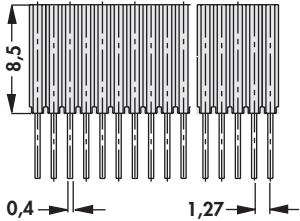
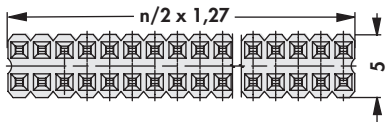
Female headers

Stamped contact spring (fork contact)

- matching male header **SLM ...** → G 47 and **SLV ...** → G 47
- one row 1-36 contacts

| | | | |
|--|---|--|---|
|  |  |  |  |
| art. no. | dim. [mm] | art. no. | dim. [mm] |
| BLM KG 1 ... | 3.0 | BLM LG 1 ... | 5.1 |
| please indicate: | ... no. of contacts one row 1 - 36 | ... surface of contact G = gold-plated Z = tin-plated | |
|  |  |  |  |
| art. no. | | | |
| BLM LA 1 ... | | | |
| please indicate: | ... no. of contacts one row 1 - 36 | ... surface of contact G = gold-plated Z = tin-plated | |

- suitable for male header **SLV** → G 47
- two rows 4-72 contacts - grid spacing 1.27 x 2.54 mm

| | | | |
|---|---|--|---|
|  |  |  |  |
| art. no. | dim. [mm] | art. no. | dim. [mm] |
| BLM KG 2 ... | 3.0 | BLM LG 2 ... | 5.1 |
| please indicate: | ... no. of contacts two rows 4 - 72 | ... surface of contact G = gold-plated Z = tin-plated | |

Female headers

- suitable for male header **SLV W 4 ...** → G 49
- two rows 4-72 contacts
- Vorzugspolzahlen, andere auf Anfrage
- verzinnte Kontakte auf Anfrage

| | | |
|-----------------------------------|------------------------|--|
| | | |
| <p>art. no.</p> | <p>no. of contacts</p> | |
| <p>BLV 2 10 G</p> | <p>10</p> | |
| <p>BLV 2 20 G</p> | <p>20</p> | |
| <p>BLV 2 26 G</p> | <p>26</p> | |
| <p>BLV 2 30 G</p> | <p>30</p> | |
| <p>BLV 2 40 G</p> | <p>40</p> | |
| <p>BLV 2 50 G</p> | <p>50</p> | |
| <p>BLV 2 72 G</p> | <p>72</p> | |
| <p>surface of contact:</p> | <p>gold-plated</p> | |

Female headers

Precision contacts for Ø 0.35...0.46 mm, pin cross section

- no capillary action when soldering due to protected inner contact
- other number of contacts on request!

| | | | | | |
|------------------------|-----------------|-----------------|--------------------|-----------------|-----------------|
| | | | | | |
| art. no. | no. of contacts | no. of contacts | art. no. | no. of contacts | no. of contacts |
| BLR 1 025 Z | 25 | 25 | BLR 1 050 Z | 50 | 50 |
| | | | | | |
| art. no. | no. of contacts | no. of contacts | art. no. | no. of contacts | no. of contacts |
| BLR 2 050 Z | 50 | 50 | BLR 2 100 Z | 100 | 100 |
| | | | | | |
| art. no. | no. of contacts | no. of contacts | art. no. | no. of contacts | no. of contacts |
| BLR 3 025 Z | 25 | 25 | BLR 3 050 Z | 50 | 50 |
| | | | | | |
| art. no. | no. of contacts | | no. of contacts | | |
| BLR 4 100 Z | 100 | | 100 | | |
| contact sleeve: | tin-plated | | | | |
| contact spring: | gold-plated | | | | |

Female headers

Fork contact for \square 0.3 mm and \square 0.4 mm pin cross section, wide insulating body

- suitable for male header **SLM ...** → G 47 and **SLV ...** → G 47
- one row 4-20 contacts

| | | | |
|-------------------------|--|--|--|
| art. no. | | | |
| BLM 1 SMD ... | | | |
| please indicate: | ... no. of contacts one row 4 - 20 | ... surface of contact G = gold-plated Z = tin-plated | |

Grid spacing 1.27 x 2.54 mm

- suitable for male header **SLV ...** → G 47
- two rows 4-40 contacts

| | | | |
|-------------------------|---|--|--|
| art. no. | | | |
| BLM 2 SMD ... | | | |
| please indicate: | ... no. of contacts two rows 4 - 40 | ... surface of contact G = gold-plated Z = tin-plated | |

Fork contact for \square 0.3 mm and \square 0.4 mm pin cross section, wide insulating body

- matching for male header **SLV** → G 47
- one row 2-20 contacts

| | | | |
|-------------------------|--|--|--|
| art. no. | | | |
| BLM 3 SMD ... | | | |
| please indicate: | ... no. of contacts one row 2 - 20 | ... surface of contact G = gold-plated Z = tin-plated | |

Female headers

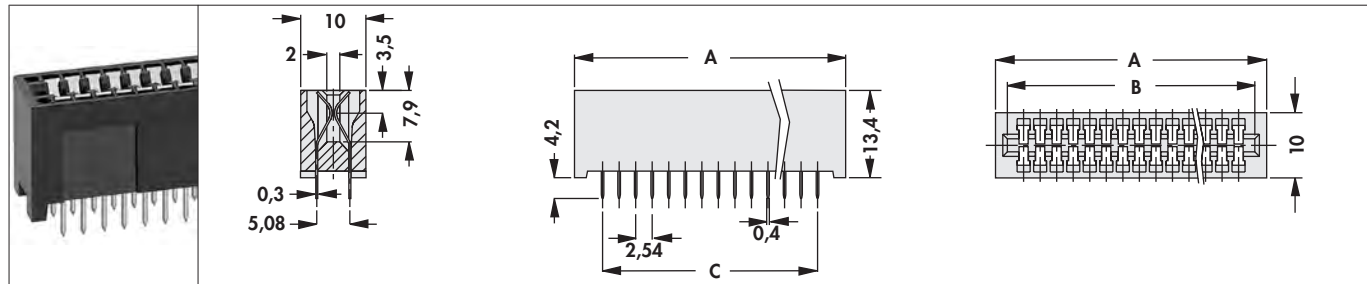
Turned precision contacts for $\varnothing 0.35\text{...}0.46\text{ mm}$

- closed precision turned part with 3-finger contact prevents rising of flux agents
- other number of contacts on request!

| | | | |
|------------------------|-----------------|-----------------|--|
| | | | |
| art. no. | no. of contacts | | |
| BLR 6 SMD 100 Z | 100 | | |
| | | | |
| art. no. | no. of contacts | no. of contacts | |
| BLR 7 SMD 50 Z | 50 | 50 | |
| contact sleeve: | tin-plated | | |
| contact spring: | gold-plated | | |

Direct female connectors


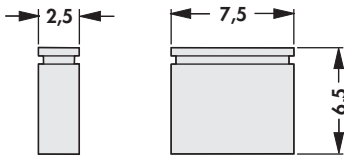

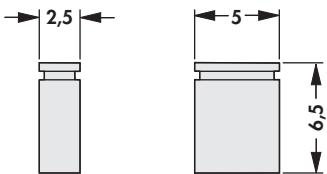

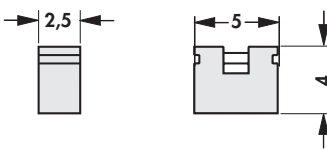
For PCB thickness: 1.4...1.8 mm




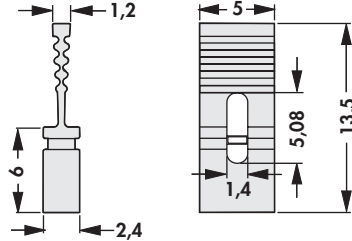
| art. no. | no. of contacts | dim. [mm] | | |
|----------------------------|-----------------|------------|-------|-------|
| | | A | B | C |
| DF OB 06 | 12 | 21.33 | 17.70 | 12.70 |
| DF OB 07 | 14 | 23.87 | 20.24 | 15.24 |
| DF OB 10 | 20 | 31.49 | 27.86 | 22.86 |
| DF OB 17 | 34 | 49.27 | 45.64 | 40.64 |
| surface of contact: | | tin-plated | | |

A

Jumpers
For 0.6...0.64 mm wire wrap pins and for Ø 0.6...0.7 mm

|  |  | | | |
|--|---|--------------------|-----------------|------------------------------------|
| art. no. | grid [mm] | surface of contact | no. of contacts | version |
| CAB 5 05 G ... | 5.08 | 0.5 µm gold | 2 | closed, hole for test probe |
| CAB 5 10 G ... | | 1.0 µm gold | | |
| CAB 5 Z ... | | 5.0 µm tin | | |
|  |  | | | |
| art. no. | grid [mm] | surface of contact | no. of contacts | version |
| CAB 4 G ... | 2.54 | 0.1 µm gold | 2 | closed |
|  |  | | | |
| art. no. | grid [mm] | surface of contact | no. of contacts | version |
| CAB 6 05 G ... | 2.54 | 0.5 µm gold | 2 | open, for miniature alligator clip |
| CAB 6 10 G ... | | 1.0 µm gold | | |
| CAB 6 Z ... | | 5.0 µm tin | | |
| please indicate: ... colour S = black R = red B = blue G = grey | | | | |

- the flexible contacts are short-circuiting two pins
- the jumpers can be mounted behind and next to each other


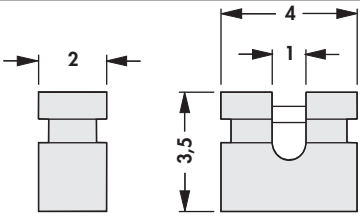

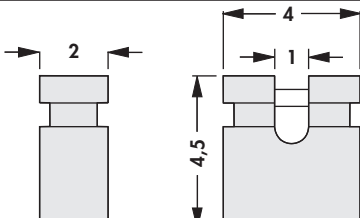
|  |  | | | |
|---|--|--------------------|-----------------|-----------|
| art. no. | grid [mm] | surface of contact | no. of contacts | version |
| CAB 9 G ... | 2.54 | <0.1 µm gold | 2 | tag, open |
| please indicate: ... colour S = black R = red | | | | |

G 99
Technical data
→ G 101 - 107


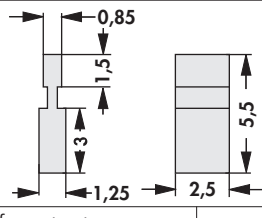
N

Jumpers


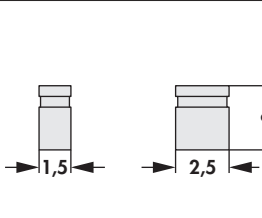
For □ 0.5 mm and for Ø 0.4...0.5 mm

| | | | | |
|---|--|--------------------|-----------------|------------------------------------|
|  |  | | | |
| art. no. | grid [mm] | surface of contact | no. of contacts | version |
| CAB 10 G S | 2 | 0.1 μm Au | 2 | open, for miniature alligator clip |
| colour: | black | | | |
|  |  | | | |
| art. no. | grid [mm] | surface of contact | no. of contacts | version |
| CAB 11 G S | 2 | 0.1 μm Au | 2 | open, for miniature alligator clip |
| colour: | black | | | |

For □ 0.3...0.4 mm and Ø 0.4...0.5 mm

| | | | | |
|---|---|--------------------|-----------------|-------------|
|  |  | | | |
| art. no. | grid [mm] | surface of contact | no. of contacts | version |
| CAB 15 G S | 1.27 | <0.1 μm Au | 2 | closed, tag |
| colour: | black | | | |

For □ 0.3...0.4 mm and Ø 0.4...0.5 mm

| | | | | |
|---|---|--------------------|-----------------|---------|
|  |  | | | |
| art. no. | grid [mm] | surface of contact | no. of contacts | version |
| CAB 16 G ... | 1.27 | <0.1 μm Au | 2 | closed |
| please indicate: | ... colour S = black R = red B = blue | | | |

| | MK ..., MK LP 240 ..., MK LP 241 ..., MK LP 242 ..., MK LP 40 ..., MK LP 41 ..., MK LP 42 ..., MK LP 43 ... | SL 7 - 9 | SLU ... | SL KA 3 ..., SL KG 3 ... |
|---|---|---|--|-------------------------------|
| contact material | CuZn-alloy | | CuSn alloy | CuZn-alloy |
| surface contact / contact sleeve | Ni+≥0.2µm Au/ Ni+4...6µm Sn | | Ni+≥0.2µm Au (selective)/ Ni+4...6µm Sn | Ni+≥0.2µm Au/ Ni+4...6µm Sn |
| shock resistance | 50 g | | | |
| volume resistance | ≤10 mΩ | ≤5 mΩ | ≤10 mΩ | ≤20 mΩ |
| vibration resistance max. | 15 g | | | |
| capacity between two adjacent contacts | ≤0,4 pF | | | |
| nominal current | 1.5 A | 3 A | | |
| nominal voltage | 60 V DC | 250 V AC | 100 V DC | 250 V AC |
| test voltage | 1000 V | 2000 V | 1000 V | |
| insulating body material | PA 4.6. GF | | | |
| temperature range | -40°C... +163°C/ (260°C/10 s) | | | -40°C... +163°C/ (260°C/5 s) |
| class of inflammability | UL 94 V-0 | | | |
| specific insulation resistance | >10 ⁷ Ω·m | | | |
| | SL ... SHK ... | SL ..., SL ... THR, SLK ..., SL LP ... | SLP 1 ..., SLP 2 ..., SLUP 31 ... | SL ... LED ... |
| contact material | CuZn-alloy | CuSn alloy | | |
| surface contact / contact sleeve | Ni+≥0.2µm Au | Ni+≥0.2µm Au/ Ni+4...6µm Sn | | |
| volume resistance | ≤10 mΩ | ≤5 mΩ | ≤10 mΩ | ≤5 mΩ |
| nominal current | 8.2 A/ 3 A | 3 A | | |
| nominal voltage | 250 V AC | | | |
| test voltage | 1000 V | 2000 V | 1000 V | 2000 V |
| insulating body material | PCT, GF | PA 4.6. GF | | LCP |
| temperature range | -40°C ... +105°C (260°C / 10s) | -40°C... +163°C/ (260°C/10 s) | | -40°C...+230°C/ (260°C/10 s) |
| class of inflammability | UL 94 V-0 | | | |
| specific insulation resistance | >10 ⁷ Ω·m | | | >10 ¹⁵ Ω·cm |
| | SLY ... | SLY ... SHK ... | SLM N ..., SLV N ..., SLV W ... | SLR ... |
| contact material | CuSn alloy | CuZn-alloy | | |
| surface contact / contact sleeve | Ni+≥0.2µm Au/ Ni+4...6µm Sn | Ni+≥0.2µm Au | Ni+≥0.2µm Au/ Ni+4...6µm Sn | |
| volume resistance | ≤5 mΩ | ≤10 mΩ | ≤5 mΩ | ≤20 mΩ |
| nominal current | 3 A | 8.2 A/ 2.5 A | 1.5 A | 1 A |
| nominal voltage | 100 V DC | 250 V AC | 125 V AC | 100 V AC/ 150 V DC |
| test voltage | 500 V | 1000 V | 300 V | 500 V |
| insulating body material | PA 4.6. GF | PCT, GF | PA 4.6. GF | PCT, GF |
| temperature range | -40°C... +163°C/ (260°C/10 s) | -40°C ... +105°C (260°C / 10s) | -40°C... +163°C/ (260°C/10 s) | -40°C... +105°C/ (260°C/10 s) |
| class of inflammability | UL 94 V-0 | | | |
| specific insulation resistance | >10 ⁷ Ω·m | >10 ⁷ Ω·m | | |

| | MK 06 ..., MK 07/207 ..., MK 12/212 ..., MK 13/213 ..., MK 17/217 ..., MK 31/231 ... | MK LP 18 ..., MK LP 19 ..., MK LP 218 ..., MK LP 219 ... | PO A ... | SIL 1 ..., SIL 3 ... |
|---|---|---|----------------------------------|---------------------------------|
| contact material | CuZn-alloy | | | |
| surface contact / contact sleeve | Ni+0.2μm Au/ Ni+4...6μm Sn | | Ni+ ≥0.2μm Au | Ni+0.2μm Au/ Ni +4...6μm Sn |
| inner contact spring material | CuBe-alloy | | | |
| inner contact spring surface | Ni+0,75μm Au | | Ni+0,25μm Au | Ni+0,75μm Au |
| type internal spring | 4-fingers | | | |
| plugability for circuit points | □0,22x0,25mm... □0,4x0,55mm/ Ø0,4...0,56mm | | | |
| insert depth | 2.5...3.6mm | | 2.5...3.4mm | 2.5...3.6mm |
| insertion / drawing force | 1.8 N/1.4 N | | | |
| shock resistance | 50 g | | | 50 g |
| volume resistance | ≤10 mΩ | | | ≤10 mΩ |
| vibration resistance max. | 15 g | | | 15 g |
| capacity between two adjacent con- tacts | ≤0,4 pF | | | ≤0,4 pF |
| nominal current | 1.5 A | | 3 A | 1.5 A |
| nominal voltage | 60 V DC | | 150 V DC | 60 V DC |
| test voltage | 1000 V | | 1000 V / 1 min. | 1000 V |
| insulating body material | PA 4.6. GF | | | |
| temperature range | -40°C... +163°C/ (260°C/10 s) | | -55°C... +125°C/ (260°C/10 s) | |
| class of inflammability | UL 94 V-0 | | | |
| specific insulation resistance | > 10 ⁷ Ω·m | | | |

A

Technical data: PCB connectors

B

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| | SIL 2 ... | BL 1 ..., BL 2 ..., BL 3 ..., BL 4 ... | BL LP ... | BL 11 ... |
|---|--|---|---|---|
| contact material | CuZn-alloy | CuSn alloy | | |
| surface contact / contact sleeve | Ni+0.2µm Au/ Ni +4...6µm Sn | Ni+≥0.2µm Au/ Ni +4...6µm Sn | Ni+≥0.2µm Au (se- lective)/ Ni+2...4µm Sn (matt finished tin) | Ni+≥0.2µm Au (se- lective)/ Ni+4...6µm Sn |
| inner contact spring material | CuBe-alloy | | | |
| inner contact spring surface | Ni+0,25µm Au | | | |
| type internal spring | 4-fingers | fork contact | | spring contact |
| plugability for circuit points | □0,22x0,25mm... □0,4x0,55mm/ Ø0,4...0,56mm | □0,5...0,7mm | | □0,6...0,65mm |
| insert depth | 2.5...3.6mm | 1.5...5mm | 2...4mm | ≥5mm from above/ ≥8mm from below |
| insertion / drawing force | 1.8 N/1.4 N | 1.5 N/1.3 N | 2N/1.5N | 1.5 N/0.5 N |
| shock resistance | 50 g | | | |
| volume resistance | | ≤10 mΩ | | ≤20 mΩ |
| vibration resistance max. | 15 g | | | |
| capacity between two adjacent con- tacts | ≤0,4 pF | ≤ 0,9 pF | | |
| nominal current | 1.5 A | 3 A | | |
| nominal voltage | 60 V DC | 125 V AC | | 250 V AC |
| test voltage | 1000 V | 1500 V | | 500 V |
| insulating body material | | PPS | | PA 4.6. GF |
| temperature range | | -40°C... +200°C/ (260°C/10 s) | | -40°C... +163°C/ (260°C/10 s) |
| class of inflammability | | UL 94 V-0 | | |
| specific insulation resistance | | >10 ¹² Ω·m | >10 ¹² Ω | >10 ⁷ Ω·m |

Technical data: PCB connectors

| | BL 12 ..., BL 21 ... | BL 5 - 10 ... | BL KG 3 ... | BL 15 - 17 SMD ..., BL 20 SMD ..., BL 5 - 10 ... |
|---|---|--|----------------------------------|--|
| contact material | CuSn alloy | CuZn-alloy | | |
| surface contact / contact sleeve | Ni+ $\geq 0,2\mu\text{m}$ Au (selective)/ Ni+4... $6\mu\text{m}$ Sn | Ni+4... $6\mu\text{m}$ Sn | | |
| inner contact spring material | | CuBe-alloy | | |
| inner contact spring surface | | Ni+0,75 μm Au | | |
| type internal spring | spring contact | 6-fingers | | |
| plugability for circuit points | $\square 0,6...0,65\text{mm}$ | $\square 0,55...0,65\text{mm}/ \varnothing 0,65...0,85\text{mm}$ | | |
| insert depth | $\geq 6\text{mm}$ from above or from below | 2.5...6mm | | |
| insertion / drawing force | 1.5 N/0.2 N | 1.3N/0.3N | | |
| shock resistance | | 50 g | | 50 g |
| volume resistance | $\leq 20\text{ m}\Omega$ | $\leq 10\text{ m}\Omega$ | | $\leq 10\text{ m}\Omega$ |
| vibration resistance max. | | 15 g | | 15 g |
| capacity between two adjacent contacts | $\leq 0,9\text{ pF}$ | $\leq 0,3\text{ pF}$ | | $\leq 0,3\text{ pF}$ |
| nominal current | 3 A | | | |
| nominal voltage | 250 V AC | 150 V DC | | |
| test voltage | 500 V | 1500 V | 500 V | 1500 V |
| insulating body material | LCP | PA 4.6. GF | PCT, GF | PA 4.6. GF |
| temperature range | -55°C... +125°C | -40°C... +163°C/ (260°C/10 s) | -55°C... +125°C/ (260°C/10 s) | -40°C... +163°C/ (260°C/10 s) |
| class of inflammability | UL 94 V-0 | | | |
| specific insulation resistance | $> 10^{12}\ \Omega\cdot\text{m}$ | $> 10^7\ \Omega\cdot\text{m}$ | | $> 10^7\ \Omega\cdot\text{m}$ |

Technical data: PCB connectors

| | BL 13 ..., BL 14 ..., BL 18 ..., BL 19 ... | BL ... SHK ... | MK 21/221 ..., MK 22/222 ..., MK 24 SMD ... | MK 01/201 ..., MK 220 SMD ..., MK 228 THR ..., MK 23/223 ..., MK 25 SMD ... |
|---|---|---|---|--|
| contact material | CuZn-alloy | | | |
| surface contact / contact sleeve | Ni+ $\geq 0.2\mu\text{m}$ Au | | Ni+4... $6\mu\text{m}$ Sn | |
| inner contact spring material | CuBe-alloy | | CuBe-alloy | |
| inner contact spring surface | Ni+0,75 μm Au | | Ni+0,75 μm Au | Ni+0,25 μm Au |
| type internal spring | 6-fingers | fork contact | 6-fingers | 4-fingers |
| plugability for circuit points | $\square 0,55...0,65\text{mm}/$ $\varnothing 0,65...0,85\text{mm}$ | $\square 0,64\text{mm}/ \square 1,14\text{mm}$ | $\square 0,55...0,65\text{mm}/$ $\varnothing 0,65...0,85\text{mm}$ | $\square 0,22 \times 0,25\text{mm}...$ $\square 0,4 \times 0,55\text{mm}/$ $\varnothing 0,4...0,56\text{mm}$ |
| insert depth | 2.5...6mm | 3.3...5.7mm | 2.5...3.6mm | |
| insertion / drawing force | 1.3N/0.3N | | 1.3N/0.3N | 1.8 N/1.4 N |
| shock resistance | 50 g | | 50 g | |
| volume resistance | $\leq 10 \text{ m}\Omega$ | | | |
| vibration resistance max. | 15 g | | 15 g | |
| capacity between two adjacent con- tacts | $\leq 0,3 \text{ pF}$ | | $\leq 0,3 \text{ pF}$ | $\leq 0,4 \text{ pF}$ |
| nominal current | 3 A | 8.2 A/ 3 A | 3 A | 1.5 A |
| nominal voltage | 150 V DC | 250 V AC | 150 V DC | 60 V DC |
| test voltage | 1500 V | 1000 V | 1500 V | 1000 V |
| insulating body material | PA 4.6. GF | PCT, GF | PA 4.6. GF | |
| temperature range | -40°C... +163°C/ (260°C/10 s) | -40°C ... +105°C (260°C / 10s) | -40°C... +163°C/ (260°C/10 s) | |
| class of inflammability | UL 94 V-0 | | | |
| specific insulation resistance | $> 10^7 \Omega \cdot \text{m}$ | | $> 10^7 \Omega \cdot \text{m}$ | |
| | BLP 1 ..., BLP 2 ... | BL LP ... LED ... | BLY ... | BLY ... SHK ... |
| contact material | CuZn-alloy | | CuSn alloy | |
| surface contact / contact sleeve | Ni+4... $6\mu\text{m}$ Sn | Ni+ $\geq 0.2\mu\text{m}$ Au (se- lective)/ Ni+2... $4\mu\text{m}$ Sn (matt finished tin) | Ni+4... $6\mu\text{m}$ Sn | Ni+ $\geq 0.2\mu\text{m}$ Au |
| inner contact spring material | CuBe-alloy | | CuBe-alloy | |
| inner contact spring surface | Ni+0,75 μm Au | | Ni+0,25 μm Au | |
| type internal spring | 6-fingers | fork contact | 6-fingers | fork contact |
| plugability for circuit points | $\square 0,55...0,65\text{mm}/$ $\varnothing 0,65...0,85\text{mm}$ | $\square 0,5...0,7\text{mm}$ | $\square 0,45...0,5\text{mm}/$ $\varnothing 0,4...0,56\text{mm}$ | $\square 0,45...0,5\text{mm}/$ $\square 1,14\text{mm}$ |
| insert depth | 2.5...6mm | 2...4mm | 2.5...3.8mm | |
| insertion / drawing force | 1.3N/0.3N | 2N/1.5N | 1.3N/0.3N | |
| shock resistance | 50 g | | 50 g | |
| volume resistance | $\leq 10 \text{ m}\Omega$ | | | |
| vibration resistance max. | 15 g | | 15 g | |
| capacity between two adjacent con- tacts | $\leq 0,3 \text{ pF}$ | $\leq 0,9 \text{ pF}$ | $\leq 0,7 \text{ pF}$ | |
| nominal current | 2 A | 3 A | 2.5 A | 8.2 A/ 2.5 A |
| nominal voltage | 150 V DC | 125 V AC | 100 V DC | 250 V AC |
| test voltage | 1000 V | 1500 V | 500 V | |
| insulating body material | PA 4.6. GF | LCP | PA 4.6. GF | PCT, GF |
| temperature range | -40°C... +163°C/ (260°C/10 s) | -40°C...+230°C/ (260°C/10 s) | -40°C... +163°C/ (260°C/10 s) | -40°C ... +105°C (260°C / 10s) |
| class of inflammability | UL 94 V-0 | | | |
| specific insulation resistance | $> 10^7 \Omega \cdot \text{m}$ | $> 10^{15} \Omega \cdot \text{cm}$ | $> 10^7 \Omega \cdot \text{m}$ | |

Technical data: PCB connectors

| | BLM ... | BLV 2 ... | BLR ... | DF 2 ... |
|---|--|--------------------------------|------------------------------------|-----------------|
| contact material | CuSn alloy | | CuZn-alloy | CuSn alloy |
| surface contact / contact sleeve | Ni+ $\geq 0.2\mu\text{m Au}$ / Ni+ $4...6\mu\text{m Sn}$ | Ni+ $\geq 0.2\mu\text{m Au}$ | Ni+ $4...6\mu\text{m Sn}$ | |
| inner contact spring material | | | CuBe-alloy | |
| inner contact spring surface | | | Ni+ $0,25\mu\text{m Au}$ | |
| type internal spring | fork contact | | 3-fingers | |
| plugability for circuit points | $\square 0,3...0,4\text{mm}$ | $\square 0,4\text{mm}$ | $\varnothing 0,35...0,46\text{mm}$ | |
| insert depth | 2.5...6mm | 2.5...4.2 | 2.5...3mm | |
| insertion / drawing force | 1.3 N/1.1 N | | 1.2N/0.6N | |
| shock resistance | | | 50 g | |
| volume resistance | $\leq 10\text{ m}\Omega$ | | $\leq 20\text{ m}\Omega$ | |
| vibration resistance max. | | | 15 g | |
| capacity between two adjacent contacts | $\leq 0,4\text{ pF}$ | | $\leq 1,0\text{ pF}$ | |
| nominal current | 1.5 A | 1 A | | 2 A |
| nominal voltage | 125 V AC | 100 V DC | | 125 V AC |
| test voltage | 500 V | | | |
| insulating body material | PA 4.6. GF | PCT, GF | | polycarbonate |
| temperature range | -40°C... +163°C / (260°C/10 s) | -40°C... +105°C / (260°C/10 s) | | -40°C... +125°C |
| class of inflammability | UL 94 V-0 | | | |
| specific insulation resistance | $> 10^7\ \Omega\cdot\text{m}$ | | | |
| PCB thickness | | | | 0,7...0,9 mm |

A

Technical data: PCB connectors

B

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| | DF OB ... | CAB 5 ... | CAB 4 G ... | CAB 6 ... |
|---|--|-----------------------------|--------------------|-----------------------------|
| contact material | CuSn alloy | | | |
| surface contact / contact sleeve | Ni+7µm Sn | 0.5 µm Au/ 1 µm Au/ 5 µm Sn | 0.1 µm Au/ 5 µm Sn | 0.5 µm Au/ 1 µm Au/ 5 µm Sn |
| type internal spring | spring contact | | | |
| insert depth | | 4...5.5mm | 4...6.1mm | 5mm...plug through |
| nominal current | | 3 A | | 1.5 A |
| nominal voltage | 125 V AC | | 250 V AC | |
| test voltage | 800 V | | | |
| insulating body material | PA 4.6. GF | PA 66 | PBT | PA 66 |
| temperature range | -40°C... +125°C/ (260°C/10 s) | | -40°C... +105°C | |
| class of inflammability | UL 94 V-0 | | | |
| PCB thickness | 1,4...1,8 mm | | | |
| mounting | without mounting eye-lets | | | |
| | CAB 9 ... | CAB 10 G S | CAB 11 G S | CAB 15 G S |
| surface contact / contact sleeve | | 0.1 µm Au | | <0.1µm Au |
| insert depth | 4...5.6mm | 4mm...plug through | 5mm...plug through | 2.2...2.4mm |
| nominal current | 3 A | 1.5 A | | 1 A |
| nominal voltage | 500 V AC | 150 V DC | | 100 V AC |
| insulating body material | | PBT | | PA 66 |
| temperature range | -40°C... +105°C/ (re- sistance to soldering heat 235°C/30-60s) | -40°C... +105°C | | -40°C... +150°C |
| | CAB 16 G ... | | | |
| surface contact / contact sleeve | <0.1µm Au | | | |
| insert depth | 2.2...2.4mm | | | |
| nominal current | 1 A | | | |
| nominal voltage | 100 V AC | | | |
| insulating body material | PBT | | | |
| temperature range | -40°C... +105°C | | | |

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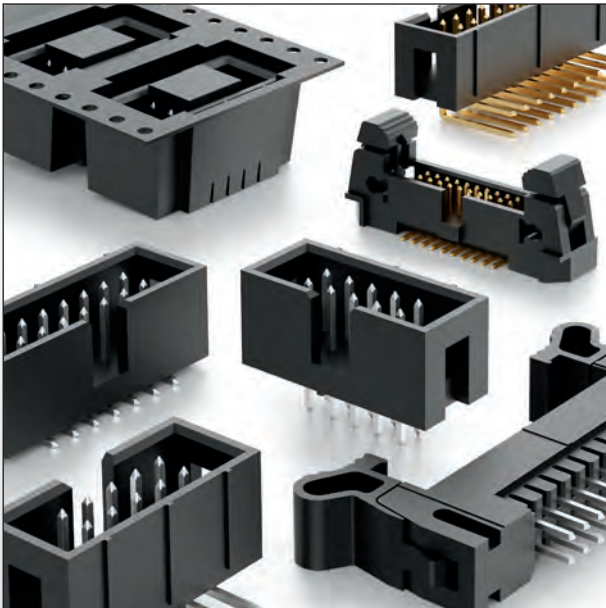
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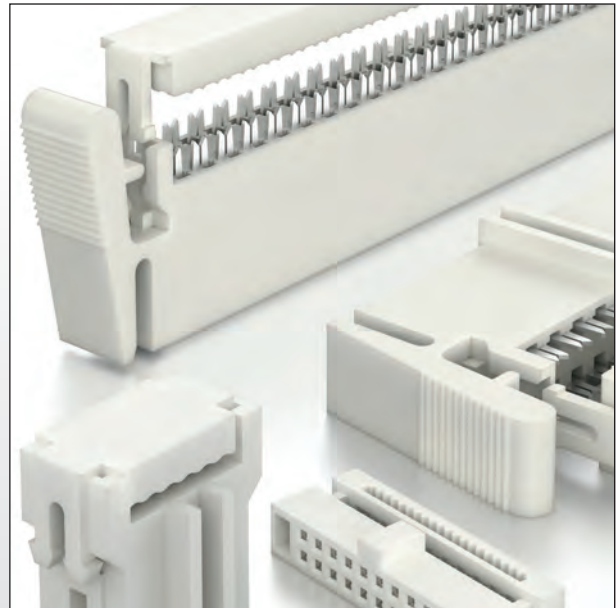
M

N



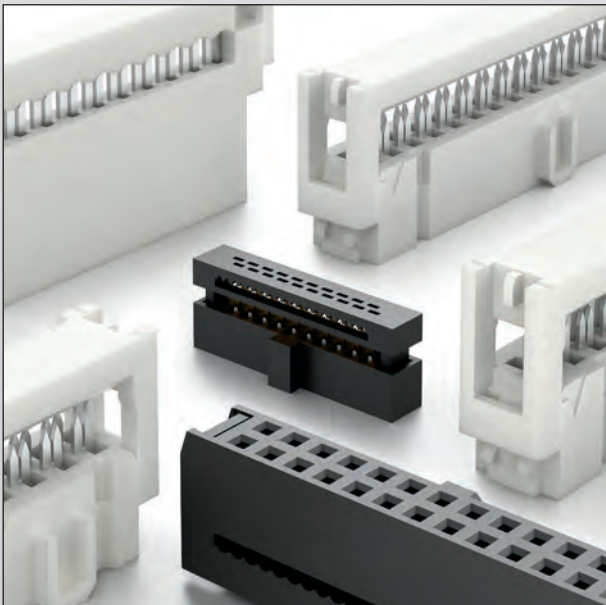
Shroud male headers

- shroud male headers for lockable multipoint connector
- version: 2 rows, 6 contacts up to 50 contacts, grid 2,54 mm
- straight, angled and for SMD technology
- reflow solderable insulator
- class of flammability acc. to UL 94 V-0



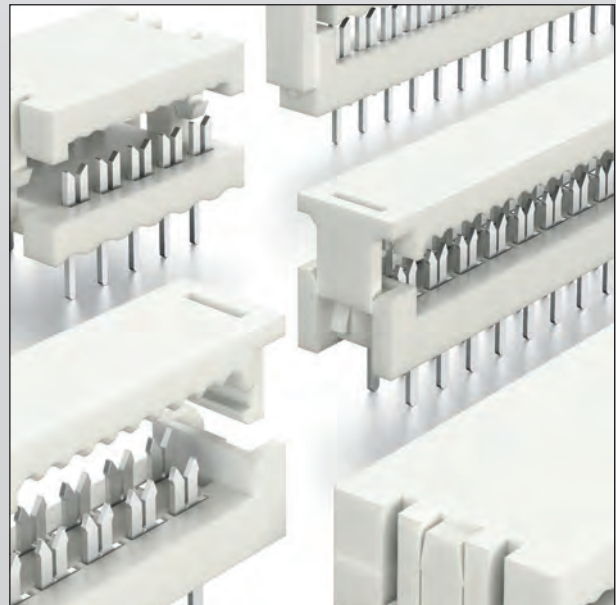
Multipoint connectors with and without lock

- multipoint connector for ribbon cable
- version: two rows, 6 contacts up to 50 contacts, grid 2,54mm
- version without lock
- with polarisation



Multipoint connectors, one and two rows

- multipoint connector for ribbon cable
- two rows with and without pull relief, grid 2,54, 6 contacts up to 50 contacts
- two rows in grid 2,0 mm, 20 contacts up to 50 contacts
- polarisation at the two row version
- one row in grid 2,54 mm, 3 contacts up to 25 contacts



PCB connectors

- PCB connector for ribbon cable
- one row in grid 2,54 mm, 4 contacts up to 20 contacts
- two rows in grid 2,54 mm, 6 contacts up to 34 contacts
- two rows in DIL design, grid 2,54 mm, 4 contacts up to 40 contacts

Shroud-male header

Straight, two rows, shrouded

- suitable for female multipoint connector **VFL ...** → H 11, **FLMP ...** → H 11, **PV ...** → H 12
- in addition they can be combined with many other ribbon cable connectors in 2.54 mm pitch
- gold-plated plug-in area and tin-plated soldering area or completely tin plated available!

| art. no. | no. of contacts | dim. [mm] | | | art. no. | no. of contacts | dim. [mm] | | |
|-------------------------|-----------------|--|------|-------|--------------------|-----------------|-----------|------|-------|
| | | A | B | C | | | A | B | C |
| ASLG 06 ... | 6 | 15.3 | 12.7 | 5.08 | ASLG 20 ... | 20 | 33.1 | 30.5 | 22.86 |
| ASLG 08 ... | 8 | 17.8 | 15.2 | 7.62 | ASLG 26 ... | 26 | 40.7 | 38.1 | 30.48 |
| ASLG 10 ... | 10 | 20.4 | 17.8 | 10.16 | ASLG 34 ... | 34 | 50.9 | 48.3 | 40.64 |
| ASLG 12 ... | 12 | 22.9 | 20.3 | 12.70 | ASLG 40 ... | 40 | 58.5 | 55.9 | 48.26 |
| ASLG 14 ... | 14 | 25.4 | 22.9 | 15.24 | ASLG 50 ... | 50 | 71.2 | 68.6 | 60.96 |
| ASLG 16 ... | 16 | 28.0 | 25.4 | 17.78 | | | | | |
| please indicate: | | ... surface of contact G = gold-plated Z = tin-plated | | | | | | | |

Angled, two rows, shrouded

- suitable for female multipoint connector **VFL ...** → H 11, **FLMP ...** → H 11, **PV ...** → H 12
- in addition they can be combined with many other ribbon cable connectors in 2.54 mm pitch
- gold-plated plug-in area and tin-plated soldering area available!

| art. no. | no. of contacts | dim. [mm] | | | | | | | |
|------------------|-----------------|-----------|------|-------|--|--|--|--|--|
| | | A | B | C | | | | | |
| ASLA 06 G | 6 | 15.3 | 12.7 | 5.08 | | | | | |
| ASLA 08 G | 8 | 17.8 | 15.2 | 7.62 | | | | | |
| ASLA 10 G | 10 | 20.4 | 17.8 | 10.16 | | | | | |
| ASLA 12 G | 12 | 22.9 | 20.3 | 12.70 | | | | | |
| ASLA 14 G | 14 | 25.4 | 22.9 | 15.24 | | | | | |
| ASLA 16 G | 16 | 28.0 | 25.4 | 17.78 | | | | | |
| ASLA 20 G | 20 | 33.1 | 30.5 | 22.86 | | | | | |
| ASLA 26 G | 26 | 40.7 | 38.1 | 30.48 | | | | | |
| ASLA 34 G | 34 | 50.9 | 48.3 | 40.64 | | | | | |
| ASLA 40 G | 40 | 58.5 | 55.9 | 48.26 | | | | | |
| ASLA 50 G | 50 | 71.2 | 68.6 | 60.96 | | | | | |

Shroud-male header

SMD, two rows, shrouded

- suitable for female multipoint connector **VFL ...** → H 11, **FLMP ...** → H 11, **PV ...** → H 12
- **VPE** = packing unit (pieces/tube)
- gold-plated plug-in area and tin-plated soldering area or completely tin-plated available!
- in addition they can be combined with many other ribbon cable connectors in 2.54 mm pitch

| | art. no. | no. of contacts | packing unit | dim. [mm] A B | | | art. no. | no. of contacts | packing unit |
|-------------------------|----------|--|--------------|---------------------|--|----|----------|-----------------|--------------|
| ASL 06 SMD ... | 6 | 32 | 15.3 | 5.08 | ASL 20 SMD ... | 20 | 15 | 33.1 | 22.86 |
| ASL 08 SMD ... | 8 | 27 | 17.8 | 7.62 | ASL 26 SMD ... | 26 | 12 | 40.7 | 30.48 |
| ASL 10 SMD ... | 10 | 24 | 20.4 | 10.16 | ASL 34 SMD ... | 34 | 9 | 50.9 | 40.64 |
| ASL 12 SMD ... | 12 | 21 | 22.9 | 12.70 | ASL 40 SMD ... | 40 | 8 | 58.5 | 48.26 |
| ASL 14 SMD ... | 14 | 19 | 25.4 | 15.24 | ASL 50 SMD ... | 50 | 7 | 71.2 | 60.96 |
| ASL 16 SMD ... | 16 | 17 | 28.0 | 17.78 | | | | | |
| <p>please indicate:</p> | | <p>... surface of contact G = gold-plated Z = tin-plated</p> | | | <p>... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (300pcs/reel)</p> | | | | |

... packing (option) - additions:
ASL ... SMD ... B TR: 06 contacts; 08 contacts; 10 contacts; 26 contacts

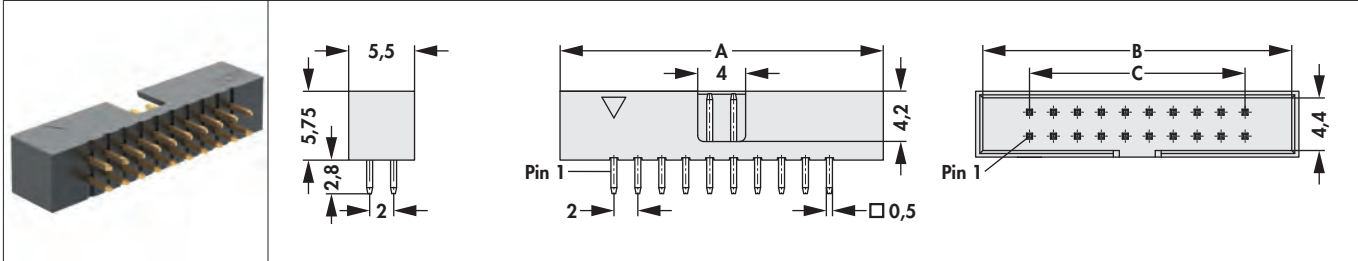
Option for automatic assembly

| | | | |
|----------|--------------------------|----------------------|--|
| | | | |
| ... B SM | ASL ... SMD ... | ASL ... SMD ... B SM | |
| | | | |
| ... B TR | ASL 26 SMD ... B TR | | |
| | | | |
| ... B TR | ASL 06 - 10 SMD ... B TR | | |

Shroud-male header

Straight, two rows, shrouded

- suitable for female multipoint connector **PVY ...** → H 13
- they are also combinable with many other ribbon cable female multipoint connectors in grid 2.00 mm
- contacts are available in gold-plated, tin-plating upon request!



| art. no. | no. of contacts | dim. [mm] | | |
|-------------------|-----------------|-----------|------|----|
| | | A | B | C |
| ASLGY 10 G | 10 | 17 | 15.8 | 8 |
| ASLGY 20 G | 20 | 27 | 25.8 | 18 |
| ASLGY 26 G | 26 | 33 | 31.8 | 24 |
| ASLGY 40 G | 40 | 47 | 45.8 | 38 |
| ASLGY 44 G | 44 | 51 | 49.8 | 42 |
| ASLGY 50 G | 50 | 57 | 55.8 | 48 |

A

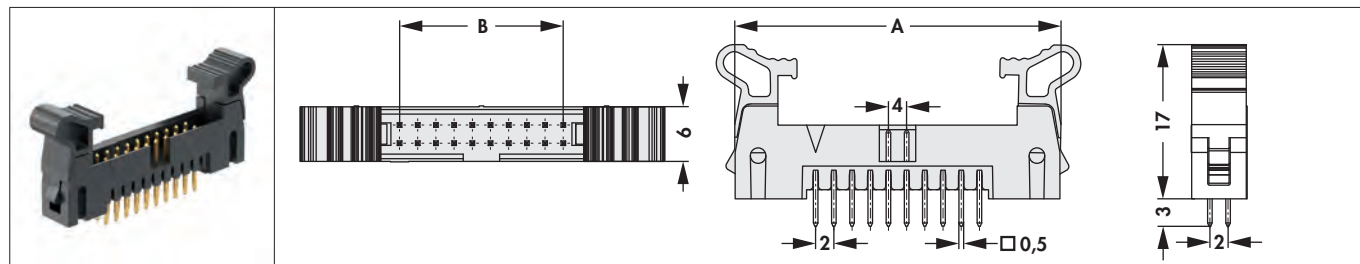
Shroud-male header

B

Straight, two rows, shrouded and with lock

- suitable for female multipoint connector **PVY ...** → H 13
- they are also combinable with many other ribbon cable female multipoint connectors in grid 2.00 mm
- contacts are available in gold-plated, tin-plating upon request!

C



D

| art. no. | no. of contacts | dim. [mm] | |
|-------------------|-----------------|-----------|----|
| | | A | B |
| VSLGY 10 G | 10 | 25.7 | 8 |
| VSLGY 20 G | 20 | 35.7 | 18 |
| VSLGY 26 G | 26 | 41.7 | 24 |
| VSLGY 40 G | 40 | 55.7 | 38 |
| VSLGY 44 G | 44 | 59.7 | 42 |
| VSLGY 50 G | 50 | 65.7 | 48 |

F

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H 5

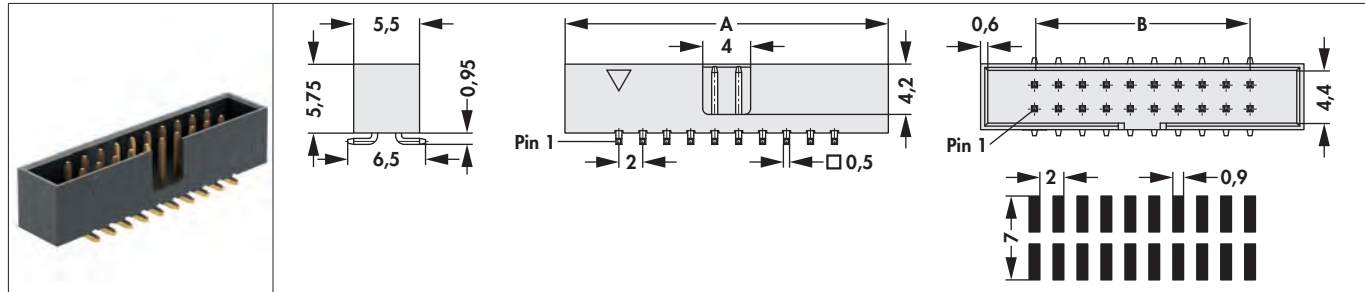
Technical data

→ H 18 – 19

Shroud-male header

SMD, two rows, shrouded

- suitable for female multipoint connector **PVY ...** → H 13
- they are also combinable with many other ribbon cable female multipoint connectors in grid 2.00 mm
- contacts are available in gold-plated, tin-plating upon request!

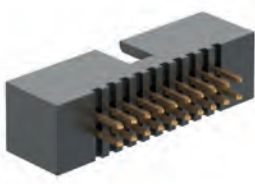
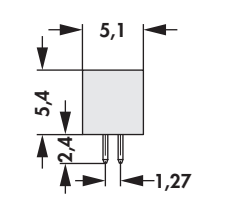
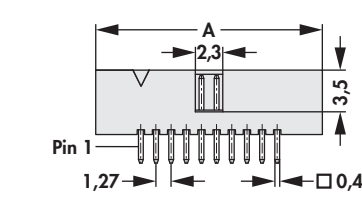
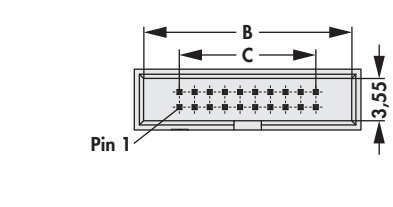


| art. no. | no. of contacts | dim. [mm] | |
|----------------------|-----------------|-----------|----|
| | | A | B |
| ASLY 10 SMD G | 10 | 17 | 8 |
| ASLY 20 SMD G | 20 | 27 | 18 |
| ASLY 26 SMD G | 26 | 33 | 24 |
| ASLY 40 SMD G | 40 | 47 | 38 |
| ASLY 44 SMD G | 44 | 51 | 42 |
| ASLY 50 SMD G | 50 | 57 | 48 |

Shroud-male header

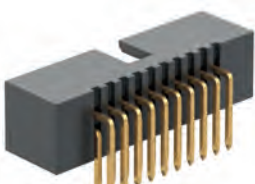
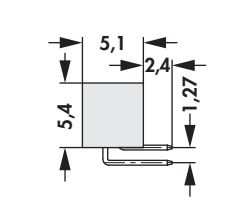
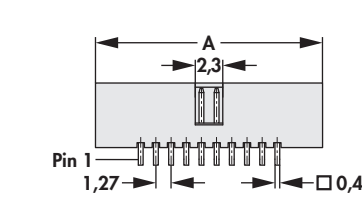
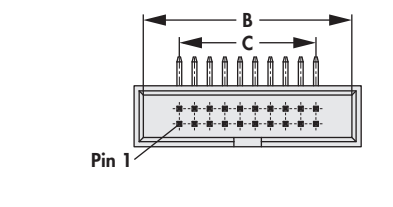
Straight, two rows, shrouded

- suitable for female multipoint connector **PVV ...** → H 14
- they are also combinable with many other ribbon cable female multipoint connectors in grid 1.27 mm
- contacts are available in gold-plated, tin-plating upon request!

|  |  |  |  | |
|---|---|--|---|-------|
| art. no. | no. of contacts | dim. [mm] | | |
| | | A | B | C |
| ASLGV 10 G | 10 | 12.65 | 11.10 | 5.08 |
| ASLGV 20 G | 20 | 19.00 | 17.45 | 11.43 |
| ASLGV 26 G | 26 | 22.80 | 21.25 | 15.24 |
| ASLGV 40 G | 40 | 31.70 | 30.15 | 24.13 |

Angled, two rows, shrouded

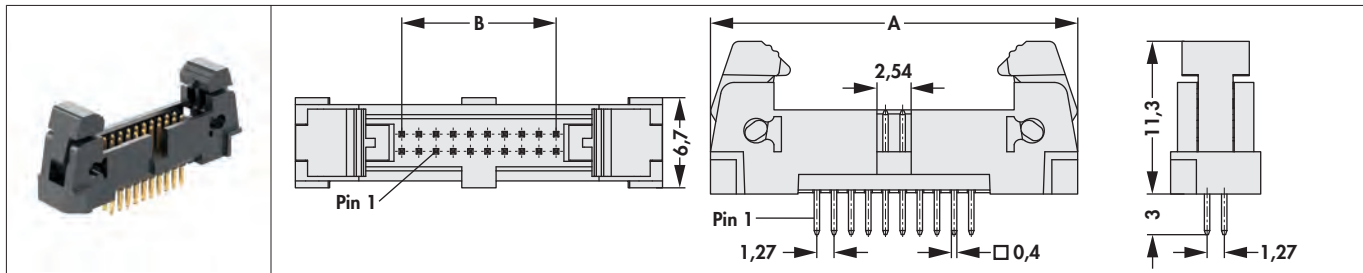
- suitable for female multipoint connector **PVV ...** → H 14
- they are also combinable with many other ribbon cable female multipoint connectors in grid 1.27 mm
- contacts are available in gold-plated, tin-plating upon request!

|  |  |  |  | |
|---|---|--|---|-------|
| art. no. | no. of contacts | dim. [mm] | | |
| | | A | B | C |
| ASLAV 10 G | 10 | 12.65 | 11.10 | 5.08 |
| ASLAV 20 G | 20 | 19.00 | 17.45 | 11.43 |
| ASLAV 26 G | 26 | 22.80 | 21.25 | 15.24 |
| ASLAV 40 G | 40 | 31.70 | 30.15 | 24.13 |

Shroud-male header

Straight, two rows, shrouded and with lock

- suitable for female multipoint connector **PVV ...** → H 14
- they are also combinable with many other ribbon cable female multipoint connectors in grid 1.27 mm
- contacts are available in gold-plated, tin-plating upon request!



| art. no. | no. of contacts | dim. [mm] | |
|-------------------|-----------------|-----------|-------|
| | | A | B |
| VSLGV 10 G | 10 | 20.83 | 5.08 |
| VSLGV 20 G | 20 | 27.18 | 11.43 |
| VSLGV 26 G | 26 | 30.89 | 15.24 |
| VSLGV 40 G | 40 | 39.88 | 24.13 |

Shroud-male header

SMD, two rows, shrouded

- suitable for female multipoint connector **PVV ...** → H 14
- they are also combinable with many other ribbon cable female multipoint connectors in grid 1.27 mm
- contacts are available in gold-plated, tin-plating upon request!

| art. no. | no. of contacts | dim. [mm] | |
|----------------------|-----------------|-----------|-------|
| | | A | B |
| ASLV 10 SMD G | 10 | 6.35 | 5.08 |
| ASLV 20 SMD G | 20 | 12.70 | 11.43 |
| ASLV 26 SMD G | 26 | 16.51 | 15.24 |
| ASLV 40 SMD G | 40 | 25.40 | 24.13 |

SMD, two rows, shrouded and with lock

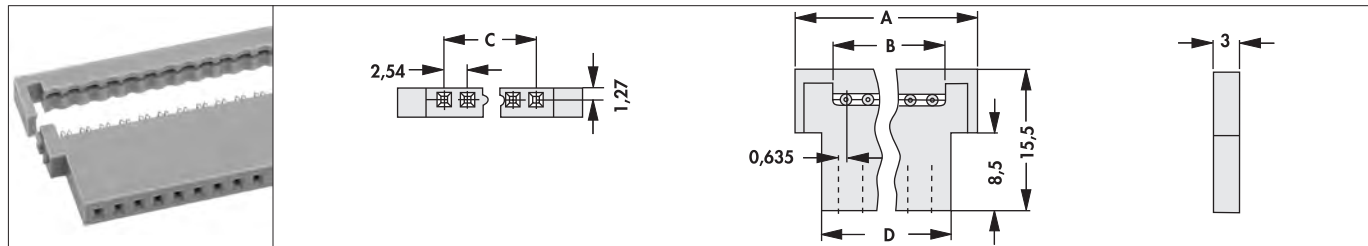
- suitable for female multipoint connector **PVV ...** → H 14
- they are also combinable with many other ribbon cable female multipoint connectors in grid 1.27 mm
- contacts are available in gold-plated, tin-plating upon request!

| art. no. | no. of contacts | dim. [mm] | | |
|----------------------|-----------------|-----------|-------|--|
| | | A | B | |
| VSLV 10 SMD G | 10 | 20.83 | 5.08 | |
| VSLV 20 SMD G | 20 | 27.18 | 11.43 | |
| VSLV 26 SMD G | 26 | 30.89 | 15.24 | |
| VSLV 40 SMD G | 40 | 39.88 | 24.13 | |

Female connector

One row

– excess length of the ribbon cable to the case at ≥ 1 mm!



| art. no. | no. of contacts | dim. [mm] | | | |
|-----------|-----------------|-----------|-------|-------|-------|
| | | A | B | C | D |
| FV 03 ... | 3 | 15.24 | 7.62 | 5.08 | 8.89 |
| FV 04 ... | 4 | 17.78 | 10.16 | 7.62 | 11.43 |
| FV 05 ... | 5 | 20.32 | 12.70 | 10.16 | 7.62 |
| FV 06 ... | 6 | 22.86 | 15.24 | 5.08 | 16.51 |
| FV 07 ... | 7 | 25.40 | 17.78 | 15.24 | 19.05 |
| FV 08 ... | 8 | 27.94 | 20.32 | 17.78 | 21.59 |
| FV 10 ... | 10 | 33.02 | 25.40 | 22.86 | 26.67 |
| FV 12 ... | 12 | 38.10 | 30.48 | 27.94 | 31.75 |
| FV 13 ... | 13 | 40.64 | 33.02 | 30.48 | 34.29 |
| FV 14 ... | 14 | 43.18 | 35.66 | 33.02 | 36.83 |
| FV 16 ... | 16 | 48.26 | 40.64 | 38.10 | 41.91 |
| FV 17 ... | 17 | 50.80 | 43.18 | 40.64 | 44.45 |
| FV 18 ... | 18 | 53.34 | 45.72 | 43.18 | 46.99 |
| FV 20 ... | 20 | 58.42 | 50.80 | 48.26 | 52.07 |
| FV 24 ... | 24 | 68.58 | 60.96 | 58.42 | 62.23 |
| FV 25 ... | 25 | 71.12 | 63.50 | 60.96 | 64.77 |

please indicate: ... surface of contact
G = gold-plated
Z = tin-plated


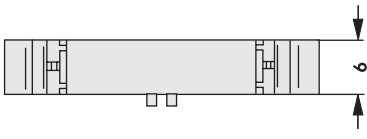
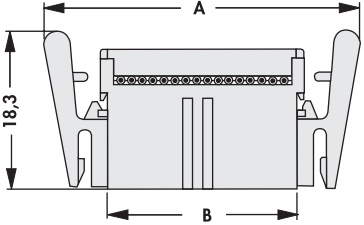
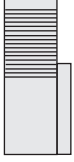
| | |
|---|---|
| annotation: | IDC-pattern 2.54mm |
| cross-section: | AWG 28...30 = 0,09...0,05 mm ² |
| insulation diameter: | $\leq 1,1$ mm |
| suitable ribbon cable round conductor flat cable: | AWG 28 = massive or strand |
| recommended connector pins: | $\square 0,635$ mm |

A
B
C
D
E
F
G
H
I
K
L
M
N


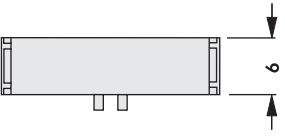
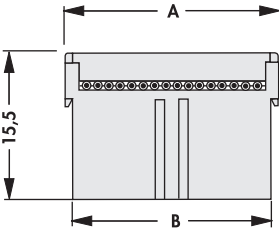
Female connector

Two rows, with polarisation

– lockable female multipoint connector, suitable for shrouded male header **ASL ...**

|  | |  | |  | |  | |
|--|-----------------|---|-------|--|-----------------|---|-------|
| art. no. | no. of contacts | dim. [mm] | | art. no. | no. of contacts | dim. [mm] | |
| | | A | B | | | A | B |
| VFL 06 ... | 6 | 23.58 | 9.56 | VFL 20 ... | 20 | 41.36 | 27.34 |
| VFL 08 ... | 8 | 26.12 | 12.10 | VFL 26 ... | 26 | 48.98 | 34.96 |
| VFL 10 ... | 10 | 28.66 | 14.64 | VFL 34 ... | 34 | 59.14 | 45.12 |
| VFL 12 ... | 12 | 31.20 | 17.18 | VFL 40 ... | 40 | 66.76 | 52.74 |
| VFL 14 ... | 14 | 33.74 | 19.72 | VFL 50 ... | 50 | 79.46 | 65.44 |
| VFL 16 ... | 16 | 36.28 | 22.26 | | | | |
| <p>please indicate: ... surface of contact G = gold-plated Z = tin-plated</p> | | | | | | | |

– suitable for shrouded male header **ASL ...**
 – excess length of the ribbon cable to the case at ≥ 1 mm!

|  | |  | |  | | | |
|--|-----------------|---|-------|--|-----------------|-----------|-------|
| art. no. | no. of contacts | dim. [mm] | | art. no. | no. of contacts | dim. [mm] | |
| | | A | B | | | A | B |
| FLMP 06 ... | 6 | 10.97 | 9.56 | FLMP 20 ... | 20 | 28.75 | 27.34 |
| FLMP 08 ... | 8 | 13.51 | 12.10 | FLMP 26 ... | 26 | 36.37 | 34.96 |
| FLMP 10 ... | 10 | 16.05 | 14.64 | FLMP 34 ... | 34 | 46.53 | 45.12 |
| FLMP 12 ... | 12 | 18.59 | 17.18 | FLMP 40 ... | 40 | 54.15 | 52.74 |
| FLMP 14 ... | 14 | 21.13 | 19.72 | FLMP 50 ... | 50 | 66.85 | 65.44 |
| FLMP 16 ... | 16 | 23.67 | 22.26 | | | | |
| <p>please indicate: ... surface of contact G = gold-plated Z = tin-plated</p> | | | | | | | |
| annotation: | | IDC-pattern 1.27mm | | | | | |
| cross-section: | | AWG 28...30 = 0,09...0,05 mm ² | | | | | |
| insulation diameter: | | $\leq 1,1$ mm | | | | | |
| suitable ribbon cable round conductor flat cable: | | AWG 28 = massive or strand | | | | | |

Female connector

Two rows, with polarisation

- suitable for shrouded male header **ASL ...**
- excess length of the ribbon cable to the case at ≥ 1 mm!

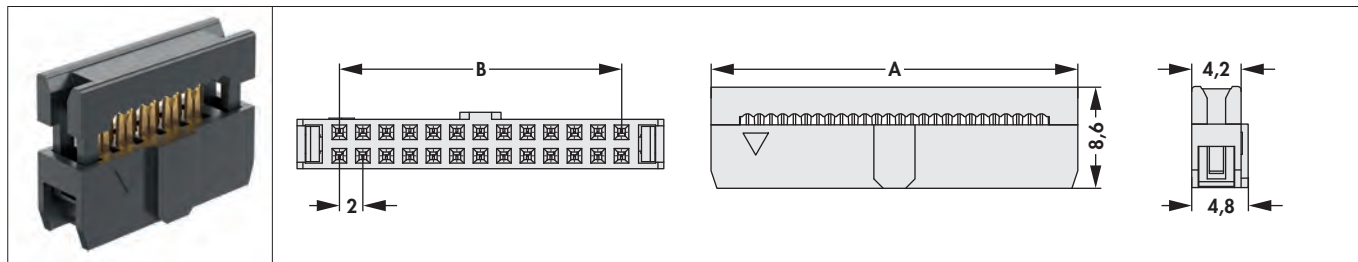
| art. no. | no. of contacts | suitable strain relief | dim. [mm] | | art. no. | no. of contacts | suitable strain relief | dim. [mm] | |
|--|-----------------|---|-----------|-------|----------------|-----------------|------------------------|-----------|-------|
| PV 06 G | 6 | ZEPV 06 | 12.2 | 5.08 | PV 26 G | 26 | ZEPV 26 | 37.6 | 30.48 |
| PV 10 G | 10 | ZEPV 10 | 17.3 | 10.16 | PV 34 G | 34 | ZEPV 34 | 47.8 | 40.64 |
| PV 14 G | 14 | ZEPV 14 | 22.4 | 15.24 | PV 40 G | 40 | ZEPV 40 | 55.4 | 48.26 |
| PV 16 G | 16 | ZEPV 16 | 24.9 | 17.78 | PV 50 G | 50 | ZEPV 50 | 68.1 | 60.96 |
| PV 20 G | 20 | ZEPV 20 | 30.0 | 22.86 | | | | | |
| surface of contact: | | gold-plated | | | | | | | |
| annotation: | | IDC-pattern 1.27mm | | | | | | | |
| cross-section: | | AWG 28...30 = 0,09...0,05 mm ² | | | | | | | |
| insulation diameter: | | $\leq 1,1$ mm | | | | | | | |
| suitable ribbon cable round conductor flat cable: | | AWG 28 = massive or strand | | | | | | | |

| art. no. | no. of contacts | dim. [mm] | | art. no. | no. of contacts | dim. [mm] | |
|----------------|-----------------|-----------|-------|----------------|-----------------|-----------|-------|
| ZEPV 06 | 6 | A | B | ZEPV 26 | 26 | A | B |
| ZEPV 10 | 10 | 12.2 | 5.08 | ZEPV 34 | 34 | 47.8 | 40.64 |
| ZEPV 14 | 14 | 17.3 | 10.16 | ZEPV 40 | 40 | 55.4 | 48.26 |
| ZEPV 16 | 16 | 22.4 | 15.24 | ZEPV 50 | 50 | 68.1 | 60.96 |
| ZEPV 20 | 20 | 24.9 | 17.78 | | | | |
| | | 30.0 | 22.86 | | | | |

Female connector

Two rows

- Suitable for **ASLGY ...**, **ASLY ... SMD** and **VSLGY ...**
- Protrusion length of the ribbon cable to the case ≥ 1 mm!

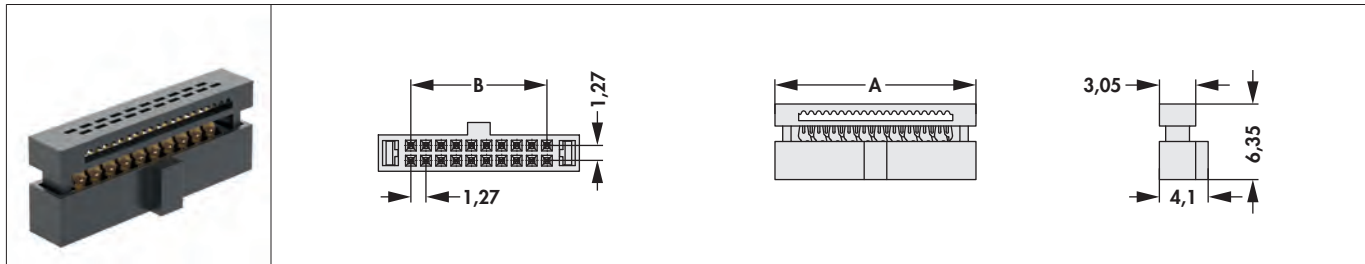


| art. no. | no. of contacts | dim. [mm] | |
|------------------------------------|-----------------|-----------------------|----|
| | | A | B |
| PVY 10 S | 10 | 15.2 | 8 |
| PVY 20 S | 20 | 25.1 | 18 |
| PVY 26 S | 26 | 31.2 | 24 |
| PVY 40 S | 40 | 45.3 | 38 |
| PVY 44 S | 44 | 49.3 | 42 |
| PVY 50 S | 50 | 55.1 | 48 |
| surface of contact: | | selective gold-plated | |
| annotation: | | IDC-pattern, 1 mm | |
| recommended connector pins: | | □ 0,5 mm | |

Female connector

Two rows

- Suitable for **ASLGV ...**, **ASLAV ...**, **VSLGV ...**, **ASLV ... SMD** und **VSLV ... SMD**
- Protrusion length of the ribbon cable to the case ≥ 1 mm!



| art. no. | no. of contacts | dim. [mm] | |
|------------------------------------|---------------------|-----------|-------|
| | | A | B |
| PVV 10 G | 10 | 10.54 | 5.08 |
| PVV 20 G | 20 | 16.89 | 11.43 |
| PVV 26 G | 26 | 20.70 | 15.24 |
| PVV 40 G | 40 | 29.59 | 24.13 |
| surface of contact: | gold-plated | | |
| annotation: | IDC-pattern 0.635mm | | |
| recommended connector pins: | □ 0,4 mm | | |

Printed circuit connector

– excess length of the ribbon cable to the case at ≥ 1 mm!

| art. no. | no. of contacts | dim. [mm] | | |
|--|----------------------------|-----------|-------|-------|
| | | A | B | C |
| SBAU 1 04 Z | 4 | 17.78 | 10.16 | 7.62 |
| SBAU 1 06 Z | 6 | 22.86 | 15.24 | 12.70 |
| SBAU 1 08 Z | 8 | 27.94 | 20.32 | 17.78 |
| SBAU 1 10 Z | 10 | 33.02 | 25.40 | 22.86 |
| SBAU 1 12 Z | 12 | 38.10 | 30.48 | 27.94 |
| SBAU 1 14 Z | 14 | 43.18 | 35.56 | 33.02 |
| SBAU 1 16 Z | 16 | 48.26 | 40.64 | 38.10 |
| SBAU 1 17 Z | 17 | 50.80 | 43.18 | 40.64 |
| SBAU 1 18 Z | 18 | 53.34 | 45.72 | 43.18 |
| SBAU 1 20 Z | 20 | 58.42 | 50.80 | 48.26 |
| surface of contact: | tin-plated | | | |
| annotation: | IDC-pattern 2.54mm | | | |
| insulation diameter: | $\leq 1,1$ mm | | | |
| suitable ribbon cable round conductor flat cable: | AWG 28 = massive or strand | | | |

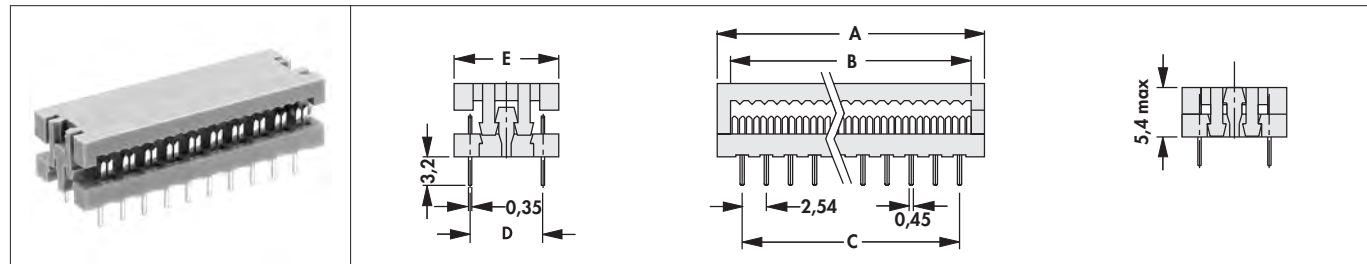
– excess length of the ribbon cable to the case at ≥ 1 mm!

| art. no. | no. of contacts | dim. [mm] | | |
|--|----------------------------|-----------|------|-------|
| | | A | B | C |
| SBAU 06 Z | 6 | 12.9 | 7.8 | 5.08 |
| SBAU 10 Z | 10 | 18.0 | 12.9 | 10.16 |
| SBAU 14 Z | 14 | 23.0 | 18.0 | 15.24 |
| SBAU 16 Z | 16 | 25.6 | 20.5 | 17.78 |
| SBAU 20 Z | 20 | 30.7 | 25.6 | 22.86 |
| SBAU 26 Z | 26 | 38.3 | 33.2 | 30.48 |
| SBAU 34 Z | 34 | 48.5 | 43.4 | 40.64 |
| surface of contact: | tin-plated | | | |
| annotation: | IDC-pattern 1.27mm | | | |
| insulation diameter: | $\leq 1,1$ mm | | | |
| suitable ribbon cable round conductor flat cable: | AWG 28 = massive or strand | | | |

Printed circuit connector

Design DIL


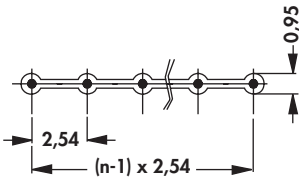
– excess length of the ribbon cable to the case at ≥ 1 mm!



| art. no. | no. of contacts | dim. [mm] | | | | |
|--|----------------------------|-----------|------|-------|-------|------|
| | | A | B | C | D | E |
| KK 04 Z | 4 | 8.0 | 5.1 | 2.54 | 7.62 | 11.0 |
| KK 06 Z | 6 | 10.3 | 7.6 | 5.08 | | |
| KK 08 Z | 8 | 13.0 | 10.2 | 7.62 | | |
| KK 10 Z | 10 | 15.4 | 12.7 | 10.16 | | |
| KK 12 Z | 12 | 18.0 | 15.3 | 5.08 | | |
| KK 14 Z | 14 | 20.5 | 17.8 | 15.24 | | |
| KK 16 Z | 16 | 23.0 | 20.3 | 17.78 | | |
| KK 18 Z | 18 | 25.6 | 22.9 | 20.32 | | |
| KK 20 Z | 20 | 28.1 | 25.4 | 22.86 | 15.24 | 18.7 |
| KK 24 Z | 24 | 33.0 | 30.5 | 27.94 | | |
| KK 28 Z | 28 | 38.1 | 35.6 | 33.02 | | |
| KK 40 Z | 40 | 53.3 | 50.8 | 48.26 | | |
| surface of contact: | tin-plated | | | | | |
| annotation: | IDC-pattern 1.27mm | | | | | |
| insulation diameter: | $\leq 1,1$ mm | | | | | |
| suitable ribbon cable round conductor flat cable: | AWG 28 = massive or strand | | | | | |

Accessories for flat ribbon cable and application tools

Flat ribbon cable - Spacing 2.54 mm - suitable for connectors FV, SBAU 1

| | |
|---|--|
|  |  |
| art. no. BK 01 32 | no. of contacts 32 |

Bench press

- height without handle: 28 cm, weight: 9.02 kg
- the bench press **VBK 1** connects all contacts of IDC connector types **FLMP, FV, KK, PV, PVY, SB, VFL, DS/DB BK 09-37** in one simple operation
- the contacts separate the insulation of the flat ribbon cable, whereas a gas-tight and corrosion-proof connection is effected by the construction of the contacts form

| | |
|--|--|
|  |  |
| art. no. VBK 1 | |

Accessories, suitable for ribbon cable connector

- exchangeable crimping dies for any indicated types available

| | |
|-----------------|---|
| art. no. | suitable for male connectors and female headers |
| KK W | KK |
| PV W | FLMP/ PV/ VFL |
| PVY W | PVY |
| SB W | SB |
| D W 9 37 | D-Sub (9-37 contacts) |

Technical data: IDC-connectors

| | ASL ..., ASLG ... | ASLGY ..., ASLY ... SMD G, VSLGY ... | ASLAV ..., ASLGV ..., ASLV ... SMD G, VSLGV ..., VSLV ... SMD G | FV ... |
|----------------------------------|---|---|---|---|
| surface contact / contact sleeve | Ni+ $\geq 0.2\mu\text{m}$ Au/ Ni +4...8 μm Sn | Ni+ $\geq 0.2\mu\text{m}$ Au | | Ni+ $\geq 0.2\mu\text{m}$ Au/ Ni +5...10 μm Sn |
| contact material | CuSn alloy | Cu-alloy | | CuSn alloy |
| creeping current resistance | | | | KC 175 nach DIN 53480 |
| creepage | $\geq 1,1\text{mm}$ VDE0110 | | | 1,4mm VDE0110 |
| air gap | $\geq 0,8\text{mm}$ VDE0110 | | | 1mm VDE0110 |
| nominal current | 1 A | 1.5 A | 1 A | 2 A |
| nominal voltage | 250V AC insulation group A, according to VDE0110 | 150 V DC | 100 V DC | 250V AC insulation group A, according to VDE0110 |
| test voltage | 500 V AC | | 300 V AC | 500 V AC |
| insertion / drawing force | | | | $\geq 0.3\text{N} \dots \leq 0.7\text{N}$ per contact |
| cycles of operation | | | | ≥ 50 according to DIN 41640 |
| insulating body material | PPS | PBT | | PC/ colour: RAL 7032 |
| temperature range | -40°C ... +200°C (260°C / 10s) | -40°C ... +105°C (260°C / 10s) | | -55°C... +125°C |
| class of inflammability | UL 94 V-0 | | | |
| specific insulation resistance | $> 10^7 \Omega\cdot\text{m}$ | | | |
| cross-section | | | | AWG 28...30 = 0,09...0,05 mm ² |
| | FLMP ..., VFL ... | PV ... | PVY ... S | PVW ... G |
| surface contact / contact sleeve | Ni+ $\geq 0.2\mu\text{m}$ Au/ Ni +5...10 μm Sn | Ni+ $\geq 5\mu\text{m}$ Sn/ Ni + $\geq 0.2\mu\text{m}$ Au | contact area: Ni + $> 0.1\mu\text{m}$ Au/ connection area: Ni +0.5...2.5 μm Sn | contact area: Ni + $> 0.1\mu\text{m}$ Au |
| contact material | CuSn alloy | | Cu-alloy | |
| creeping current resistance | KC 175 nach DIN 53480 | KC 250 | | |
| creepage | 1,4mm VDE0110 | | | |
| air gap | 1mm VDE0110 | | | |
| nominal current | 1 A | 2 A | 1.5 A | |
| nominal voltage | 250V AC insulation group A, according to VDE0110 | | 150 V DC | 100 V DC |
| test voltage | 500 V AC | | | |
| insertion / drawing force | $\geq 0.3\text{N} \dots \leq 0.7\text{N}$ per contact | | $\geq 0.5 \dots \leq 1.8\text{N}$ per contact | |
| cycles of operation | ≥ 50 according to DIN 41640 | 200 to DIN41651 | | |
| insulating body material | PC/ colour: RAL 7032 | | PBT, schwarz | |
| temperature range | -55°C... +125°C | | -40°C... +105°C | |
| class of inflammability | UL 94 V-0 | | | |
| specific insulation resistance | $> 10^7 \Omega\cdot\text{m}$ | | $> 10^{10} \Omega\cdot\text{m}$ | |
| cross-section | AWG 28...30 = 0,09...0,05 mm ² | | | |

A

Technical data: IDC-connectors

B

C

D

E

F

G

H

I

K

L

M

N

| | SBAU ... Z | KK ... Z, SBAU 1 ... Z | BK 01 32 |
|---|--|-------------------------------|-------------------------------|
| surface contact / contact sleeve | Ni+5 μ m Sn | Ni+5...10 μ m Sn | |
| contact material | CuSn alloy | | |
| creeping current resistance | KC 175 nach DIN 53480 | | |
| creepage | $\geq 0,7$ mm VDE 0110 | | |
| air gap | $\geq 0,5$ mm VDE 0110 | | |
| nominal current | 1 A | | 2 A |
| nominal voltage | 250V AC insulation group A, according to VDE0110 | | 300 V _{eff} max. |
| test voltage | 500 V AC | | |
| insulating body material | PC | colour: RAL 7032 | |
| temperature range | -55°C... +125°C | | -30°C... +105°C |
| class of inflammability | UL 94 V-1 | UL 94 V-0 | |
| specific insulation resistance | $> 10^{12} \Omega \cdot m$ | | |
| conductor | | | 7 x \varnothing 0,127 mm |
| cross-section | AWG 28...30 = 0,09...0,05 mm ² | | AWG 28/~0,089 mm ² |
| capacity | | | ≤ 65 pF/m symmetrical |
| conductor resistance | | | ≤ 230 m Ω /m |
| characteristic impedance | | | 170 Ω symmetrisch |

H 19

The information given in this catalogue were provided and examined carefully. Nevertheless mistakes or printing errors especially technical modifications due to improvements of our products cannot be excluded.

A

B

C

D

E

F

G

H

I

K

L

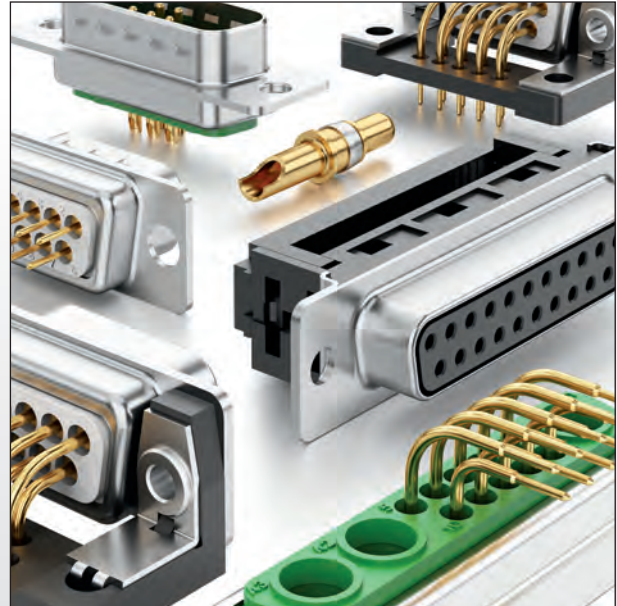
M

N



USB & RJ 45 connectors

- USB 2.0 type A and typ B
- USB 2.0 mini type B
- USB 2.0 micro type B
- USB 3.0 type A
- USB 3.1 type C
- RJ 45



D-Sub connectors

- with Wire Wrap, solder cup and dip soldering connection
- with plastic angle and rivet, earthing plate, snap-in clip
- with metal angle and rivet



D-Sub hoods

- design with large cable space
- hoods with self-cutting threaded bolts
- hoods with quick fastener
- compact hoods with cable outlet on the side



D-Sub accessories

- cut-out covers
- HF-dense seal caps
- HF seals
- dust covers



USB connectors

USB 2.0 type A sockets

- for PCB mounting
- in THT design
- industrial standard
- * PCB edge (PCB)

| | | | | |
|-----------------------------------|------------------------|------------------------------|------------------------|----------------|
| | | | | |
| <p>art. no.</p> | <p>no. of contacts</p> | <p>type</p> | <p>connection type</p> | <p>packing</p> |
| <p>USB 2 A 90</p> | <p>4</p> | <p>USB Typ A</p> | <p>THT (soldering)</p> | <p>Tray</p> |
| <p>surface of contact:</p> | | <p>selective gold-plated</p> | | |
| | | | | |
| <p>art. no.</p> | <p>no. of contacts</p> | <p>type</p> | <p>connection type</p> | <p>packing</p> |
| <p>USB 2 A 90 V</p> | <p>4</p> | <p>USB Typ A</p> | <p>THT (soldering)</p> | <p>Tray</p> |
| <p>surface of contact:</p> | | <p>selective gold-plated</p> | | |
| | | | | |
| <p>art. no.</p> | <p>no. of contacts</p> | <p>type</p> | <p>connection type</p> | <p>packing</p> |
| <p>USB 2 A 180</p> | <p>4</p> | <p>USB Typ A</p> | <p>THT (soldering)</p> | <p>Tray</p> |
| <p>surface of contact:</p> | | <p>selective gold-plated</p> | | |

A


USB connectors

B

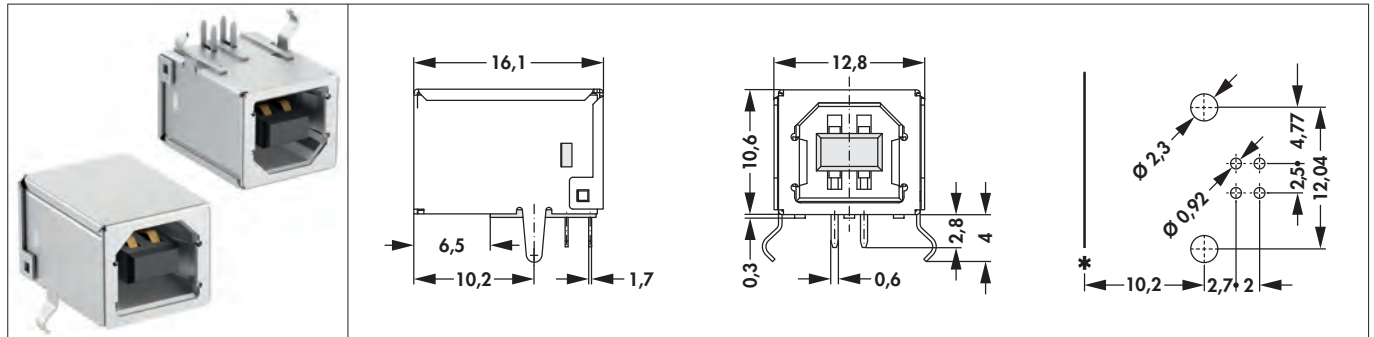
USB 2.0 type B sockets

- for PCB mounting
- in THT design
- industrial standard

* PCB edge (PCB)

C

D



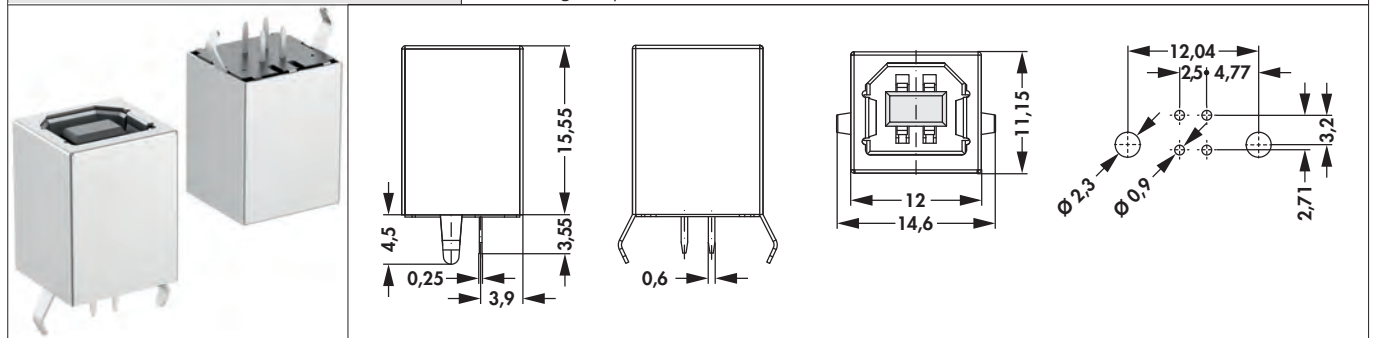
E

| art. no. | no. of contacts | type | connection type | packing |
|-------------------|-----------------|-----------|-----------------|---------|
| USB 2 B 90 | 4 | USB Typ B | THT (soldering) | Tray |

surface of contact: selective gold-plated

F

G



| art. no. | no. of contacts | type | connection type | packing |
|--------------------|-----------------|-----------|-----------------|---------|
| USB 2 B 180 | 4 | USB Typ B | THT (soldering) | Tray |

surface of contact: selective gold-plated

H

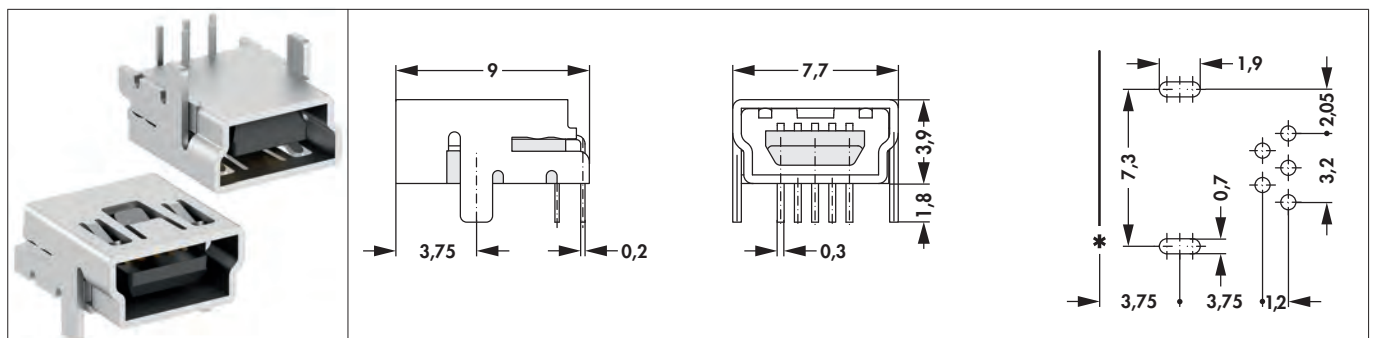
USB 2.0 type B mini sockets

- for PCB mounting
- in THT design
- industrial standard

* PCB edge (PCB)

I

K



| art. no. | no. of contacts | type | connection type | packing |
|-------------------|-----------------|-----------|-----------------|---------|
| USB MN 2 B | 5 | USB Typ B | THT (soldering) | Tray |

surface of contact: selective gold-plated

M

N



USB connectors

USB 2.0 type A sockets

- for PCB mounting
- in SMD design
- industrial standard
- * PCB edge (PCB)

| | | | | |
|----------------------------|-----------------|-----------------------|-----------------|---------|
| | | | | |
| art. no. | no. of contacts | type | connection type | packing |
| USB 2 A SMD | 4 | USB Typ A | SMD | Tray |
| surface of contact: | | selective gold-plated | | |

USB 2.0 type B sockets

- for PCB mounting
- in SMD design
- industrial standard
- * PCB edge (PCB)

| | | | | |
|----------------------------|-----------------|-----------------------|-----------------|---------|
| | | | | |
| art. no. | no. of contacts | type | connection type | packing |
| USB 2 B SMD | 4 | USB Typ B | SMD | Tray |
| surface of contact: | | selective gold-plated | | |

USB 2.0 type B mini sockets

- for PCB mounting
- in SMD design
- industrial standard
- * PCB edge (PCB)

| | | | | |
|----------------------------|-----------------|-----------------------|-----------------|---------|
| | | | | |
| art. no. | no. of contacts | type | connection type | packing |
| USB MN 2 B SMD | 5 | USB Typ B | SMD | Tray |
| surface of contact: | | selective gold-plated | | |

A


USB connectors

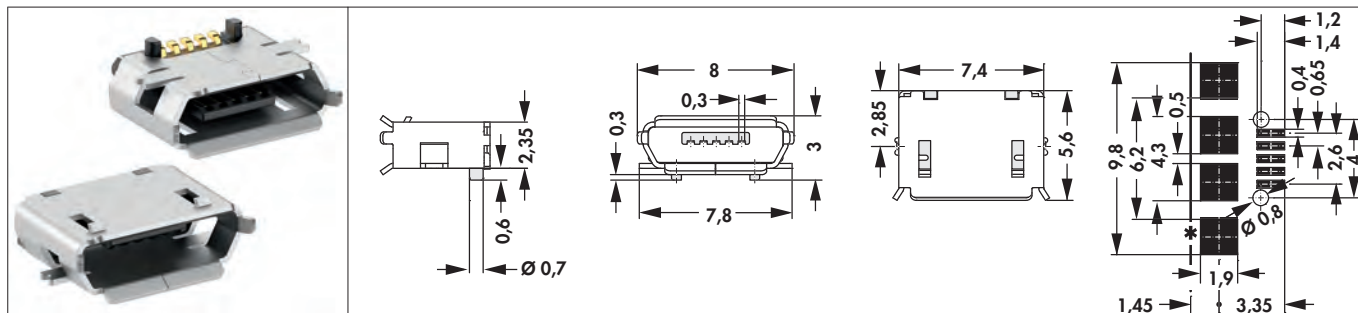
B

USB 2.0 type B micro sockets

- for PCB mounting
- in SMD design
- industrial standard
- * PCB edge (PCB)

C

D



| art. no. | no. of contacts | type | connection type | packing |
|----------------------------|-----------------|-----------------------|-----------------|---------------|
| USB MC 2 B SMD | 5 | USB Typ B | SMD | tape and reel |
| surface of contact: | | selective gold-plated | | |

E

F

G

H

I

K

L

M

N



USB connectors

USB 3.0 type A sockets

- for PCB mounting
- in THT design
- industrial standard

| | | | | |
|----------------------------|-----------------|-----------------------|-----------------|---------|
| | | | | |
| art. no. | no. of contacts | type | connection type | packing |
| USB 3 A 90 | 9 | USB Typ A | THT (soldering) | Tray |
| surface of contact: | | selective gold-plated | | |
| | | | | |
| art. no. | no. of contacts | type | connection type | packing |
| USB 3 A 90 V | 9 | USB Typ A | THT (soldering) | Tray |
| surface of contact: | | selective gold-plated | | |

USB 3.1 type C sockets

- for PCB mounting
- in THR / SMD design
- industrial standard

| | | | | |
|----------------------------|-----------------|-----------------------|-----------------|---------------|
| | | | | |
| art. no. | no. of contacts | type | connection type | packing |
| USB 31 C | 24 | USB Typ C | THR / SMD | tape and reel |
| surface of contact: | | selective gold-plated | | |

A



RJ 45 connectors

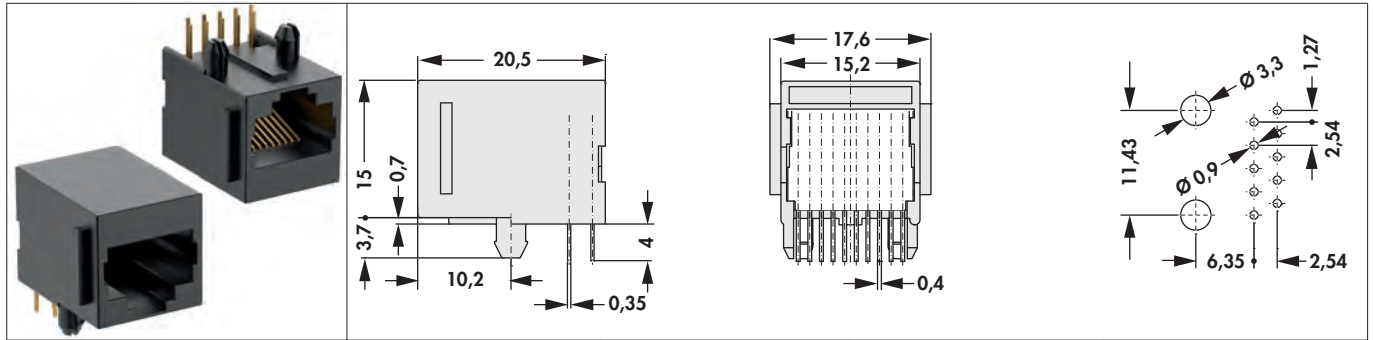
B

RJ 45 sockets

- for PCB mounting
- in THT design
- industrial standard

C

D

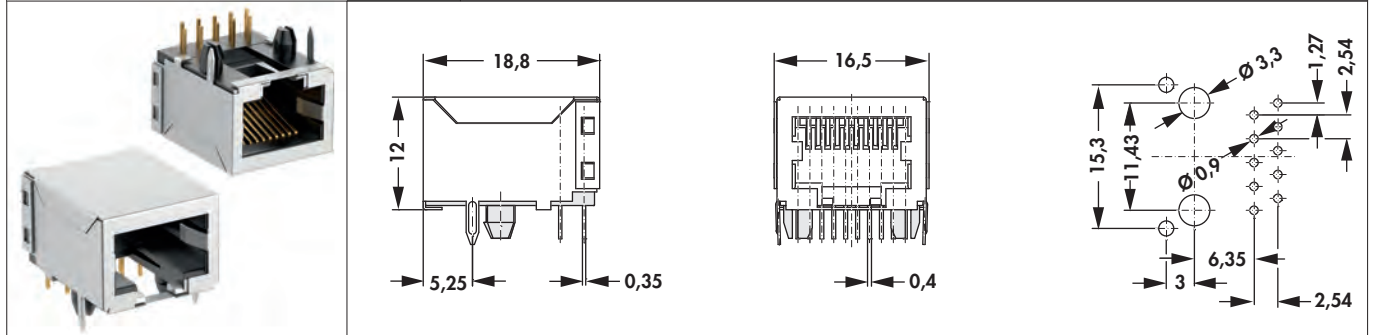


| art. no. | no. of contacts | type | connection type | packing |
|----------------|-----------------|-------|-----------------|---------|
| RJ 45 U | 10 | RJ 45 | THT (soldering) | Tray |

surface of contact: selective gold-plated

E

F

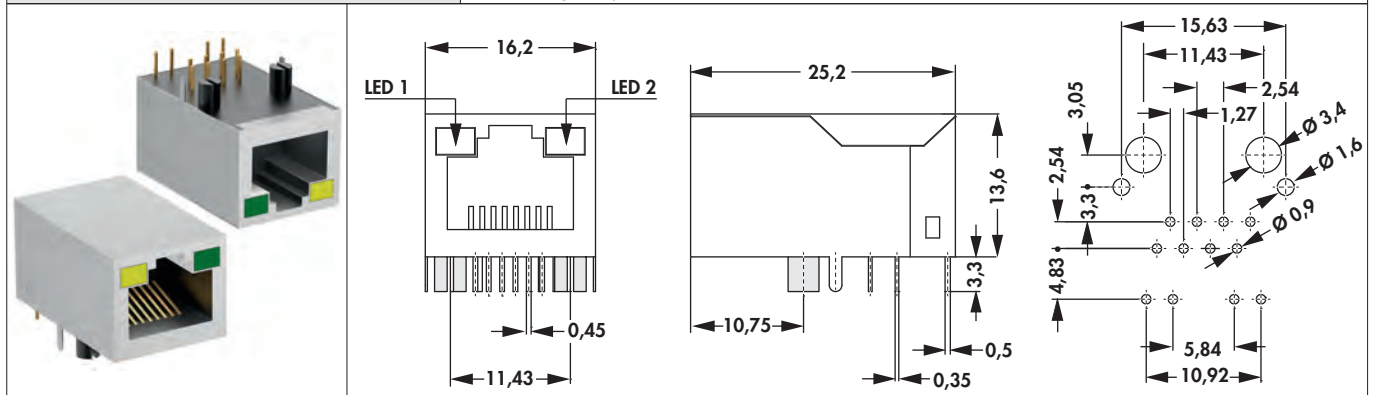


| art. no. | no. of contacts | type | connection type | packing |
|----------------|-----------------|-------|-----------------|---------|
| RJ 45 G | 10 | RJ 45 | THT (soldering) | Tray |

surface of contact: selective gold-plated

H

I



| art. no. | no. of contacts | type | connection type | packing |
|------------------|-----------------|-------|-----------------|---------|
| RJ 45 LED | 8 | RJ 45 | THT (soldering) | Tray |

LED 1: yellow

LED 2: green

surface of contact: selective gold-plated



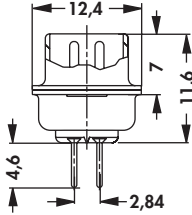
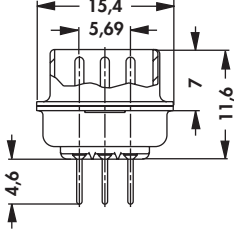
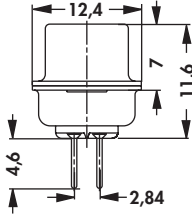
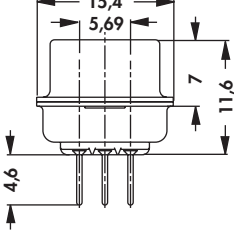
L

M

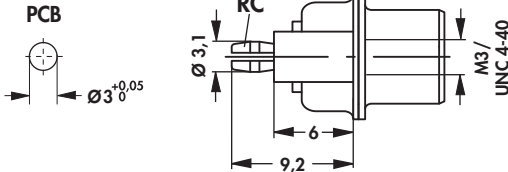
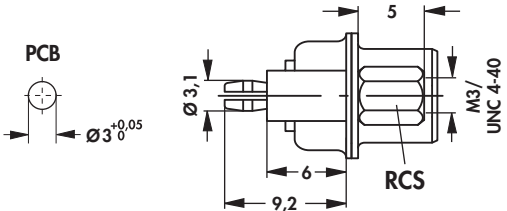
N

D-Sub standard connectors

Male and female headers


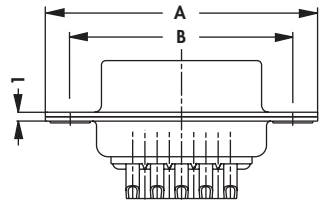
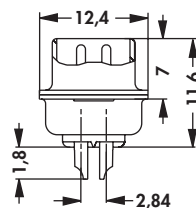
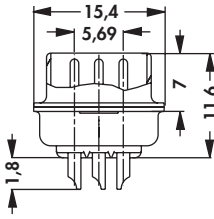

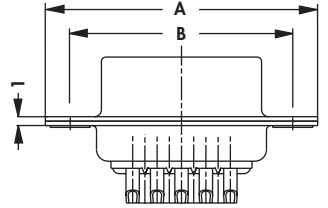
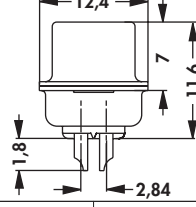
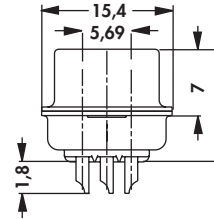
| | | | | | | | | | |
|---|---|-----------|---|--------------------|---|---|--------|---|---|
|  | 9 - 37 pol. | | 50 pol. | |  | 9 - 37 pol. | | 50 pol. | |
| |  | |  | | |  | |  | |
| | art. no. | design | dim. [mm] | | | art. no. | design | dim. [mm] | |
| | | | A | B | | | | A | B |
| DS 09 T ... | male | 30.8 | 25.0 | DS 37 T ... | male | 69.5 | 63.5 | | |
| DS 15 T ... | | 39.2 | 33.3 | DS 50 T ... | | 67.0 | 61.1 | | |
| DS 25 T ... | | 53.1 | 47.0 | | | | | | |
| art. no. | design | dim. [mm] | | art. no. | design | dim. [mm] | | | |
| | | A | B | | | A | B | | |
| DB 09 T ... | female | 30.8 | 25.0 | DB 37 T ... | female | 69.5 | 63.5 | | |
| DB 15 T ... | | 39.2 | 33.3 | DB 50 T ... | | 67.0 | 61.1 | | |
| DB 25 T ... | | 53.1 | 47.0 | | | | | | |
| <p>please indicate:</p> <ul style="list-style-type: none"> ... type of mounting (optional) RC M3 = snap-in-clip with M3 RC UN = snap-in-clip with UNC 4-40 RCS M3 = snap-in-clip and screwing bolt with M3 RCS UN = snap-in-clip and screwing bolt with UNC 4-40 | | | | | | | | | |

Overview type of mounting (optional)

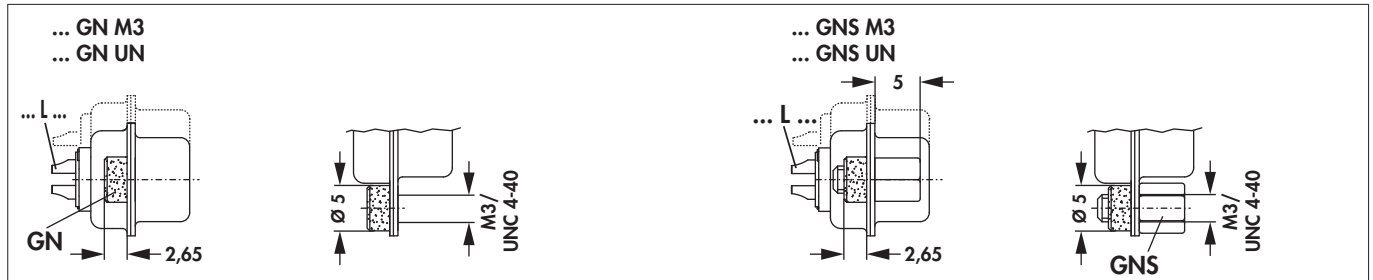
| | |
|--|---|
| <p>... RC M3 ... RC UN</p>  | <p>... RCS M3 ... RCS UN</p>  |
|--|---|

D-Sub standard connectors

Male and female headers

| | | | | | | | | | |
|---|---|--------|--|-------------|---|----------|--------|-----------|---|
|  | 9 - 37 pol. | | 50 pol. | |  | | | | |
| |  | |  | | | | | | |
| | art. no. | design | dim. [mm] | | | art. no. | design | dim. [mm] | |
| | | | A | B | | | | A | B |
| DS 09 L ... | male | 30.8 | 25.0 | DS 37 L ... | male | 69.5 | 63.5 | | |
| DS 15 L ... | | 39.2 | 33.3 | DS 50 L ... | | 67.0 | 61.1 | | |
| DS 25 L ... | | 53.1 | 47.0 | | | | | | |
|  | 9 - 37 pol. | | 50 pol. | |  | | | | |
| |  | |  | | | | | | |
| | art. no. | design | dim. [mm] | | | art. no. | design | dim. [mm] | |
| | | | A | B | | | | A | B |
| DB 09 L ... | female | 30.8 | 25.0 | DB 37 L ... | female | 69.5 | 63.5 | | |
| DB 15 L ... | | 39.2 | 33.3 | DB 50 L ... | | 67.0 | 61.1 | | |
| DB 25 L ... | | 53.1 | 47.0 | | | | | | |
| <p>please indicate: ... type of mounting (optional)</p> <p>GN M3 = threaded rivet with M3</p> <p>GN UN = threaded rivet with UNC 4-40</p> <p>GNS M3 = threaded rivet and screwing bolt with M3</p> <p>GNS UN = threaded rivet and screwing bolt with UNC 4-40</p> | | | | | | | | | |


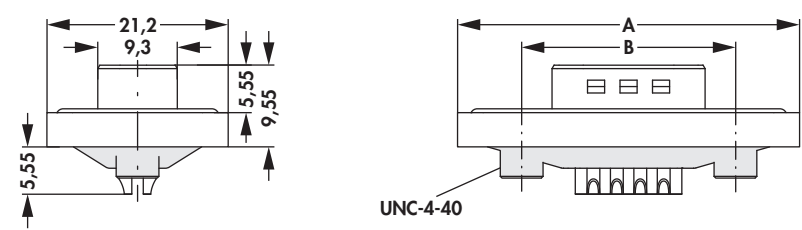
Overview type of mounting (optional)



D-Sub standard connectors


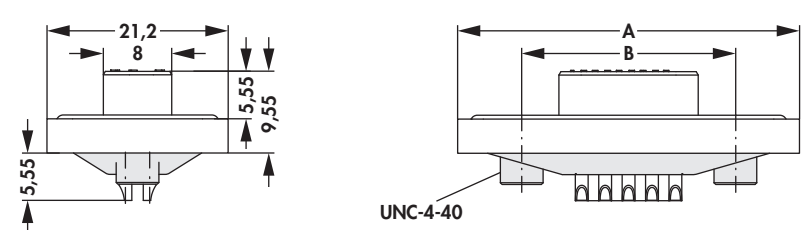
Male headers with IP protection

- IP 67 protected
- solder bucket connection

| | | | |
|---|--|--------|-----------|
|  |  | | |
| | art. no. | design | dim. [mm] |
| DS 09 L IP 67 | male | A | B |
| DS 15 L IP 67 | | 40.0 | 25.0 |
| DS 25 L IP 67 | | 48.4 | 33.3 |
| | | 62.0 | 47.0 |


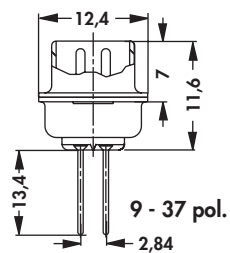
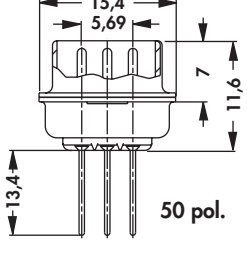
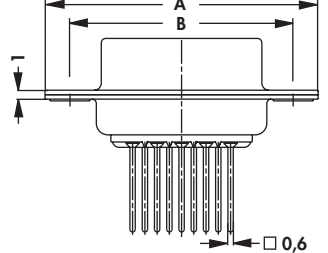

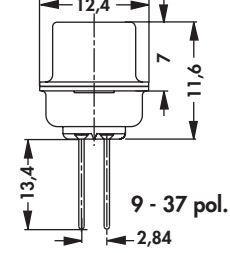
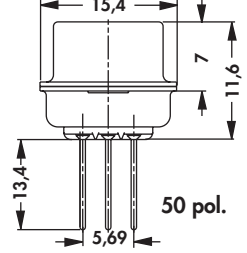
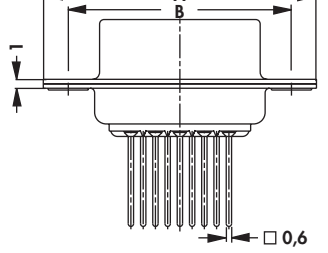
Female headers with IP protection

- IP 67 protected
- solder bucket connection

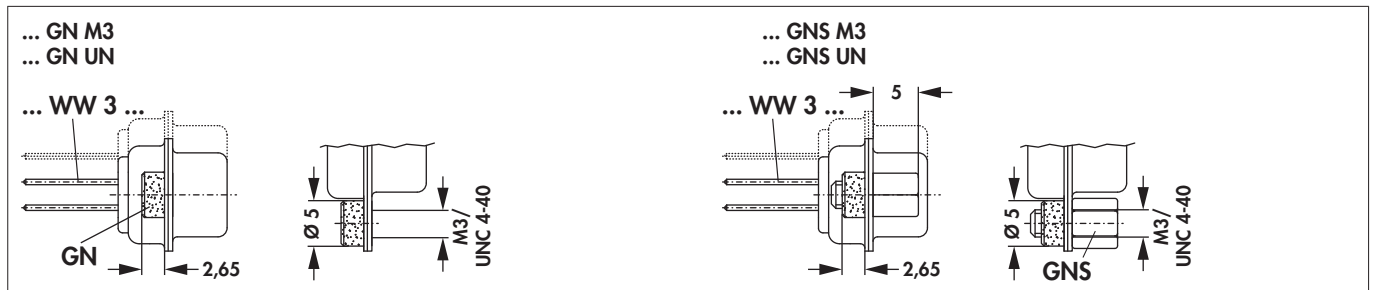
| | | | |
|--|---|--------|-----------|
|  |  | | |
| | art. no. | design | dim. [mm] |
| DB 09 L IP 67 | female | A | B |
| DB 15 L IP 67 | | 40.0 | 25.0 |
| DB 25 L IP 67 | | 48.4 | 33.3 |
| | | 62.0 | 47.0 |

D-Sub standard connectors


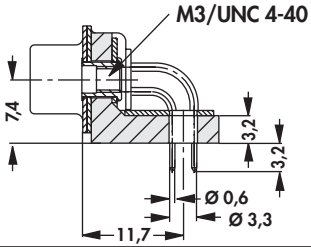

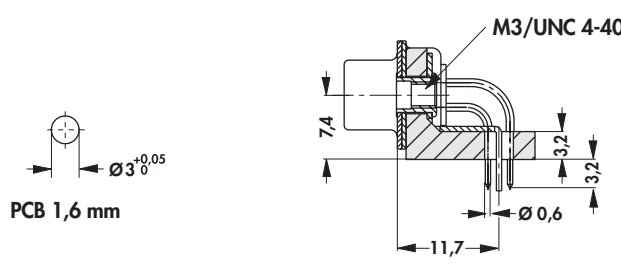
Male and female headers

| | | | | | | | |
|--|---|--|---|-----------------------|--------|-----------|------|
|  |  |  |  | | | | |
| art. no. | design | dim. [mm] | | art. no. | design | dim. [mm] | |
| DS 09 WW 3 ... | male | A | B | DS 37 WW 3 ... | male | A | B |
| DS 15 WW 3 ... | | 30.8 | 25.0 | DS 50 WW 3 ... | | 69.5 | 63.5 |
| DS 25 WW 3 ... | | 39.2 | 33.3 | | | 67.0 | 61.1 |
| | | 53.1 | 47.0 | | | | |
|  |  |  |  | | | | |
| art. no. | design | dim. [mm] | | art. no. | design | dim. [mm] | |
| DB 09 WW 3 ... | female | A | B | DB 37 WW 3 ... | female | A | B |
| DB 15 WW 3 ... | | 30.8 | 25.0 | DB 50 WW 3 ... | | 69.5 | 63.5 |
| DB 25 WW 3 ... | | 39.2 | 33.3 | | | 67.0 | 61.1 |
| | | 53.1 | 47.0 | | | | |
| <p>please indicate: ... type of mounting (optional)</p> <p>GN M3 = threaded rivet with M3 GN UN = threaded rivet with UNC 4-40 GNS M3 = threaded rivet and screwing bolt with M3 GNS UN = threaded rivet and screwing bolt with UNC 4-40</p> | | | | | | | |

Overview type of mounting (optional)




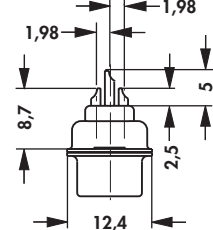
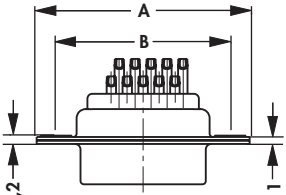

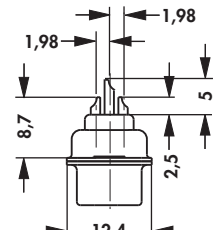
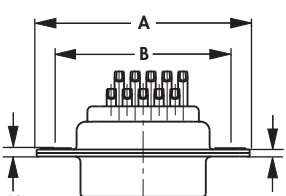
D-Sub standard connectors with mounting bracket

| | | |
|---|--|--|
|  |  | |
| art. no. | design | fixing part |
| DS WE 3 ... | male | plastic angle with earthing plate, threaded rivet M3 |
| DS WE 4 ... | male | plastic angle with earthing plate, threaded rivet UNC 4-40 |
| DB WE 3 ... | female | plastic angle with earthing plate, threaded rivet M3 |
| DB WE 4 ... | female | plastic angle with earthing plate, threaded rivet UNC 4-40 |
| please indicate: ... no. of contacts 9 15 25 37 | | |
|  |  | |
| art. no. | design | fixing part |
| DS WR 3 ... | male | plastic angle with earthing plate, threaded rivet M3, snap-on clip |
| DS WR 4 ... | male | plastic angle with earthing plate, threaded rivet UNC 4-40, snap-on clip |
| DB WR 3 ... | female | plastic angle with earthing plate, threaded rivet M3, snap-on clip |
| DB WR 4 ... | female | plastic angle with earthing plate, threaded rivet UNC 4-40, snap-on clip |
| please indicate: ... no. of contacts 9 15 25 37 | | |

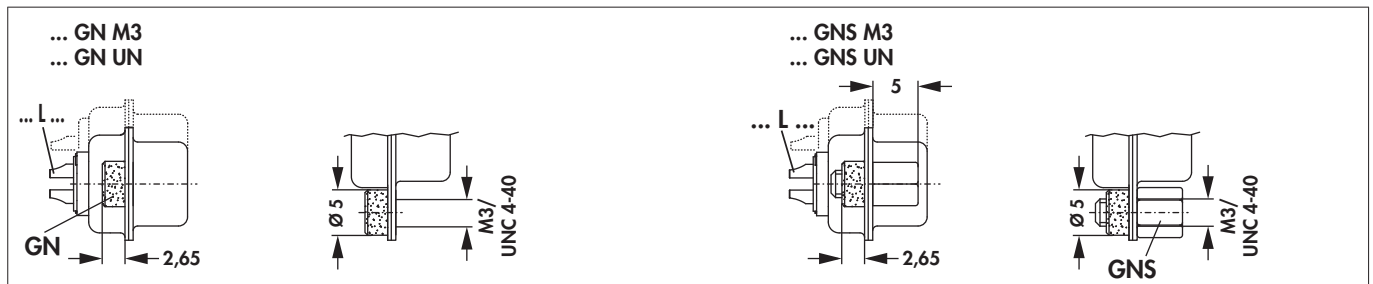
D-Sub connectors High Density

Male and female headers

- our D-Sub connectors **HD** are loaded with turned precision contacts
- with shielding springs


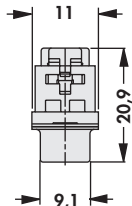
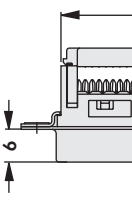
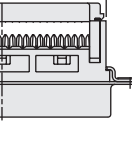
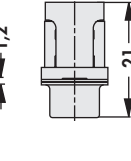
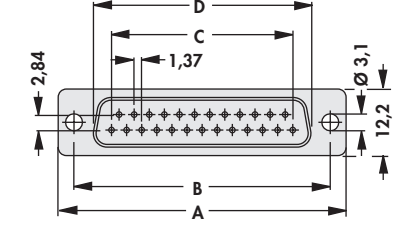

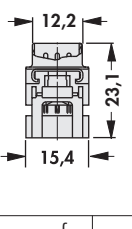
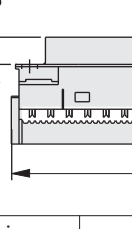
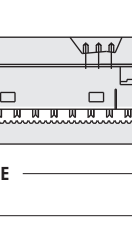
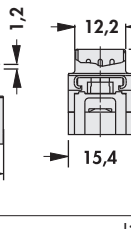
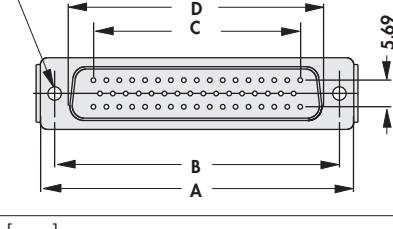

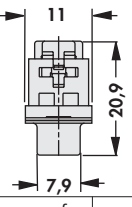
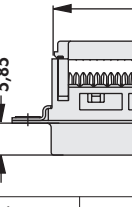
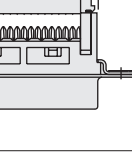
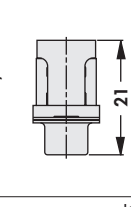
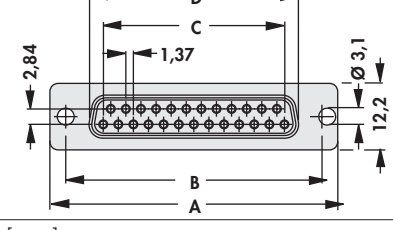

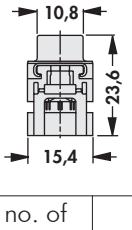
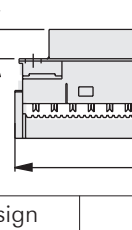
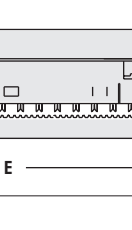
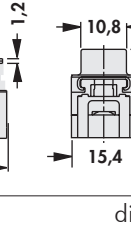
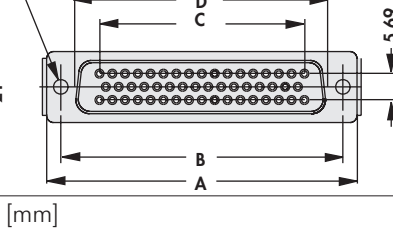
|  |  | |  | |
|---|--|--|---|------|
| art. no. | no. of contacts | design | dim. [mm] | |
| | | | A | B |
| HD S 15 L ... | 15 | male | 30.8 | 25.0 |
| HD S 26 L ... | 26 | | 39.2 | 33.3 |
| HD S 44 L ... | 44 | | 53.1 | 47.0 |
| caseing frame: | | steel, tin plated | | |
|  |  | |  | |
| art. no. | no. of contacts | design | dim. [mm] | |
| | | | A | B |
| HD B 15 L ... | 15 | female | 30.8 | 25.0 |
| HD B 26 L ... | 26 | | 39.2 | 33.3 |
| HD B 44 L ... | 44 | | 53.1 | 47.0 |
| please indicate: | | ... type of mounting (optional) | | |
| | | GN M3 = threaded rivet with M3 GN UN = threaded rivet with UNC 4-40 GNS M3 = threaded rivet and screwing bolt with M3 GNS UN = threaded rivet and screwing bolt with UNC 4-40 | | |
| caseing frame: | | steel, tin plated | | |

Overview type of mounting (optional)



D-Sub connector for flat ribbon cable

Male and female headers

| | | | | | | | |
|---|---|---|---|--|---|------|------|
|  |  |  |  |  |  | | |
| art. no. | no. of contacts | design | dim. [mm] | | | | |
| DS BK 09 | 9 | male | A | B | C | D | E |
| DS BK 15 | 15 | | 30.6 | 25.0 | 10.96 | 17.9 | 16.1 |
| DS BK 25 | 25 | | 39.0 | 33.3 | 19.33 | 26.2 | 23.9 |
| DS BK 37 | 37 | | 52.8 | 47.0 | 33.13 | 39.9 | 38.1 |
|  |  |  |  |  |  | | |
| art. no. | no. of contacts | design | dim. [mm] | | | | |
| DS BK 50 | 50 | male | A | B | C | D | E |
|  |  |  |  |  |  | | |
| art. no. | no. of contacts | design | dim. [mm] | | | | |
| DB BK 09 | 9 | female | A | B | C | D | E |
| DB BK 15 | 15 | | 30.6 | 25.0 | 10.96 | 16.3 | 16.1 |
| DB BK 25 | 25 | | 39.0 | 33.3 | 19.33 | 24.5 | 23.9 |
| DB BK 37 | 37 | | 52.8 | 47.0 | 33.13 | 38.5 | 38.1 |
|  |  |  |  |  |  | | |
| art. no. | no. of contacts | design | dim. [mm] | | | | |
| DB BK 50 | 50 | female | A | B | C | D | E |

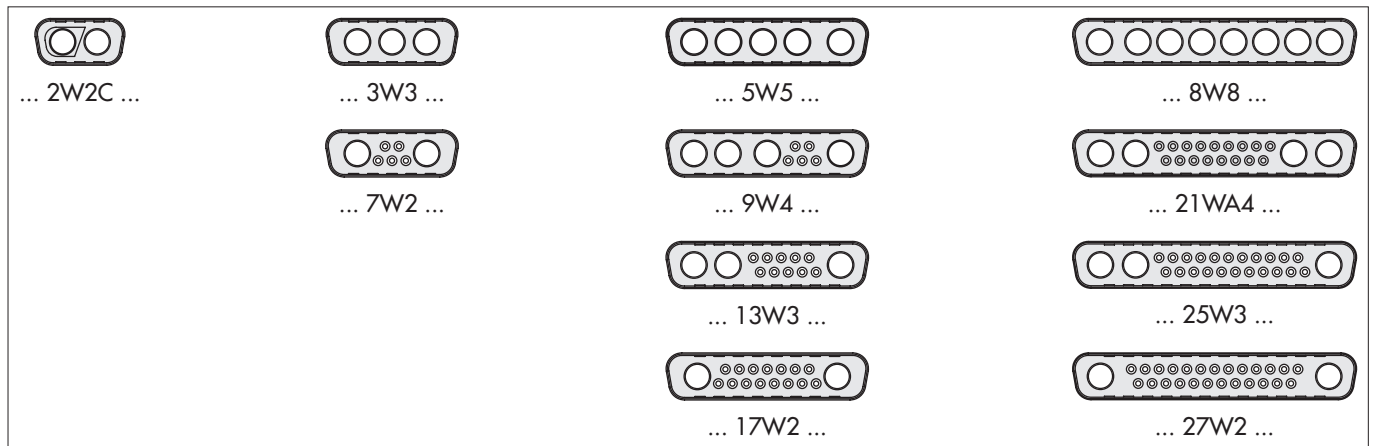
D-Sub mixed layout connectors

Order example (case and assembly type)

| | | | | |
|---|---|---|--|--|
| DSM / DBM connector (DSM = D-Sub male header mixed layout DBM = D-Sub female header mixed layout) | 7W2 Contact pattern (see overview) case | L connection type signal contact (L = solder bucket connection) | GN assembly type (see overview) | UN internal thread (UNC 4-40) assembly type (optional) |
|---|---|---|--|--|

Overview contact pattern

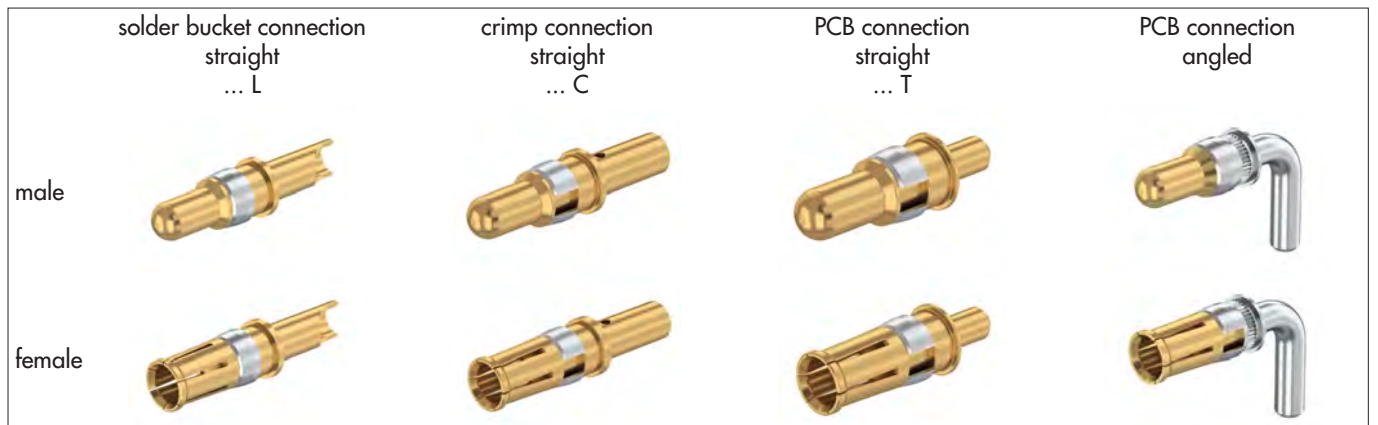
- the contact pattern is valid for male headers
- for using socket connectors the hole pattern has to be mirrored



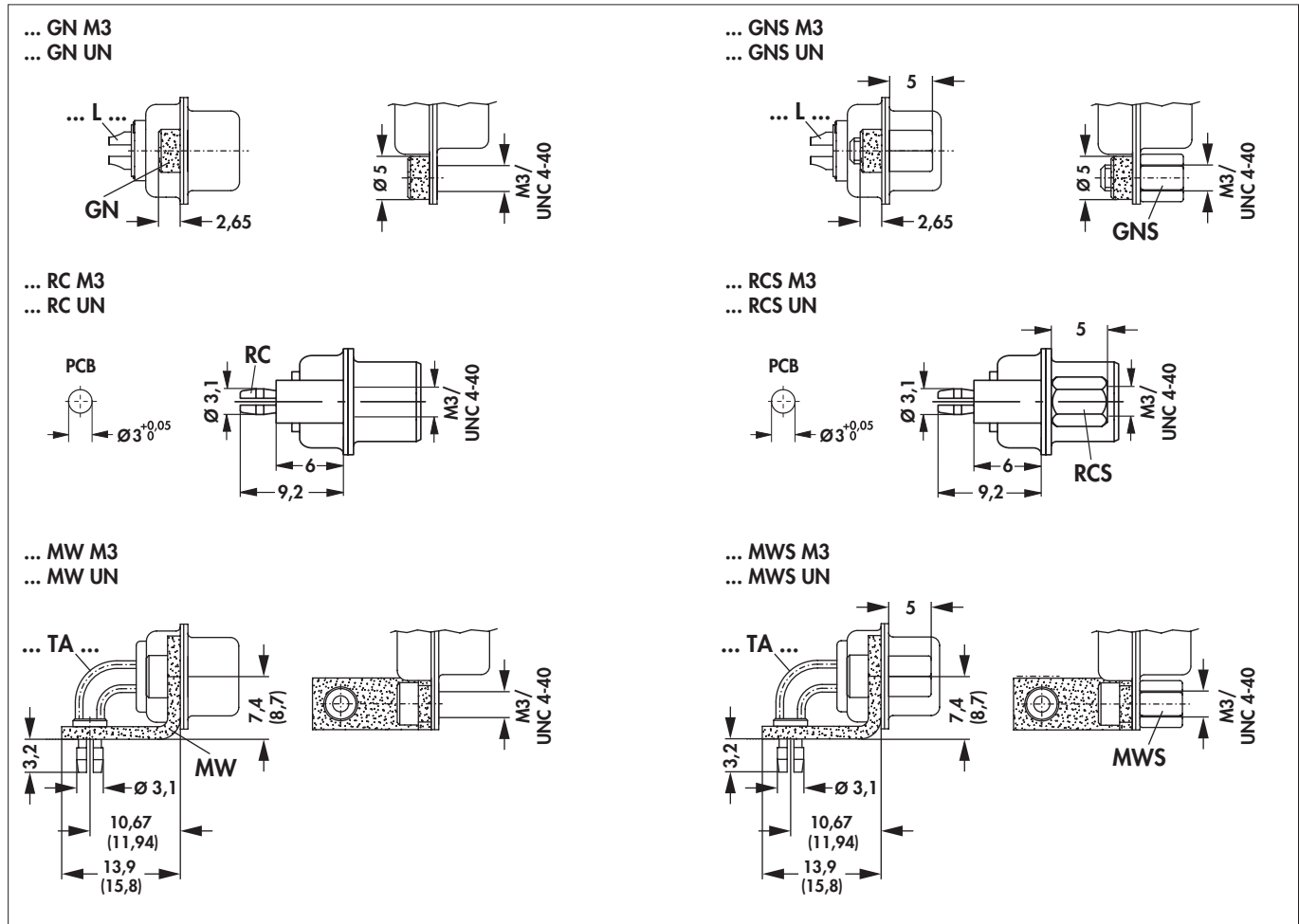
Order example (mixed layout contacts)

| | | |
|---|------------------------------|--|
| HAS high-power contacts (HAS = high-power contacts male) | 10 current (10 A) | TA connection type mixed layout contacts (see overview) |
| mixed layout contacts | | |

Overview mixed layout contacts, connection type




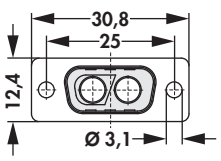
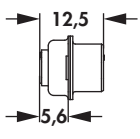
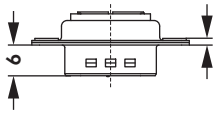

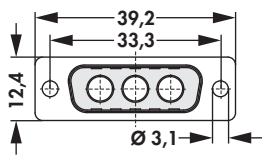
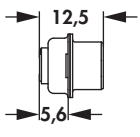
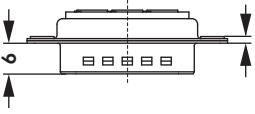

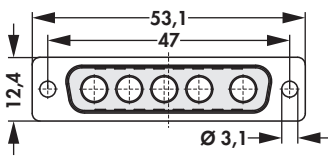
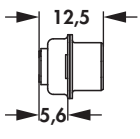
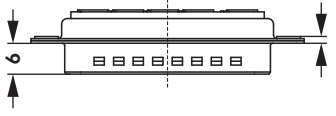

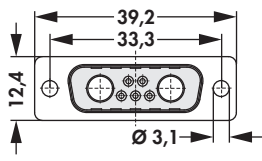
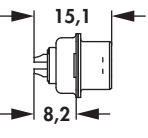
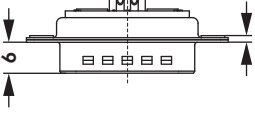

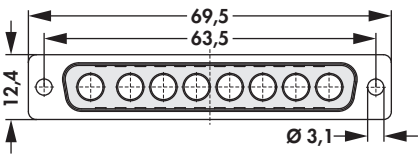
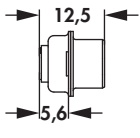
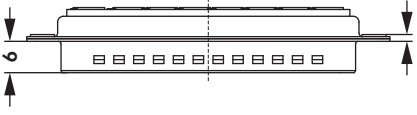
Overview assembly type (optional)




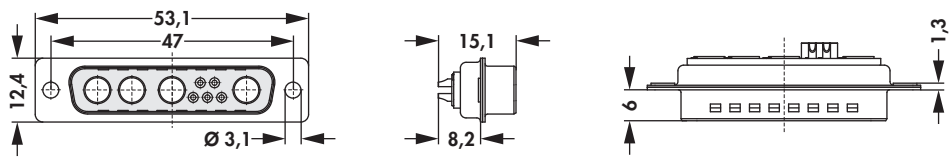

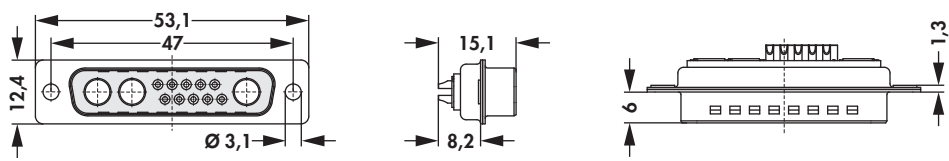

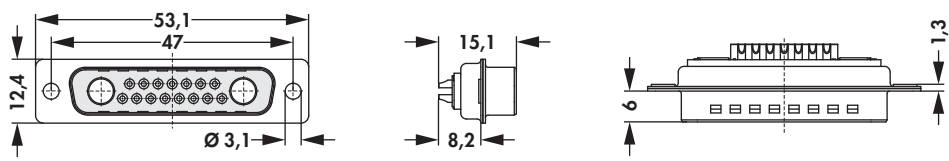

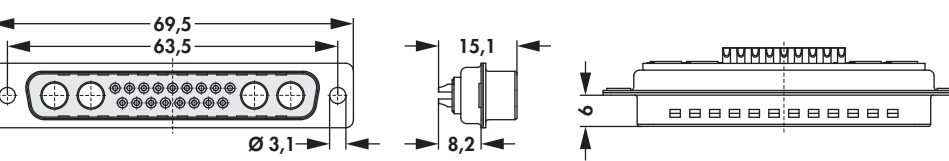
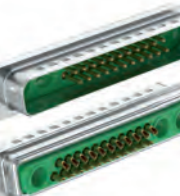
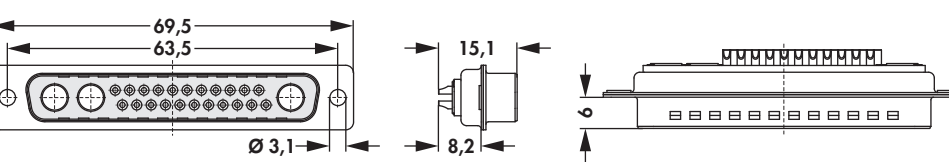
D-Sub mixed layout connectors

Male headers

- gold-plated signal contacts, straight
- equipped with turned precision contacts
- for power cables up to AWG 16
- combinable with high-power contacts **HAS ...** → I 27 - I 28

| | | | |
|---|---|--|---|
|  |  |  |  |
| art. no. DSM 2W2C L ... | design male | signal contacts 0 | high-power contacts max. 2 |
|  |  |  |  |
| art. no. DSM 3W3 L ... | design male | signal contacts 0 | high-power contacts max. 3 |
|  |  |  |  |
| art. no. DSM 5W5 L ... | design male | signal contacts 0 | high-power contacts max. 5 |
|  |  |  |  |
| art. no. DSM 7W2 L ... | design male | signal contacts 5 | high-power contacts max. 2 |
|  |  |  |  |
| art. no. DSM 8W8 L ... | design male | signal contacts 0 | high-power contacts max. 8 |
| please indicate: <ul style="list-style-type: none"> ... type of mounting (optional) GN M3 = threaded rivet with M3 GN UN = threaded rivet with UNC 4-40 GNS M3 = threaded rivet and screwing bolt with M3 GNS UN = threaded rivet and screwing bolt with UNC 4-40 | | | |
| caseing frame: | steel, tin plated | | |

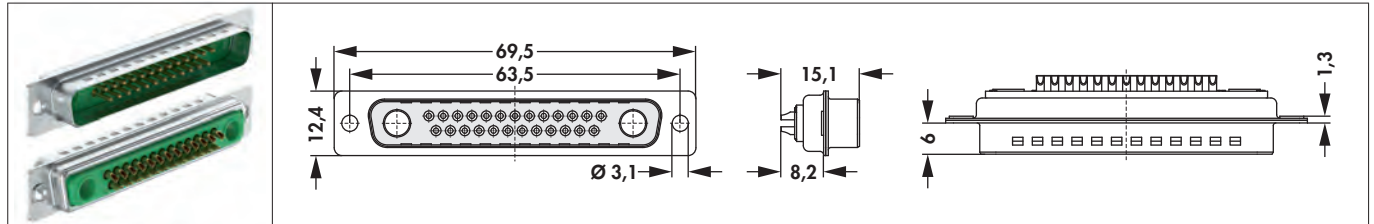
D-Sub mixed layout connectors

| | | | |
|---|--|-----------------------|-------------------------------|
|  |  | | |
| art. no. DSM 9W4 L ... | design male | signal contacts 5 | high-power contacts max. 4 |
|  |  | | |
| art. no. DSM 13W3 L ... | design male | signal contacts 10 | high-power contacts max. 3 |
|  |  | | |
| art. no. DSM 17W2 L ... | design male | signal contacts 15 | high-power contacts max. 2 |
|  |  | | |
| art. no. DSM 21WA4 L ... | design male | signal contacts 17 | high-power contacts max. 4 |
|  |  | | |
| art. no. DSM 25W3 L ... | design male | signal contacts 22 | high-power contacts max. 3 |
| please indicate: | ... type of mounting (optional) GN M3 = threaded rivet with M3 GN UN = threaded rivet with UNC 4-40 GNS M3 = threaded rivet and screwing bolt with M3 GNS UN = threaded rivet and screwing bolt with UNC 4-40 | | |
| caseing frame: | steel, tin plated | | |

A

D-Sub mixed layout connectors

B



C

| art. no. | design | signal contacts | high-power contacts |
|-----------------------|--------|-----------------|---------------------|
| DSM 27W2 L ... | male | 25 | max. 2 |

D

| | | | |
|-------------------------|--|--|--|
| please indicate: | ... type of mounting (optional) | | |
| | GN M3 = threaded rivet with M3 | | |
| | GN UN = threaded rivet with UNC 4-40 | | |
| | GNS M3 = threaded rivet and screwing bolt with M3 | | |
| | GNS UN = threaded rivet and screwing bolt with UNC 4-40 | | |

| | |
|----------------------|-------------------|
| casing frame: | steel, tin plated |
|----------------------|-------------------|

E

F

G

H

I

K

L


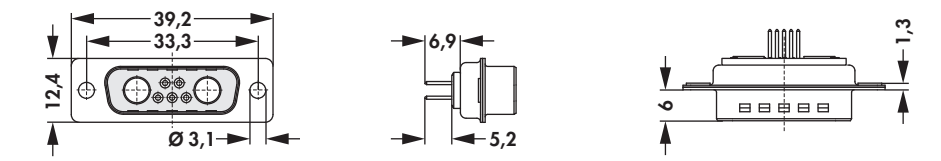

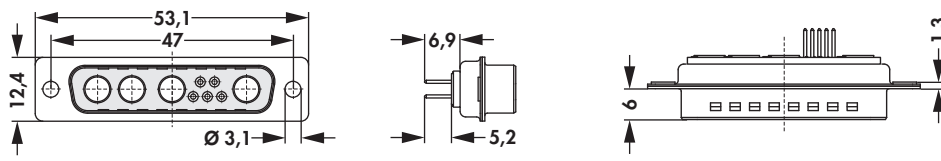

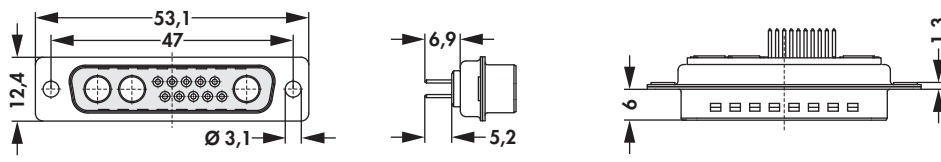

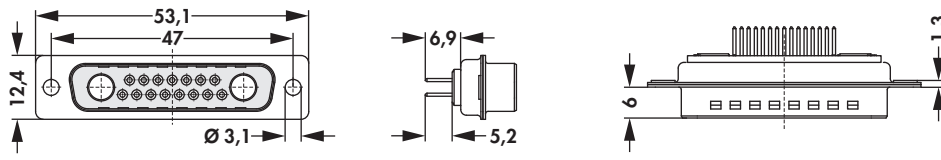
M

N

D-Sub mixed layout connectors

Male headers


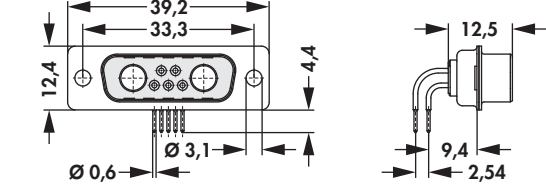
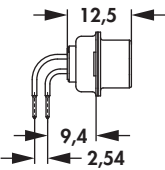
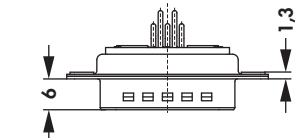

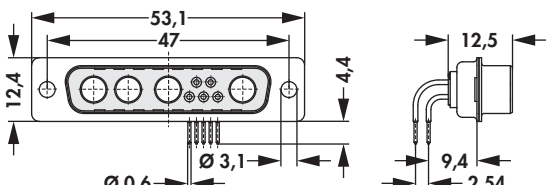
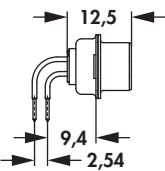
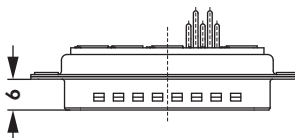

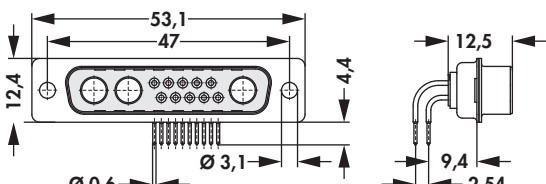
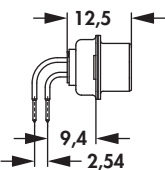
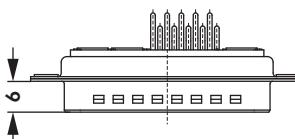

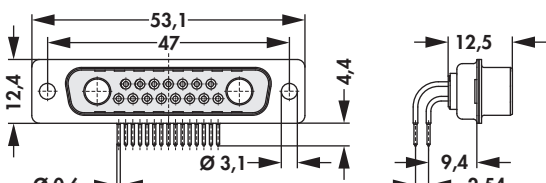
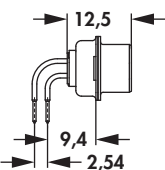
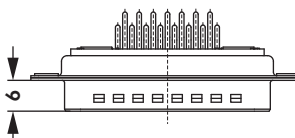
- gold-plated signal contacts, straight
- equipped with turned precision contacts
- with PCB connection, straight
- combinable with high-power contacts **art. HAS ...** → I 27 - I 28

| | | | |
|---|--|-----------------------|-------------------------------|
|  |  | | |
| art. no. DSM 7W2 T ... | design male | signal contacts 5 | high-power contacts max. 2 |
|  |  | | |
| art. no. DSM 9W4 T ... | design male | signal contacts 5 | high-power contacts max. 4 |
|  |  | | |
| art. no. DSM 13W3 T ... | design male | signal contacts 10 | high-power contacts max. 3 |
|  |  | | |
| art. no. DSM 17W2 T ... | design male | signal contacts 15 | high-power contacts max. 2 |
| please indicate: | ... type of mounting (optional) RC M3 = snap-in-clip with M3 RC UN = snap-in-clip with UNC 4-40 RCS M3 = snap-in-clip and screwing bolt with M3 RCS UN = snap-in-clip and screwing bolt with UNC 4-40 | | |
| caseing frame: | steel, tin plated | | |

D-Sub mixed layout connectors

Male headers


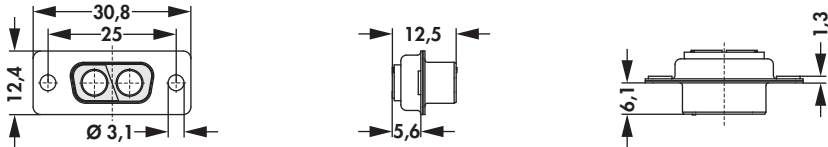

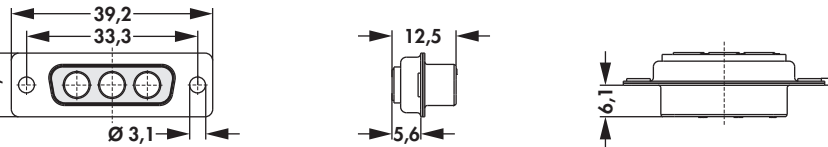

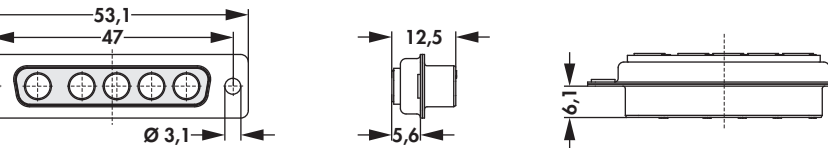

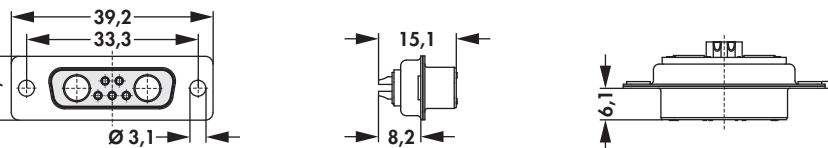
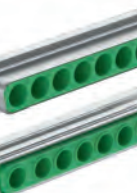
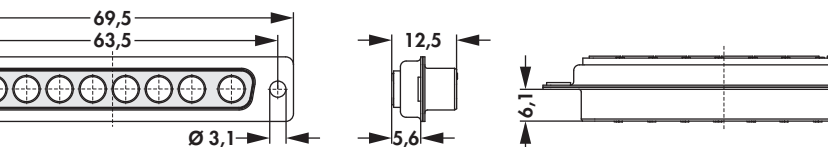
- gold-plated signal contacts, angled
- equipped with turned precision contacts
- with PCB connection, angled
- combinable with high-power contacts **HAS ...** → I 27 - I 28

| | | | |
|---|--|--|---|
|  |  |  |  |
| art. no. DSM 7W2 TA ... | design male | signal contacts 5 | high-power contacts max. 2 |
|  |  |  |  |
| art. no. DSM 9W4 TA ... | design male | signal contacts 5 | high-power contacts max. 4 |
|  |  |  |  |
| art. no. DSM 13W3 TA ... | design male | signal contacts 10 | high-power contacts max. 3 |
|  |  |  |  |
| art. no. DSM 17W2 TA ... | design male | signal contacts 15 | high-power contacts max. 2 |
| please indicate: | | | |
| ... type of mounting (optional) | | | |
| MW M3 = metal angle with M3 | | | |
| MW UN = metal angle with UNC 4-40 | | | |
| MWS M3 = metal angle screwing bolt with M3 | | | |
| MWS UN = metal angle and screwing bolt with UNC 4-40 | | | |
| caseing frame: | steel, tin plated | | |


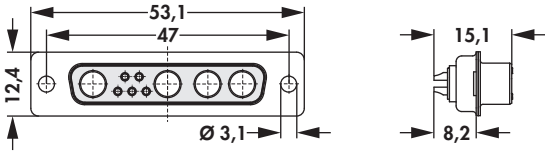
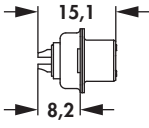
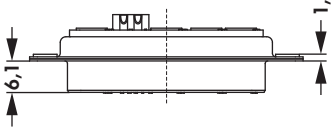

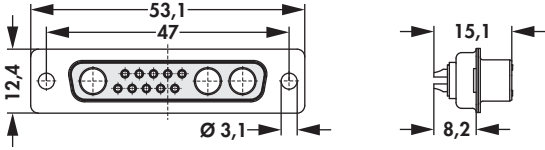
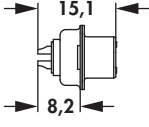
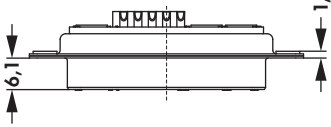

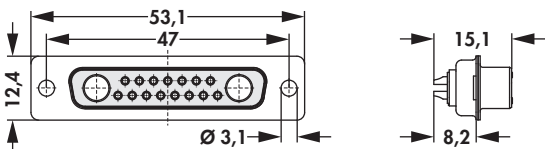
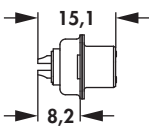
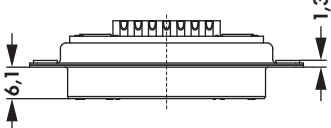

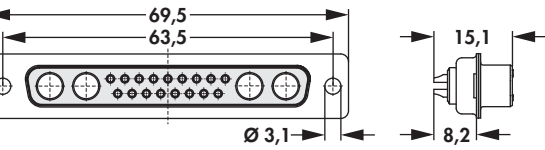
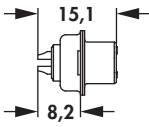
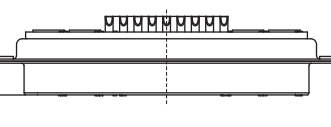

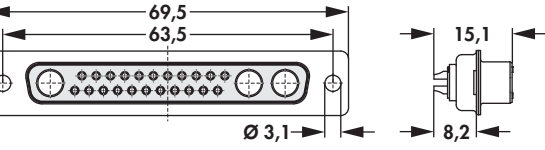
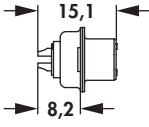
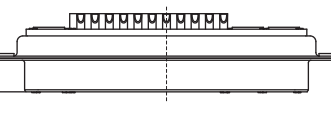
D-Sub mixed layout connectors

Female headers

- gold-plated signal contacts, straight
- equipped with turned precision contacts
- for power cables up to AWG 16
- combinable with high-power contacts **HAB ...** → I 27 - I 28

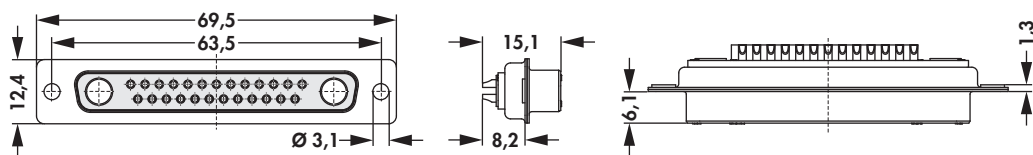
| | | | |
|---|--|----------------------|-------------------------------|
|  |  | | |
| art. no. DBM 2W2C L ... | design female | signal contacts 0 | high-power contacts max. 2 |
|  |  | | |
| art. no. DBM 3W3 L ... | design female | signal contacts 0 | high-power contacts max. 3 |
|  |  | | |
| art. no. DBM 5W5 L ... | design female | signal contacts 0 | high-power contacts max. 5 |
|  |  | | |
| art. no. DBM 7W2 L ... | design female | signal contacts 5 | high-power contacts max. 2 |
|  |  | | |
| art. no. DBM 8W8 L ... | design female | signal contacts 0 | high-power contacts max. 8 |
| please indicate: | ... type of mounting (optional) GN M3 = threaded rivet with M3 GN UN = threaded rivet with UNC 4-40 GNS M3 = threaded rivet and screwing bolt with M3 GNS UN = threaded rivet and screwing bolt with UNC 4-40 | | |
| caseing frame: | steel, tin plated | | |

D-Sub mixed layout connectors

| | | | |
|---|--|--|---|
|  |  |  |  |
| art. no. DBM 9W4 L ... | design female | signal contacts 5 | high-power contacts max. 4 |
|  |  |  |  |
| art. no. DBM 13W3 L ... | design female | signal contacts 10 | high-power contacts max. 3 |
|  |  |  |  |
| art. no. DBM 17W2 L ... | design female | signal contacts 15 | high-power contacts max. 2 |
|  |  |  |  |
| art. no. DBM 21WA4 L ... | design female | signal contacts 17 | high-power contacts max. 4 |
|  |  |  |  |
| art. no. DBM 25W3 L ... | design female | signal contacts 22 | high-power contacts max. 3 |
| please indicate: ... type of mounting (optional) GN M3 = threaded rivet with M3 GN UN = threaded rivet with UNC 4-40 GNS M3 = threaded rivet and screwing bolt with M3 GNS UN = threaded rivet and screwing bolt with UNC 4-40 | | | |
| casing frame: | | steel, tin plated | |

D-Sub mixed layout connectors

A
B
C
D
E
F
G
H
I
K
L
M
N



| | | | |
|-------------------------|--|-----------------|---------------------|
| art. no. | design | signal contacts | high-power contacts |
| DBM 27W2 L ... | female | 25 | max. 2 |
| please indicate: | ... type of mounting (optional) | | |
| | GN M3 = threaded rivet with M3 GN UN = threaded rivet with UNC 4-40 GNS M3 = threaded rivet and screwing bolt with M3 GNS UN = threaded rivet and screwing bolt with UNC 4-40 | | |
| casing frame: | steel, tin plated | | |

A

D-Sub mixed layout connectors


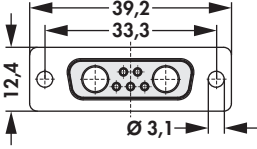
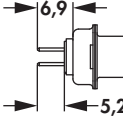
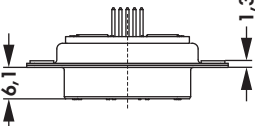

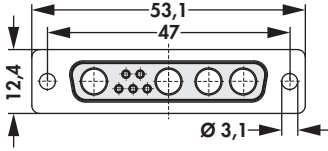
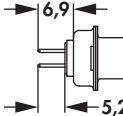
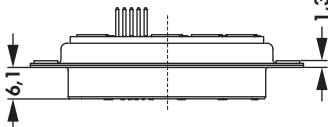

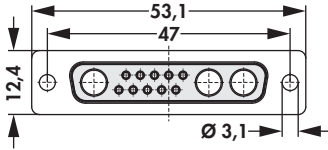
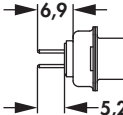
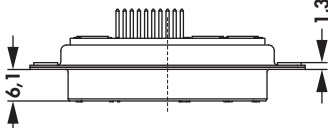

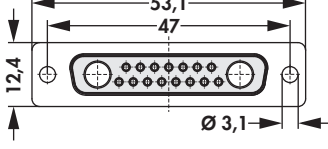
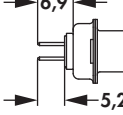
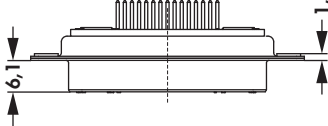
B

Female headers

- gold-plated signal contacts, straight
- equipped with turned precision contacts
- with PCB connection, straight
- combinable with high-power contacts **HAB ...** → I 29 - I 30

C

D

| | | | | | | | | | | | | | |
|--|---|---|---|--|--|--------------|------------------------|--------------|------------------------------|---------------|--|---------------|--|
|  |  |  |  | | | | | | | | | | |
| art. no. DBM 7W2 T ... | design female | signal contacts 5 | high-power contacts max. 2 | | | | | | | | | | |
|  |  |  |  | | | | | | | | | | |
| art. no. DBM 9W4 T ... | design female | signal contacts 5 | high-power contacts max. 4 | | | | | | | | | | |
|  |  |  |  | | | | | | | | | | |
| art. no. DBM 13W3 T ... | design female | signal contacts 10 | high-power contacts max. 3 | | | | | | | | | | |
|  |  |  |  | | | | | | | | | | |
| art. no. DBM 17W2 T ... | design female | signal contacts 15 | high-power contacts max. 2 | | | | | | | | | | |
| please indicate: <table style="margin-left: 20px;"> <tr> <td colspan="2">... type of mounting (optional)</td> </tr> <tr> <td>RC M3</td> <td>= snap-in-clip with M3</td> </tr> <tr> <td>RC UN</td> <td>= snap-in-clip with UNC 4-40</td> </tr> <tr> <td>RCS M3</td> <td>= snap-in-clip and screwing bolt with M3</td> </tr> <tr> <td>RCS UN</td> <td>= snap-in-clip and screwing bolt with UNC 4-40</td> </tr> </table> | | | | ... type of mounting (optional) | | RC M3 | = snap-in-clip with M3 | RC UN | = snap-in-clip with UNC 4-40 | RCS M3 | = snap-in-clip and screwing bolt with M3 | RCS UN | = snap-in-clip and screwing bolt with UNC 4-40 |
| ... type of mounting (optional) | | | | | | | | | | | | | |
| RC M3 | = snap-in-clip with M3 | | | | | | | | | | | | |
| RC UN | = snap-in-clip with UNC 4-40 | | | | | | | | | | | | |
| RCS M3 | = snap-in-clip and screwing bolt with M3 | | | | | | | | | | | | |
| RCS UN | = snap-in-clip and screwing bolt with UNC 4-40 | | | | | | | | | | | | |
| case frame: | steel, tin plated | | | | | | | | | | | | |

K

L


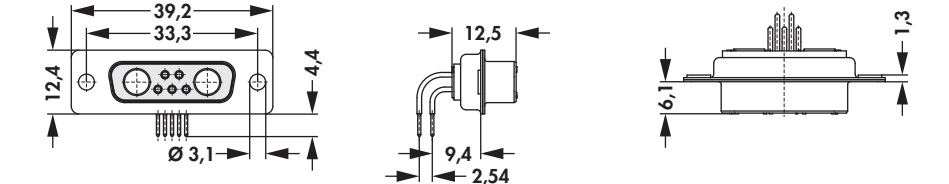

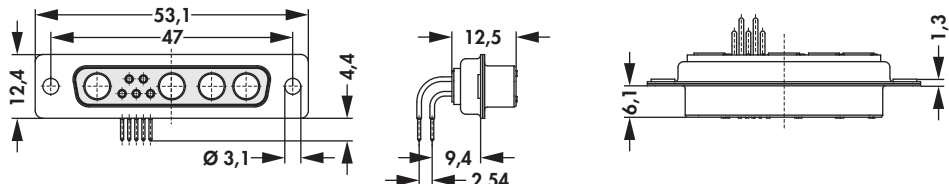

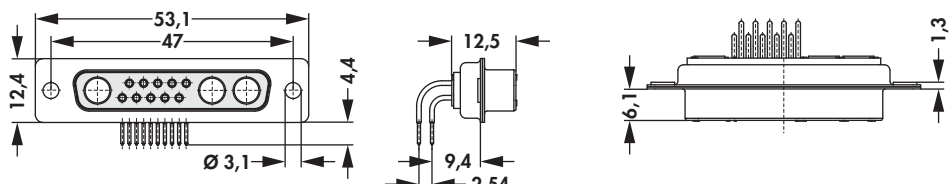

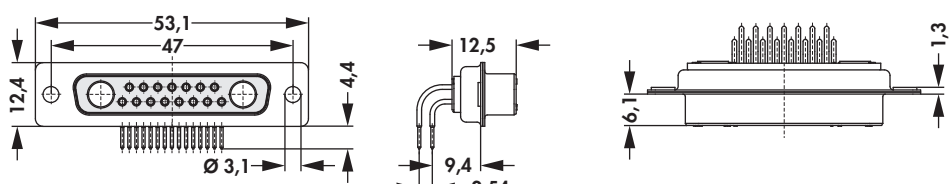
M

N

D-Sub mixed layout connectors

Female headers

- gold-plated signal contacts, angled
- equipped with turned precision contacts
- with PCB connection, angled
- combinable with high-power contacts **HAB ...** → I 27 - I 28

| | | | |
|---|---|------------------------|----------------------------|
|  |  | | |
| <p>art. no.</p> | <p>design</p> | <p>signal contacts</p> | <p>high-power contacts</p> |
| <p>DBM 7W2 TA ...</p> | <p>female</p> | <p>5</p> | <p>max. 2</p> |
|  |  | | |
| <p>art. no.</p> | <p>design</p> | <p>signal contacts</p> | <p>high-power contacts</p> |
| <p>DBM 9W4 TA ...</p> | <p>female</p> | <p>5</p> | <p>max. 4</p> |
|  |  | | |
| <p>art. no.</p> | <p>design</p> | <p>signal contacts</p> | <p>high-power contacts</p> |
| <p>DBM 13W3 TA ...</p> | <p>female</p> | <p>10</p> | <p>max. 3</p> |
|  |  | | |
| <p>art. no.</p> | <p>design</p> | <p>signal contacts</p> | <p>high-power contacts</p> |
| <p>DBM 17W2 TA ...</p> | <p>female</p> | <p>15</p> | <p>max. 2</p> |
| <p>please indicate:</p> | <p>... type of mounting (optional) MW M3 = metal angle with M3 MW UN = metal angle with UNC 4-40 MWS M3 = metal angle screwing bolt with M3 MWS UN = metal angle and screwing bolt with UNC 4-40</p> | | |
| <p>casing frame:</p> | <p>steel, tin plated</p> | | |

A

High-power contacts, loose

B


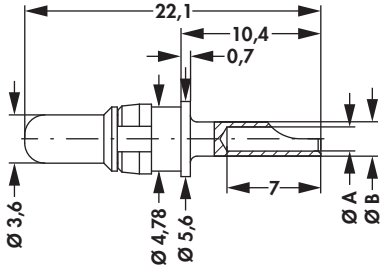
Pin contacts

- 10 A / 20 A / 40 A
- combinable with cases **DSM ...** → I 17-I 21

- straight, with solder bucket connection

C

D


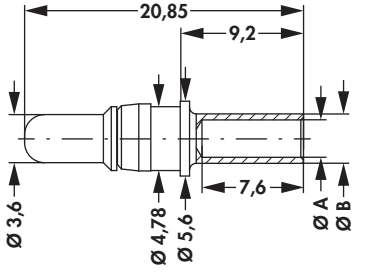
|  |  | | |
|---|--|-----------|------|
| art. no. | current [A] | dim. [mm] | |
| | | A | B |
| HAS 10 L | 10 | 1.8 | 2.55 |
| HAS 20 L | 20 | 2.8 | 3.70 |
| HAS 40 L | 40 | 4.8 | 5.60 |

E

- straight, with connection crimp

F

G


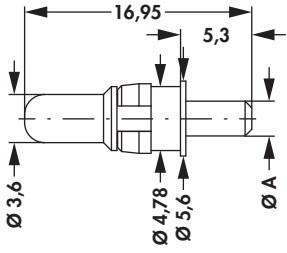
|  |  | | |
|--|---|-----------|------|
| art. no. | current [A] | dim. [mm] | |
| | | A | B |
| HAS 10 C | 10 | 1.8 | 2.55 |
| HAS 20 C | 20 | 2.8 | 3.70 |
| HAS 40 C | 40 | 4.8 | 5.60 |

H

- straight, with PCB connection

I

K

|  |  | | |
|---|--|-----------|--|
| art. no. | current [A] | dim. [mm] | |
| | | A | |
| HAS 10 T | 10 | 2.0 | |
| HAS 20 T | 20 | 2.6 | |
| HAS 40 T | 40 | 3.2 | |

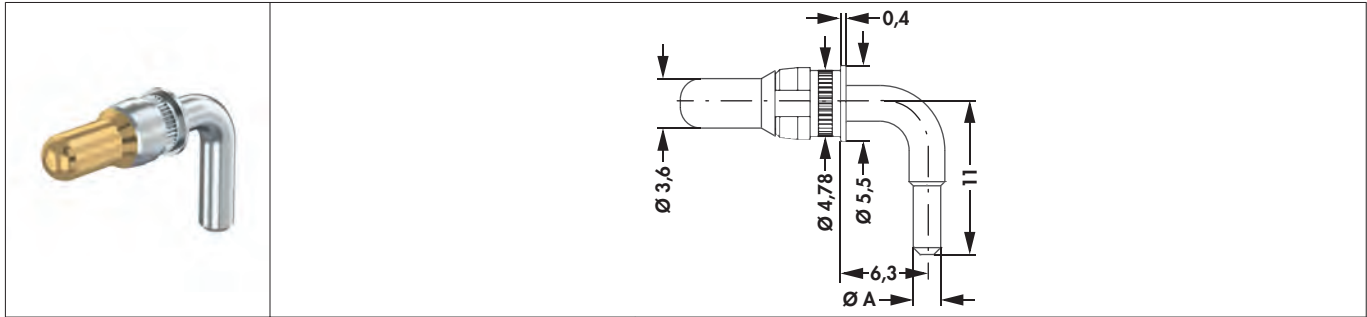
L

M

N

High-power contacts, loose

– angled, with PCB connection (tin-plated)



| art. no. | current [A] | dim. [mm] |
|------------------|-------------|-----------|
| | | A |
| HAS 10 TA | 10 | 2.00 |
| HAS 20 TA | 20 | 2.85 |
| HAS 40 TA | 40 | 3.75 |

A

High-power contacts, loose

B


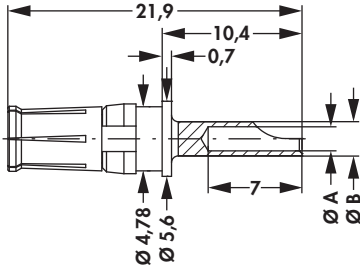
Socket contact

- 10 A / 20 A / 40 A
- combinable with cases **DBM ...** → I 22-I 26

- straight, with solder bucket connection

C

D


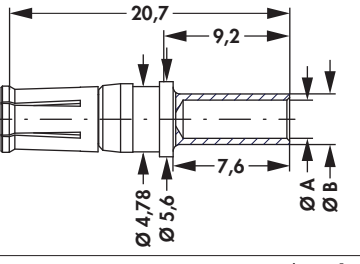
|  |  | | |
|---|--|-----------|------|
| art. no. | current [A] | dim. [mm] | |
| | | A | B |
| HAB 10 L | 10 | 1.8 | 2.55 |
| HAB 20 L | 20 | 2.8 | 3.70 |
| HAB 40 L | 40 | 4.8 | 5.60 |

E

- straight, with connection crimp

F

G

|  |  | | |
|--|---|-----------|------|
| art. no. | current [A] | dim. [mm] | |
| | | A | B |
| HAB 10 C | 10 | 1.8 | 2.55 |
| HAB 20 C | 20 | 2.8 | 3.70 |
| HAB 40 C | 40 | 4.8 | 5.60 |

H


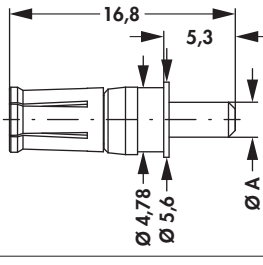
- straight, with PCB connection

I

K

L


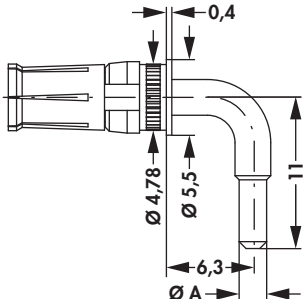
M

|  |  | | |
|---|--|-----------|---|
| art. no. | current [A] | dim. [mm] | |
| | | A | B |
| HAB 10 T | 10 | 2.0 | |
| HAB 20 T | 20 | 2.6 | |
| HAB 40 T | 40 | 3.2 | |

N

High-power contacts, loose

– angled, with PCB connection (tin-plated)

|  |  | |
|---|--|----------------|
| art. no. | current [A] | dim. [mm] A |
| HAB 10 TA | 10 | 2.00 |
| HAB 20 TA | 20 | 2.85 |
| HAB 40 TA | 40 | 3.75 |

A

D-Sub in SMD-mounting

Male and female headers

– **packing:** tape and reel (150 pcs/reel); reel outer diameter 330 mm

| | | | | | | |
|---------------------|-----------------|-----------|-----------|------------|-----------|--|
| | | | | | | |
| art. no. | no. of contacts | dim. [mm] | | | | |
| DS 09 SMD TR | 9 | A 30.8 | B 25.0 | Y 10.98 | Z 1.37 | |
| DS 15 SMD TR | 15 | 39.2 | 33.3 | 19.20 | | |
| DS 25 SMD TR | 25 | 53.1 | 47.0 | 33.12 | | |
| DS 37 SMD TR | 37 | 69.5 | 63.5 | 49.68 | 1.38 | |
| | | | | | | |
| art. no. | no. of contacts | dim. [mm] | | | | |
| DB 09 SMD TR | 9 | A 30.8 | B 25.0 | Y 10.98 | Z 1.37 | |
| DB 15 SMD TR | 15 | 39.2 | 33.3 | 19.20 | | |
| DB 25 SMD TR | 25 | 53.1 | 47.0 | 33.12 | | |
| DB 37 SMD TR | 37 | 69.5 | 63.5 | 49.68 | 1.38 | |

I

K


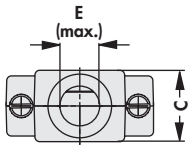
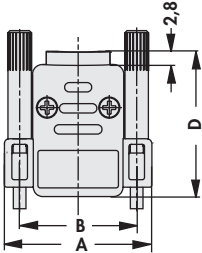
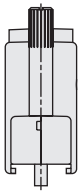

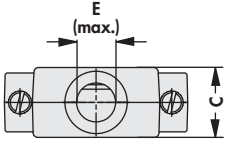
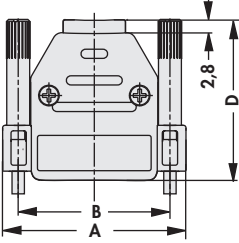
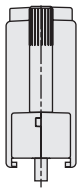
L


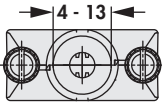
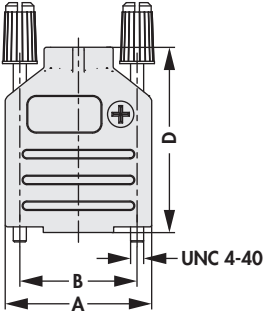
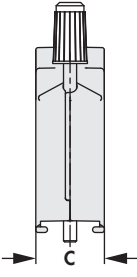
M

N

D-Sub hoods

- E = max. diameter of the cable entry in mm
- threaded bolt UNC 4-40
- large cable space with few components
- 9-37 contacts can be mounted in series in (C = 3 HP) grid, thus especially suitable for 19" technology

| | | | | | | |
|---|---|--|---|------|------|------|
|  |  |  |  | | | |
| art. no. | no. of contacts | dim. [mm] | | | | |
| | | A | B | C | D | E |
| DH 09 ... | 9 | 31.5 | 25 | 15.2 | 31 | 8.5 |
|  |  |  |  | | | |
| art. no. | no. of contacts | dim. [mm] | | | | |
| | | A | B | C | D | E |
| DH 15 ... | 15 | 40.0 | 33.3 | 15.2 | 33.5 | 8.5 |
| DH 25 ... | 25 | 53.5 | 47.0 | | 38.0 | 11.0 |
| DH 37 ... | 37 | 70.0 | 63.5 | | 40.0 | |
| DH 50 ... | 50 | 67.5 | 61.1 | 18.2 | | |
| please indicate: | | | | | | |
| | | ... surface of case | | | | |
| | | S = plastic, black | | | | |
| | | M = plastic, metallized | | | | |

| | | | | | |
|---|---|--|---|------|--|
|  |  |  |  | | |
| art. no. | dim. [mm] | | | | |
| | A | B | C | D | |
| DH M 09 UN4 | 31.2 | 25.00 | 15 | 39.9 | |
| DH M 15 UN4 | 39.5 | 33.30 | | 41.5 | |
| DH M 25 UN4 | 53.4 | 47.04 | | 48.6 | |
| DH M 37 UN4 | 69.7 | 63.50 | | 50.0 | |

A
B
C
D
E
F
G
H
I
K
L
M
N


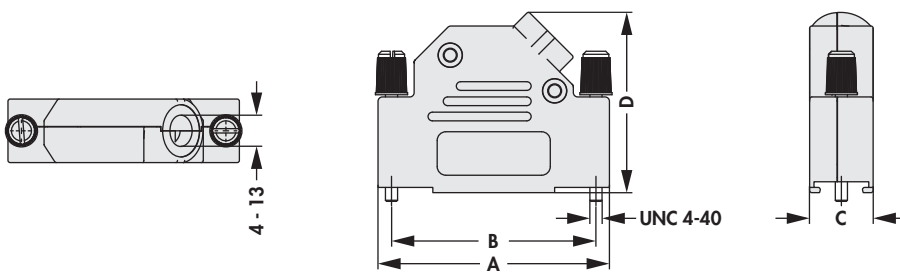
A

D-Sub hoods

B

C

D


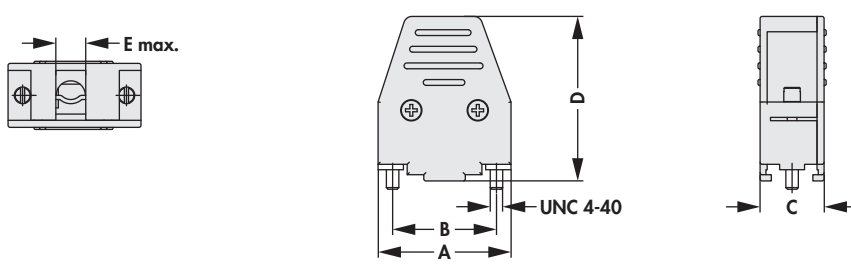
| | | | | |
|---|--|-----------|------|------|
|  |  | | | |
| | art. no. | dim. [mm] | | |
| | A | B | C | D |
| DH MA 09 UN4 | 31.0 | 25.00 | 14.5 | 36.3 |
| DH MA 15 UN4 | 39.5 | 33.30 | | 40.3 |
| DH MA 25 UN4 | 53.2 | 47.04 | | |
| DH MA 37 UN4 | 69.7 | 63.50 | | |

E

F

G

H

| | | | | | |
|--|--|-----------|------|------|------|
|  |  | | | | |
| | art. no. | dim. [mm] | | | |
| | A | B | C | D | E |
| DH ... 09 UN4 | 32.0 | 25.00 | 16.4 | 39.6 | 7.0 |
| DH ... 15 UN4 | 40.2 | 33.30 | | 41.2 | 9.2 |
| DH ... 25 UN4 | 54.0 | 47.04 | | 45.0 | 11.0 |
| DH ... 37 UN4 | 70.6 | 63.50 | | 50.0 | 12.0 |
| please indicate: | ... surface of case K = plastic, black KM = plastic, metallized | | | | |

I

K

L


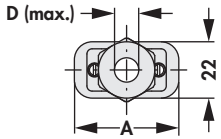
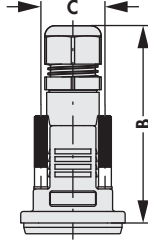
M

N

D-Sub hoods


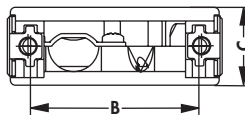
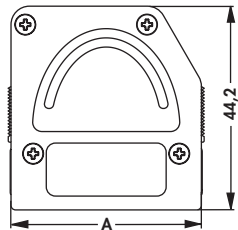
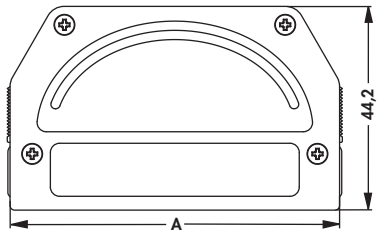
IP 67 protected

- straight cable outlet with pre-assembled strain relief
- threaded bolt UNC 4-40

| | | | | |
|---|---|-----------|---|----|
|  |  | |  | |
| | art. no. | dim. [mm] | | |
| | A | B | C | D |
| DH 09 L IP 67 | 40.8 | 77 | 25.00 | 10 |
| DH 15 L IP 67 | 49.5 | 79 | 33.30 | 12 |
| DH 25 L IP 67 | 63.0 | 87 | 47.04 | |


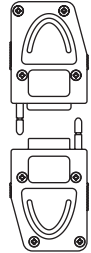
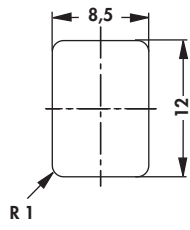
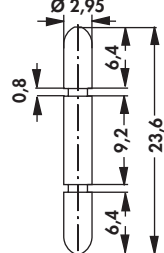
D-Sub hoods with quick-action locking system

- straight and side-gated cable outlet

| | | | | | | |
|--|--|-----------|--|------|--|--|
|  |  | | DH SV 09 ... / DH SV 15 ... | | DH SV 25 ... / DH SV 37 ... / DH SV 50 ... | |
| | | |  | |  | |
| art. no. | no. of contacts | dim. [mm] | | | | |
| | | A | B | C | | |
| DH SV 09 ... | 9 | 33.0 | 25.0 | 15.4 | | |
| DH SV 15 ... | 15 | 41.3 | 33.3 | | | |
| DH SV 25 ... | 25 | 55.0 | 47.0 | | | |
| DH SV 37 ... | 37 | 71.5 | 63.5 | | | |
| DH SV 50 ... | 50 | 69.1 | 61.1 | 18.4 | | |
| please indicate: ... surface of case S = plastic, black M = plastic, metallized | | | | | | |

Accessories – locking pin for hood – hood connection


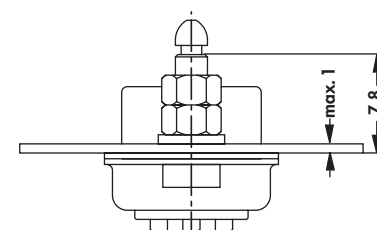

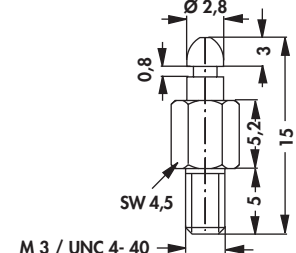
- 2 locking pins including locking plates

| | | | | | | |
|---|---|--|--|--|---|--|
|  |  | |  | |  | |
| | art. no. | | | | | |
| RS HH | | | | | | |

D-Sub hoods


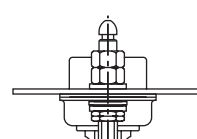

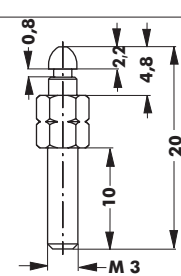
Accessories – locking pin for plug connector – hood connection

– 2 latch Pins including locking ring for connectors with thread M3/UNC 4-40

| | | | |
|---|---|--|---|
|  |  |  |  |
| art. no. | type of thread | art. no. | type of thread |
| RS SH 3 | M3 | RS SH 4 | UNC 4-40 |


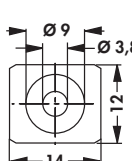
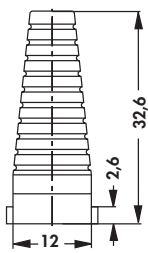
Accessories – locking pin for plug connector – hood connection

– 2 locking pins including spring washer, washer and nut for existing connector with through hole

| | | | |
|---|---|---|---|
|  |  |  |  |
| art. no. | | | |
| RS SH D | | | |

Cable sleeve - quick-release hood DH SV ...

– cable sleeves are supplied with chamfers, which are adequate to a diameter-grading of 0.5 mm; they can be cut off depending on the existing diameter of the cable.
 – for cable diameters 3...9 mm

| | | |
|---|--|---|
|  |  |  |
| art. no. | no. of contacts | |
| KT SV | 9 | |


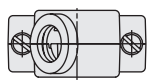
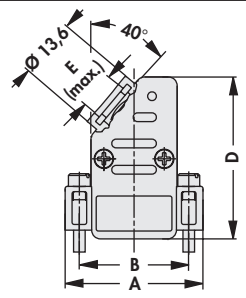
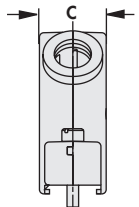
D-Sub hoods

D-Sub-hoods-compact

9-50 contacts



- width C - 3 HP
- version 9-37 pins can be mounted in series in 3 HP grid, thus especially suitable for 19" technology
- metallized version with excellent shielding against electrical and magnetic alternating fields
- integrated dust protective shroud
- captive latching screws with UNC 4-40 treads
- 2 side cable outputs:
 - 40° exit (9-50 contacts)
 - 90° exit (25-50 contacts)
- **E** = max. diameter of the cable bushing in mm


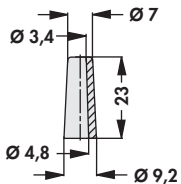
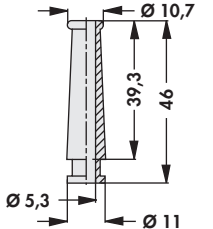
| art. no. | no. of contacts | dim. [mm] | | | | |
|-----------|-----------------|-----------|------|------|----|------|
| | | A | B | C | D | E |
| DH 09 ... | 9 | 31.5 | 25.0 | 15.2 | 37 | 8.5 |
| DH 15 ... | 15 | 40.0 | 33.3 | | 41 | 11.0 |
| DH 25 ... | 25 | 53.5 | 47.0 | | | |
| DH 37 ... | 37 | 70.0 | 63.5 | 18.2 | 41 | 12.0 |
| DH 50 ... | 50 | 67.8 | 61.1 | | | |

please indicate: ... surface of case
K = plastic, black
KM = plastic, metallized

D-Sub accessories

Suitable cable bushing


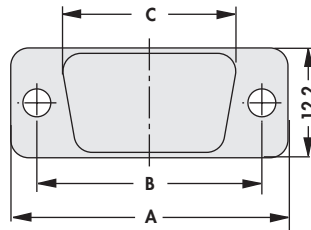
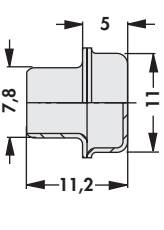
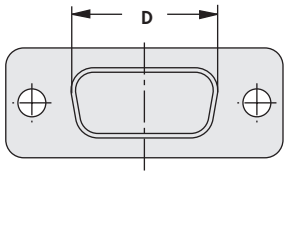
– protects the cable against damage by buckling

| | | | |
|---|---|---|---------------------|
|  |  |  | |
| KT 0915 | KT 2550 | | |
| art. no. | for no. of contacts | art. no. | for no. of contacts |
| KT 0915 | 9/ 15 | KT 2550 | 25/ 37/ 50 |

Cover for D-Sub cut outs in front and back panel


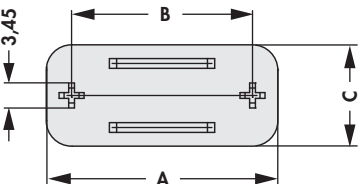
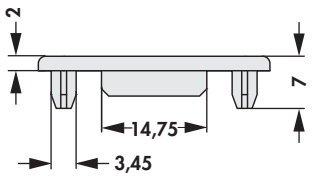
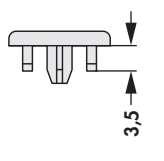
– suitable for EMC application, closed on one side

– blank covers for exact sealing of unused D-Sub cut outs in front- and backpanels, size and form are like D-Sub housings

| | | | | |
|---|---|--|---|------|
|  |  |  |  | |
| art. no. | dim. [mm] | | | |
| | A | B | C | D |
| BADM 09 | 30.8 | 25.0 | 19.2 | 16.3 |
| BADM 15 | 39.3 | 33.3 | 27.5 | 24.5 |
| BADM 25 | 53.0 | 47.0 | 41.2 | 38.3 |
| BADM 37 | 69.4 | 63.5 | 57.7 | 54.8 |
| caseing frame: | tin-plated | | | |

– plastic cover, blank, for blind D-Sub and other connector cutouts in front and rear panels

– simple mounting by clamping

| | | | |
|---|---|--|---|
|  |  |  |  |
| art. no. | dim. [mm] | | |
| | A | B | C |
| BADK 09 | 32.0 | 25.0 | 14.0 |
| BADK 15 | 40.3 | 33.3 | |
| BADK 25 | 54.0 | 47.0 | |
| BADK 37 | 70.5 | 63.5 | |
| BADK 50 | 68.0 | 61.0 | 16.5 |

D-Sub accessories


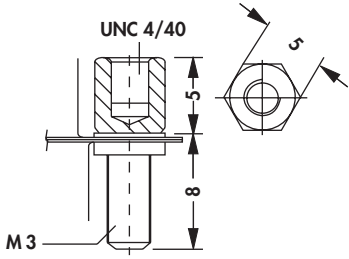
Screw fastening, mounted

- 2 screw fastenings incl. spacer, washer, nut
- please add a **V** to the corresponding art. no. ...

| | |
|-----------------|--|
| art. no. |  |
| ... V | |


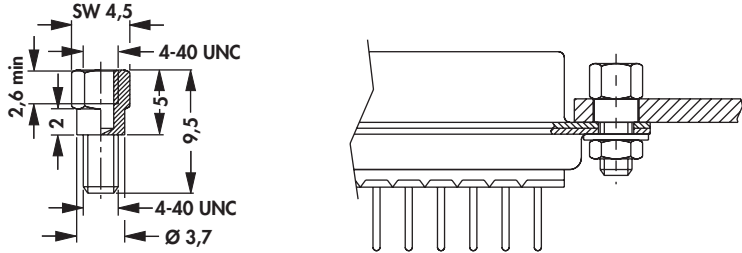
Screw fastening, loose

- 2 separate screw fasteners, with washer and nut

| | | |
|------------------|---|--|
| art. no. |  |  |
| V 2 | | |
| material: | screw - brass nickel-plated/ screw-nut - steel nickel-plated/ steel-washer galvanized | |

Screw fastening for assembly of cases, separate


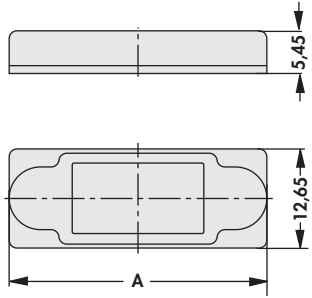
- 2 screw fastenings incl. spacer, washer, nut

| | | |
|------------------|---|--|
| art. no. |  |  |
| VG 2 | | |
| material: | steel-washer tin-plated/ screw and steel-screw-nut verzinkt | |

A


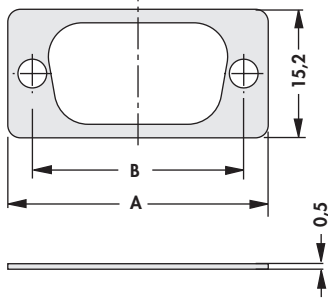
D-Sub accessories
HF-tight caps, male and female headers

– prevent HF-radiation at open interfaces

|  | | |  | | | | | |
|---|-----------------|--------|--|-----------------|-----------------|--------|--------|----------------|
| | art. no. | design | colour | dim. [mm] A | art. no. | design | colour | dim. [mm] A |
| | HFK S 09 | male | blue | 32.9 | HFK B 09 | female | red | 32.9 |
| | HFK S 15 | | | 41.3 | HFK B 15 | | | 41.3 |
| HFK S 25 | 55.7 | | | HFK B 25 | 55.7 | | | |
| annotation: | | | internal 50 µm electromagnetical protective coating | | | | | |

HF-seals

– as seal between plug and housing

|  | | |  | | | | | | | |
|--|---------------|--|---|-----------|--|--|--|------|------|--|
| | art. no. | | | dim. [mm] | | | | | | |
| | | | | A | | | | | B | |
| | HFD 09 | | | 30.8 | | | | | 25.0 | |
| HFD 15 | | | 39.4 | | | | | 33.3 | | |
| HFD 25 | | | 53.4 | | | | | 47.0 | | |
| HFD 37 | | | 70.7 | | | | | 63.5 | | |
| annotation: | | | extremely low transition resistance | | | | | | | |

I

K


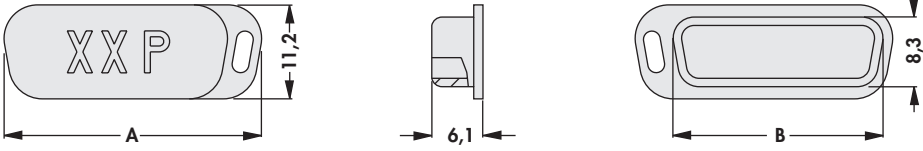
L

M


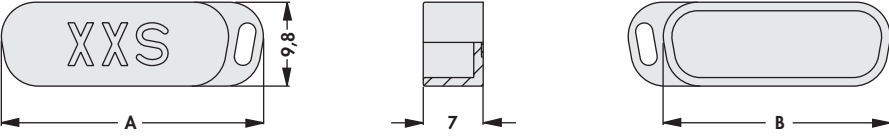
N

Dust protection caps

For male headers

| | | | |
|---|--|-----------|------|
|  |  | | |
| | art. no. | dim. [mm] | |
| | A | | B |
| SSK S 09 | 22.5 | | 18.2 |
| SSK S 15 | 30.6 | | 26.5 |
| SSK S 25 | 43.7 | | 39.8 |
| SSK S 37 | 60.3 | | 56.2 |

For female headers

| | | | |
|--|---|-----------|-------|
|  |  | | |
| | art. no. | dim. [mm] | |
| | A | | B |
| SSK B 09 | 22.3 | | 17.00 |
| SSK B 15 | 30.6 | | 25.00 |
| SSK B 25 | 44.1 | | 38.65 |
| SSK B 37 | 60.7 | | 55.30 |
| annotation: | extremely low transition resistance | | |

A

Technical data: USB / RJ / D-Sub connectors

B

C

D

E

F

G

H

I

K

L

M

N

| | USB 2 A 180, USB 2 A 90, USB 2 A 90 V, USB 2 B 90 | USB 2 B 180 | USB MN 2 B, USB MN 2 B SMD | USB 2 A SMD, USB 2 B SMD |
|---|--|---|--|---|
| contact material | CuSn alloy | | | |
| surface contact / contact sleeve | Ni+ \geq 0.2 μ m Au (selective) | | | |
| cycles of operation | 1500 | | 5000 | 1500 |
| nominal current | 0.5 A | | | |
| nominal voltage | 40 V _{RMS} /V _{DC} | | | |
| insulating body material | | PA, white | | |
| temperature range | -25°C ... +85°C (230°C / 5s) | | -40°C ... +105°C (260°C / 10s) | -25°C ... +85°C (260°C / 10s) |
| class of inflammability | UL 94 V-0 | | | |
| | USB MC 2 B SMD | USB 3 A 90, USB 3 A 90 V | USB 31 C | RJ 45 G, RJ 45 U |
| contact material | CuSn alloy | | | |
| surface contact / contact sleeve | Ni+ \geq 0.2 μ m Au (selective) | | | |
| cycles of operation | 10000 | 1500 | 10000 | 750 |
| nominal current | 1 A for Pin 1-5 / 1.8 A for Pin 1, 5 / 0.5 A for Pin 2-4 | 0.5 A | 5 A for VBUS Pin / 1.25 A for VCONN Pin | 1 A |
| nominal voltage | 40 V _{RMS} /V _{DC} | | | 125 V _{RMS} /V _{DC} |
| insulating body material | | | | |
| temperature range | -30°C ... +80°C (260°C / 10s) | -25°C ... +85°C (230°C / 5s) | 40°C ... +85°C (260°C / 10s) | -55°C ... +105°C (230°C / 5s) |
| class of inflammability | UL 94 V-0 | | | |
| | RJ 45 LED | DB ... L IP 67, DS ... L IP 67 | DS ..., DB ... | HD B ..., HD S ... |
| contact material | CuSn alloy | Cu-alloy | | |
| surface contact / contact sleeve | Ni+ \geq 0.2 μ m Au (se- lective) | hard gold plated over nickel | | |
| cycles of operation | 750 | | | |
| quality class / cyces of operation | | quality class 2 = 200 cycles of operation | | |
| volume resistance | | \leq 10 m Ω before strain, Δ R 10 m Ω after strain according to DIN 41652. part 2 (MIL- C-24308) | | |
| air gap and creep distance | | cont.-contact < 1 mm/ contact-earth < 1 mm | | cont.-contact < 0.6mm/ contact- earth < 0.6mm |
| nominal current | 1 A | 5A (20°C) | | 3A (20°C) |
| nominal voltage | 125 V _{RMS} /V _{DC} | 125 V AC | 125 V DC | 60 V AC |
| test voltage | | 1000 V | | |
| insulating body material | | PBT, GF | | |
| temperature range | 0°C ... +70°C | -55°C... +125°C | | |
| class of inflammability | | UL 94 V-0 | | |
| insulation resistance | | \geq 5 G Ω | | |

Technical data: USB / RJ / D-Sub connectors

| | DS BK ..., DB BK ... | DBM ..., DBM ... TA, DSM ..., DSM ... TA | HAB ... C, HAB ... L, HAB ... T, HAS ... C, HAS ... L, HAS ... T | HAB ... TA, HAS ... TA |
|---|---|---|---|---|
| contact material | Cu-alloy | | | |
| surface contact / contact sleeve | hard gold plated over nickel | nickel-phosphorus- gold-surface/ ($\geq 0.1\mu\text{m Au}$ over 2...4 $\mu\text{m chem. NiP}$) | Ni+ $\geq 0.2\mu\text{m Au}$ | Ni+ $\geq 0.2\mu\text{m Au}$ (se- lective) |
| quality class / cyces of operation | quality class 3 = 50 cycles of operation | quality class 2 = 200 cycles of operation | | |
| volume resistance | $\leq 10\text{ m}\Omega$ | | | |
| air gap and creep distance | <0.9mm according to VDE0110 | | | |
| nominal current | 1A at AWG 28/ 1.5A at AWG 26 | signal contact: $\leq 5\text{ A}$ / power contact: $\leq 10\text{ A}$ / 20 A / 40 A | power contact: $\leq 10\text{ A}$ / 20 A / 40 A | |
| nominal voltage | | 125 V AC | | |
| test voltage | 1000 V DC | 1000 V | | |
| insulating body material | PBTP, GF | Polyester, GF | | |
| temperature range | -55°C... +125°C | | -55°C... +150°C | |
| class of inflammability | UL 94 V-0 | | | |
| insulation resistance | 1 G Ω | $\geq 5\text{ G}\Omega$ | | |
| | DH M ... UN4, DH MA ... UN4 | DH K ... UN4, DH KM ... UN4 | DH ... L IP 67 | DH ... S, DH ... M, DH SV ... |
| insulating body material | zinc die-casting nickel- plated | ABS | | |
| temperature range | -40°C... +120°C | -40°C... +85°C | | |
| class of inflammability | UL 94 V-0 | | | |
| surface of case | zinc die-casting nickel- plated | plastic, black/ plastic, metallized | plastic, black | plastic, black/ plastic, metallized |
| | KT SV | DH ... K DH ... KM | BADM ... | BADK ... |
| insulating body material | EPTR | ABS | | ABS |
| class of inflammability | UL 94 V-0 (at thickness $\geq 3\text{mm}$), UL 94 V-1 | UL 94 V-0 | | UL 94 V-0 |
| surface of case | | plastic, black/ plastic, metallized | metal | plastic, grey |
| | HFK S ... HFK B ... | HFD ... | SSK S ... SSK B ... | |
| insulating body material | ABS | Silicone, filled with silver-plated coper particles | Polyethylene | |
| temperature range | -35°C ... +85°C | | | |
| class of inflammability | UL 94 V-0 | | | |



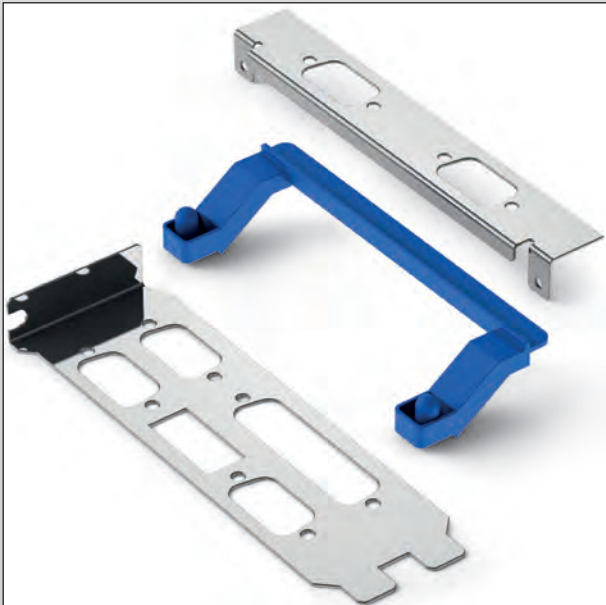
Brackets for PCI

- with or without fixing tab
- standard cut-outs
- custom-specific cut-outs
- custom-specific printings



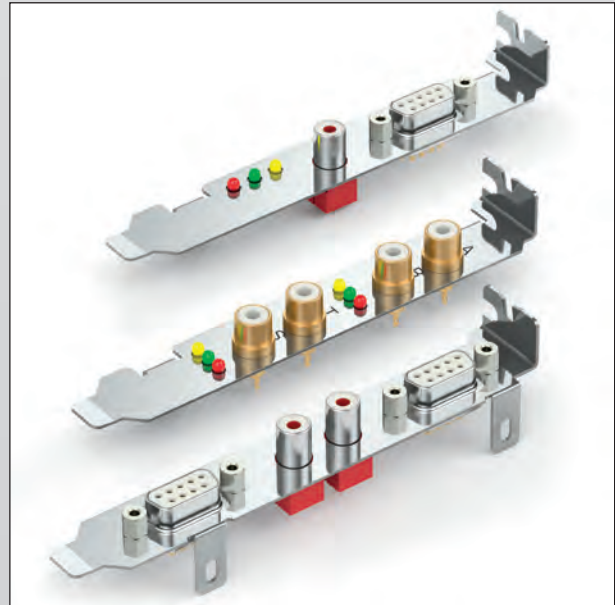
Brackets for AT and similar

- with or without fixing tab
- standard cut-outs
- custom-specific cut-outs
- custom-specific printings



Custom-specific brackets

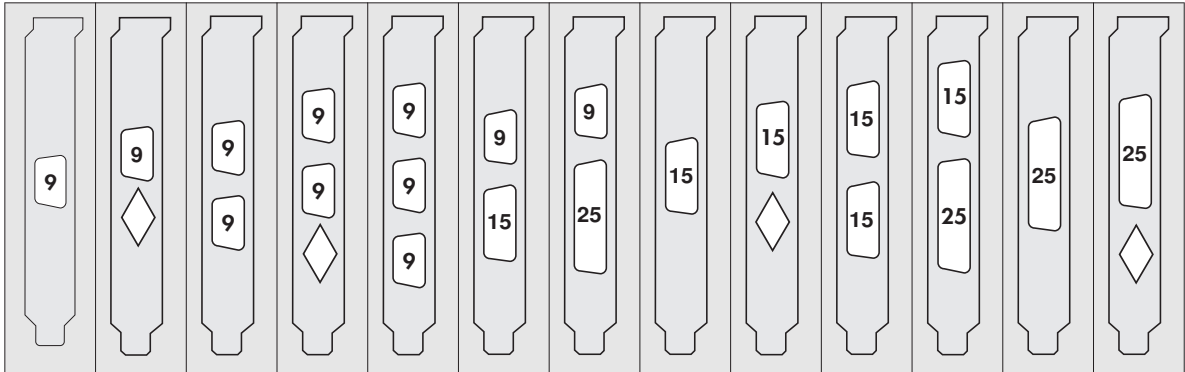
- double width
- special width
- with printing
- bracket (Retainer) for PCI cards



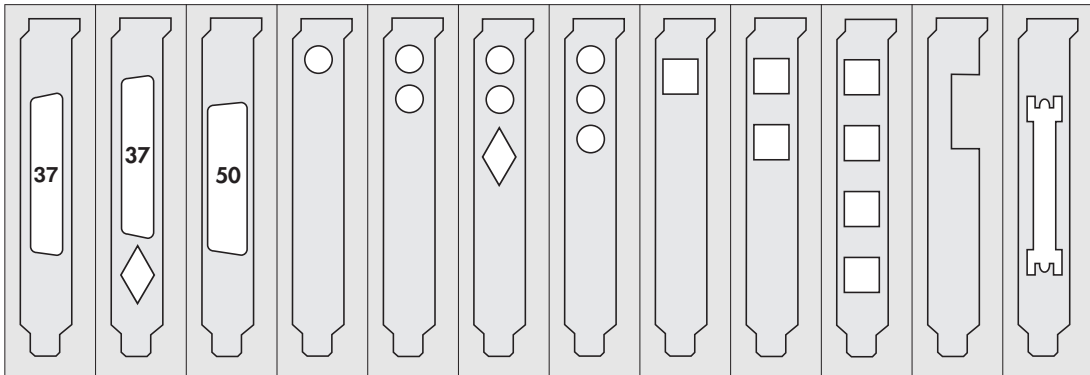
Equipped brackets

- equipped with D-Sub
- equipped with LED
- equipped with custom-specific components

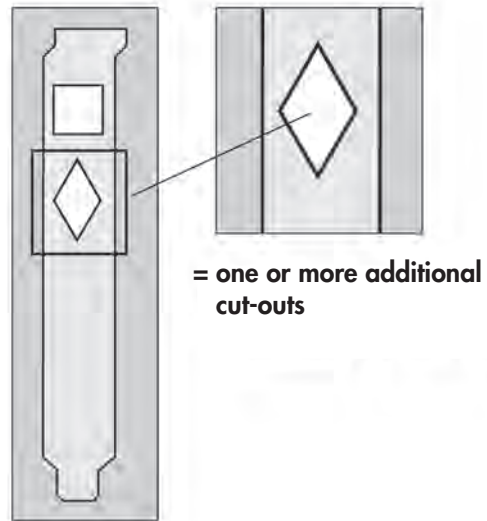
Index Bracket-Groups



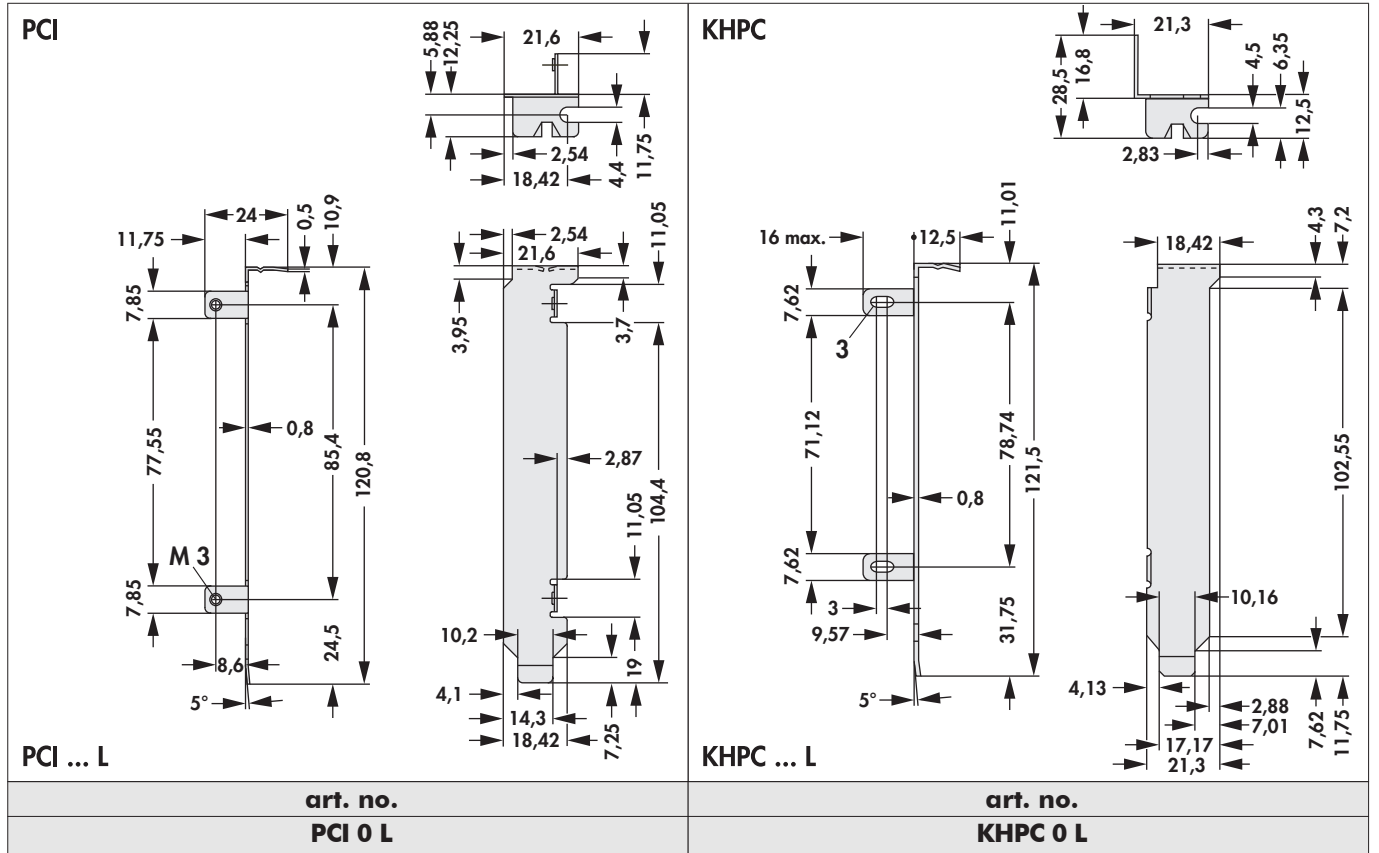
| | | | | | | | | | | | | | | |
|------|------|---|---|----|----|----|----|----|----|----|----|----|----|----|
| page | PCI | 7 | | 9 | | | 12 | 13 | 14 | | 15 | | 17 | 18 |
| | KHPC | 8 | 9 | 10 | 11 | 11 | 12 | 13 | 14 | 15 | 15 | 16 | 17 | 18 |



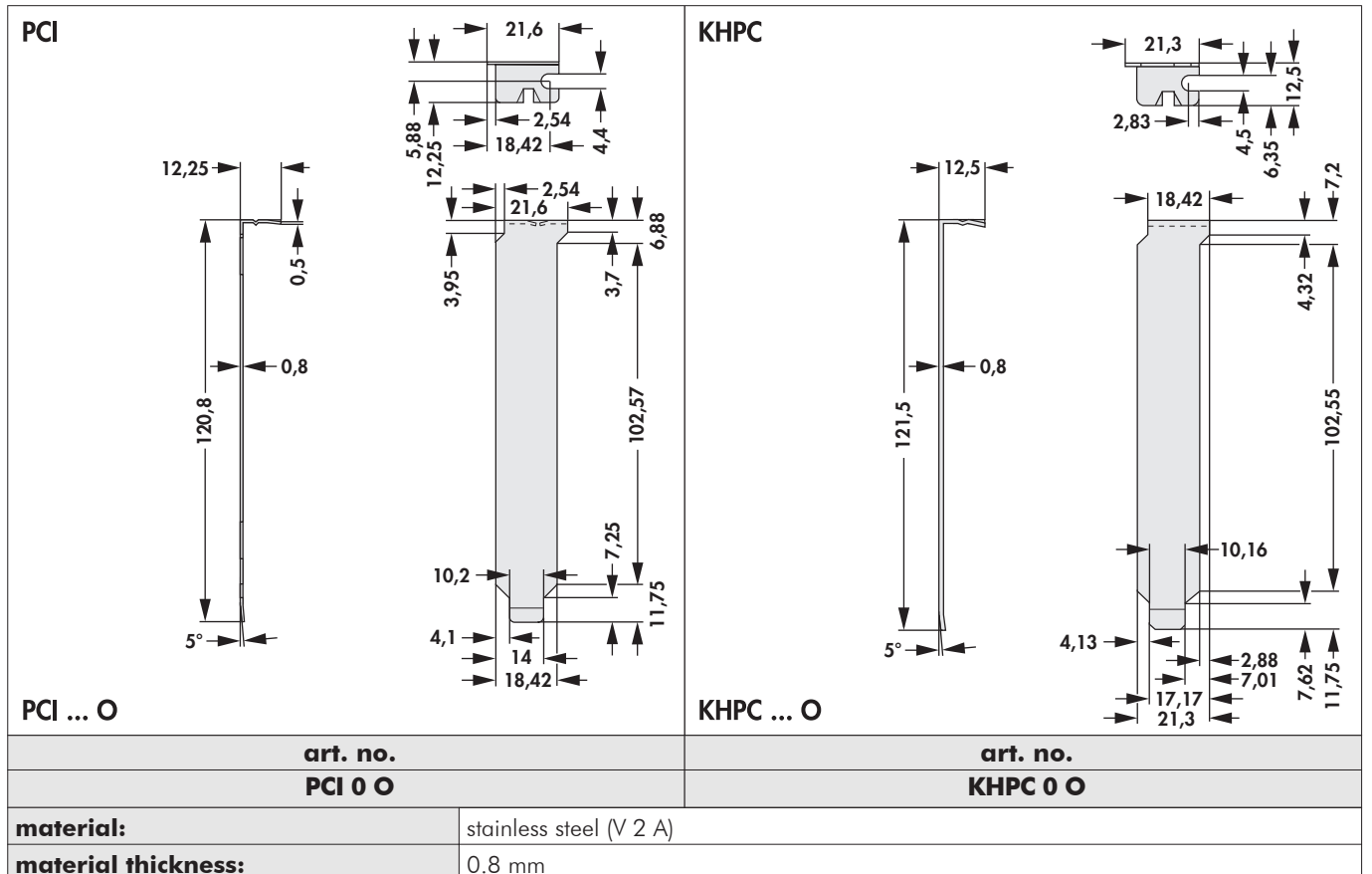
| | | | | | | | | | | | | | | |
|------|------|----|----|----|----|----|----|----|----|----|----|----|----|--|
| page | PCI | 18 | | | 21 | | 21 | | 22 | | 23 | | | |
| | KHPC | 19 | 20 | 20 | | 21 | | 22 | 22 | 23 | | 24 | 24 | |



Brackets with fixing strap and without cutout



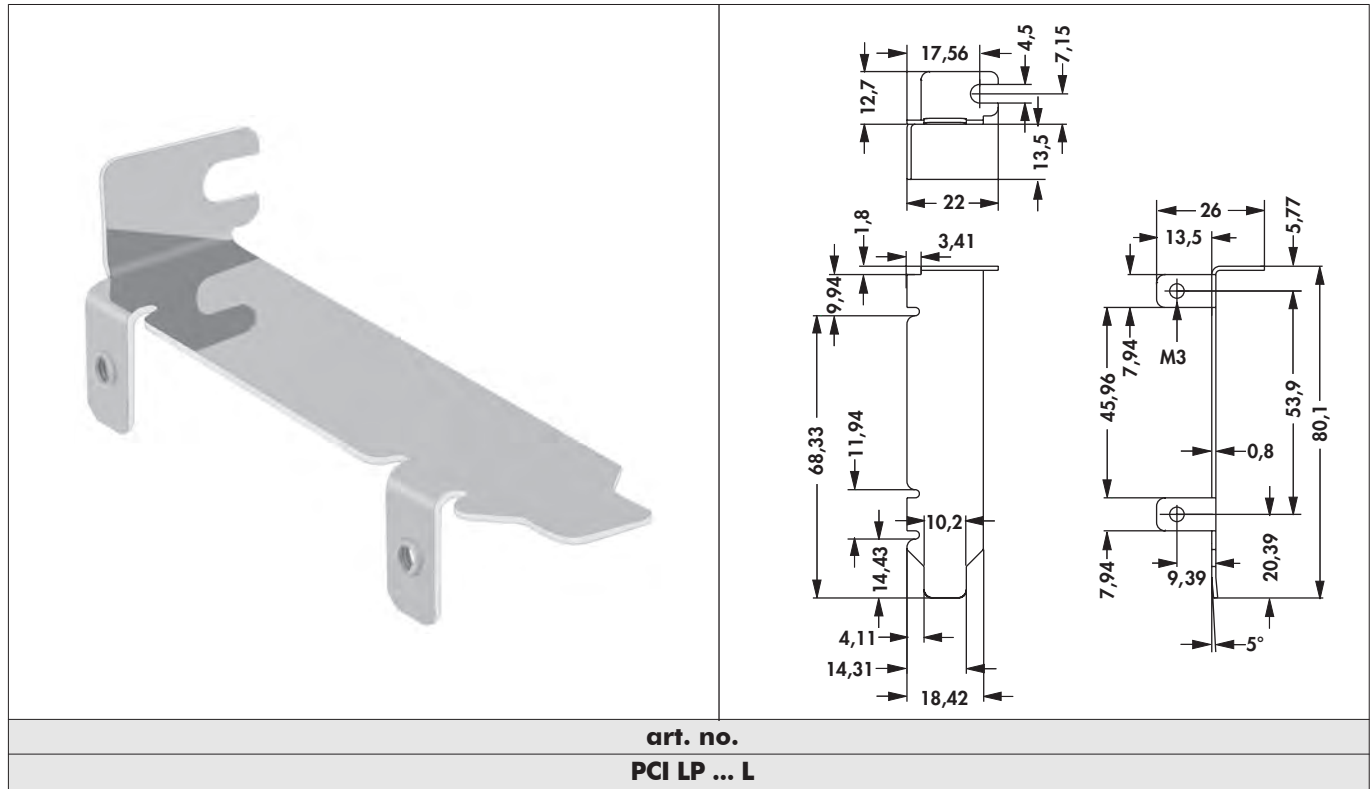
Bracket without fixing strap and without cutout



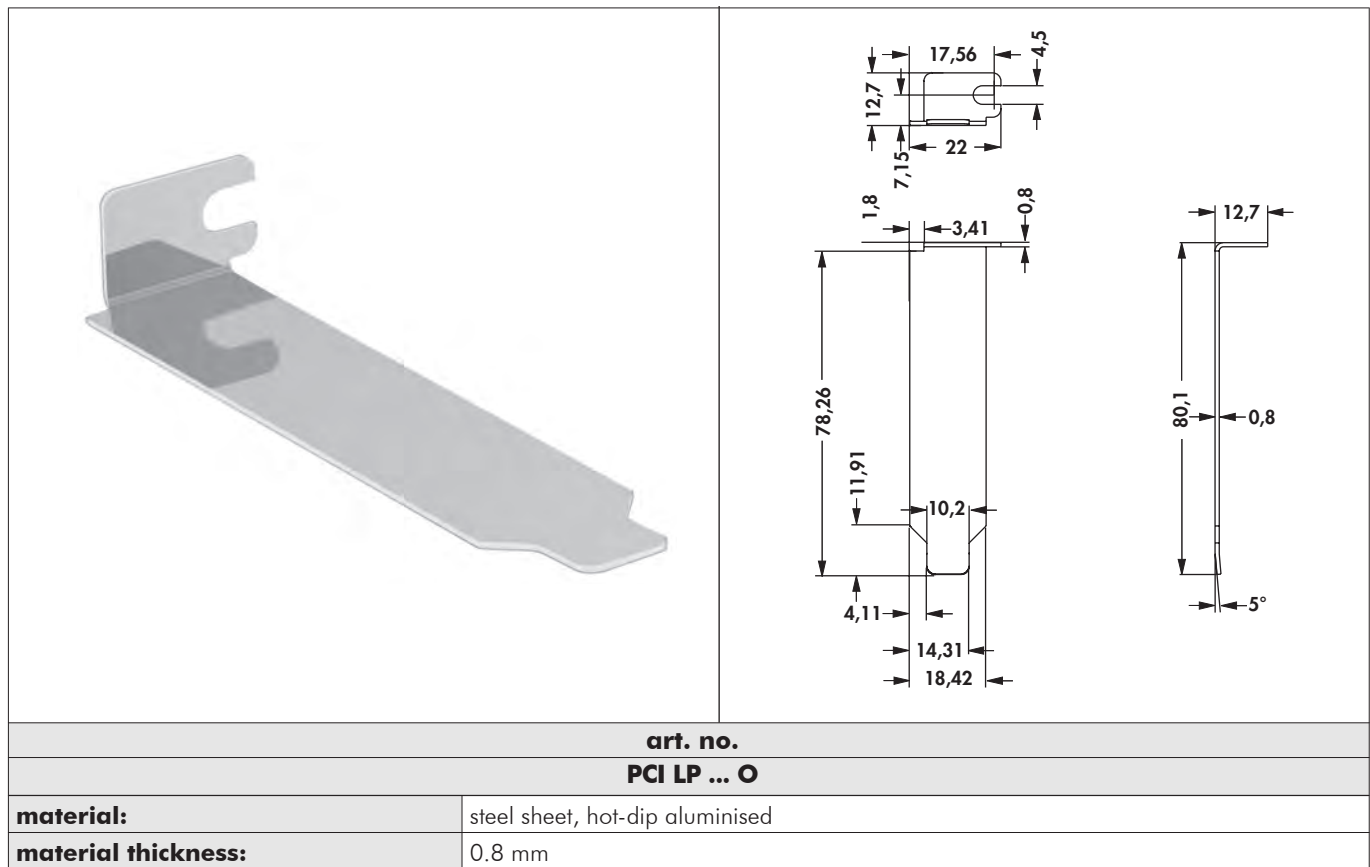
Low Profile bracket for PC

Low Profile bracket with fixing strap and without cutout

- with or without fixing tap; standard cutouts
- customer-specific cutouts and printing; double width (special widths) on request



Low Profile bracket without fixing strap and without cutout



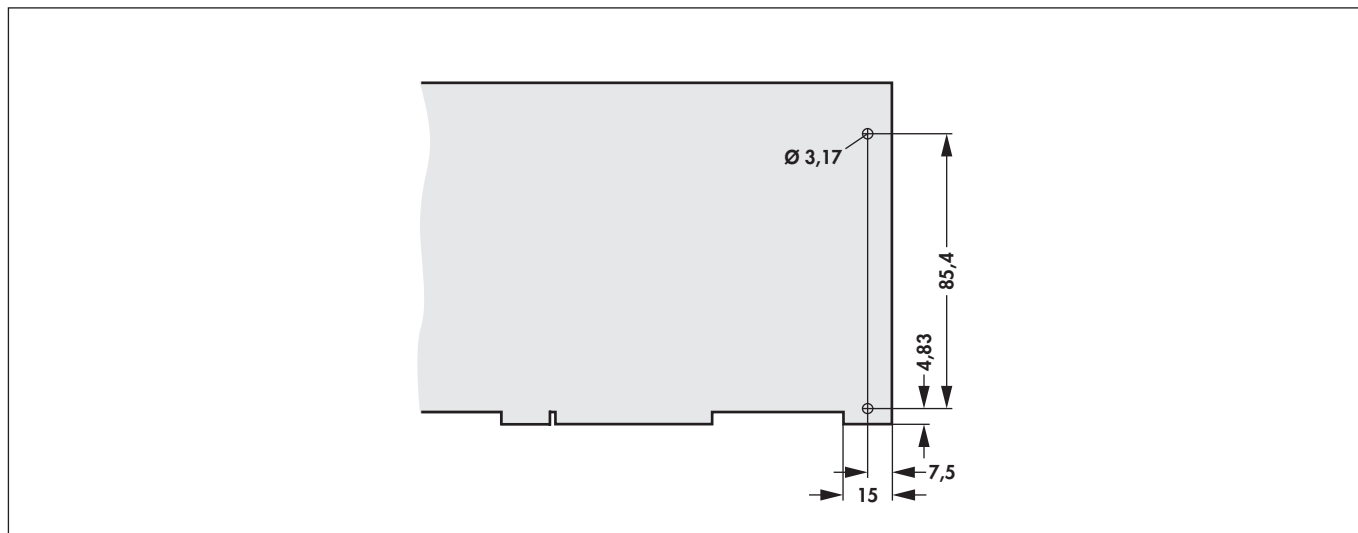
A

Dimensional drawing for PCBs

B

C

D

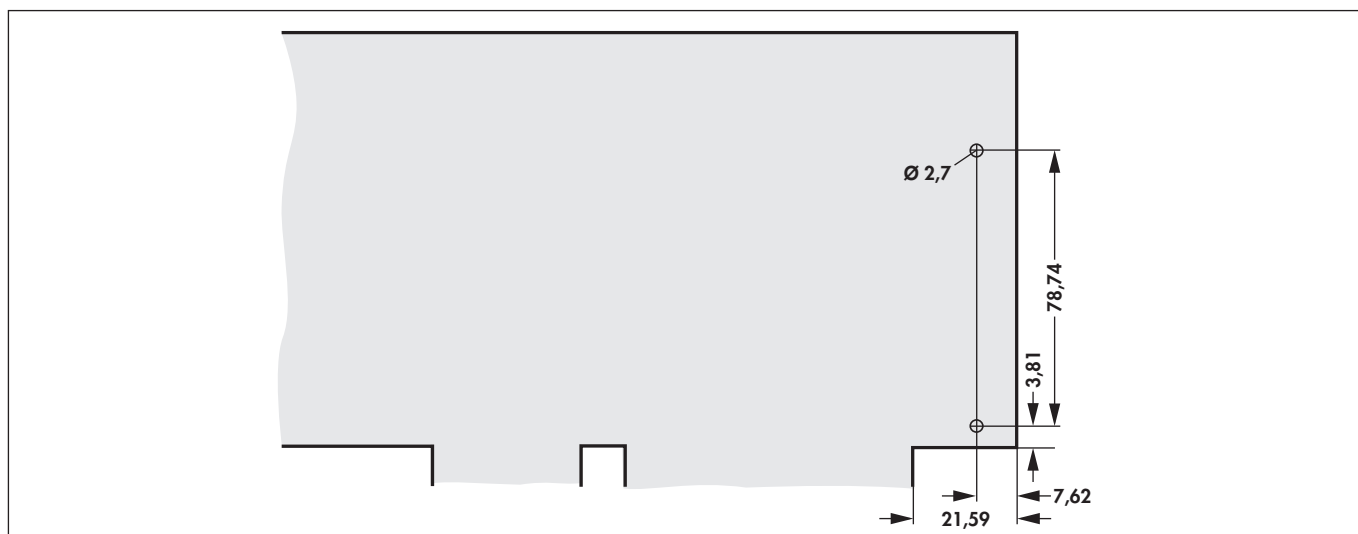

Dimensions to fix the PCI L ... - bracket to the PCB

E

F

G

H

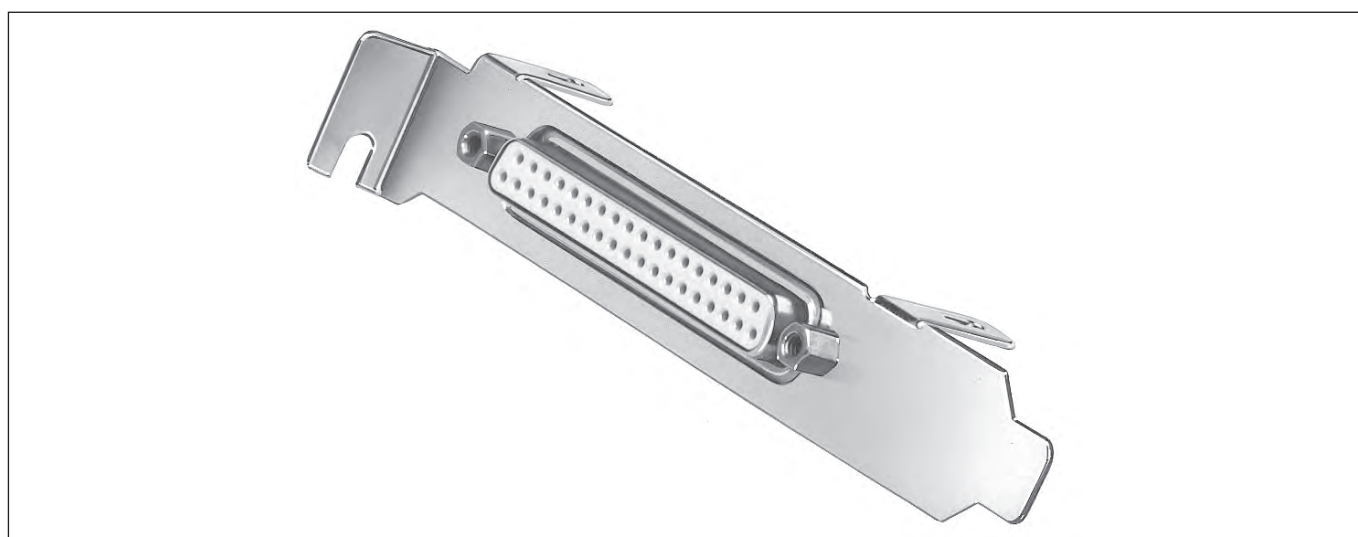

Dimensions to fix the KHPC L ... - bracket to the PCB

I

K

L

M

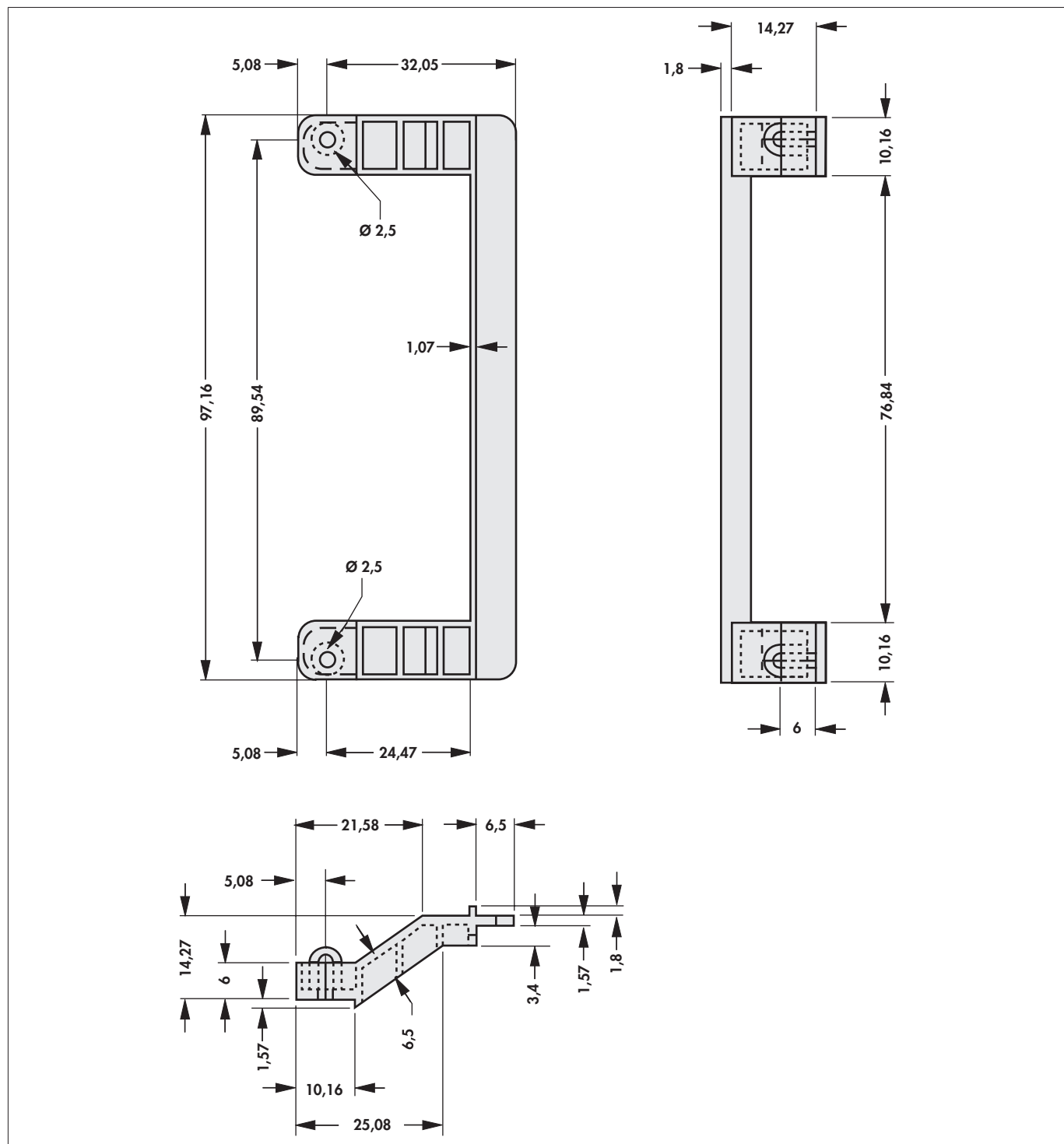

On request also available with D-Sub connector!

N

K 5

Retainers for PCI-cards

– suitable for all ISA-versions



art. no.
PCI R1

| | |
|---------------------------------|---------------|
| class of inflammability: | UL 94 V-0 |
| material: | polycarbonate |

A

B

C

D

E

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L

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N

A

Brackets for PC

B

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E

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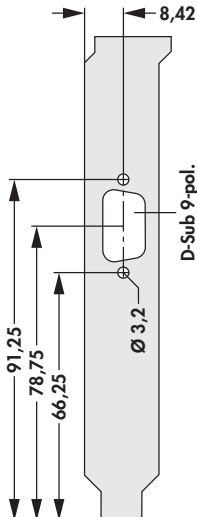
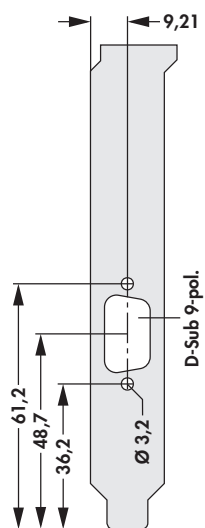
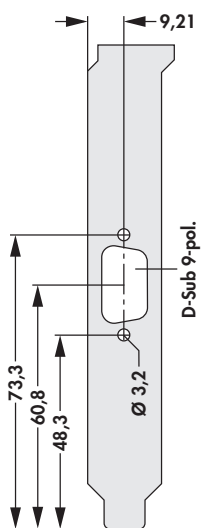
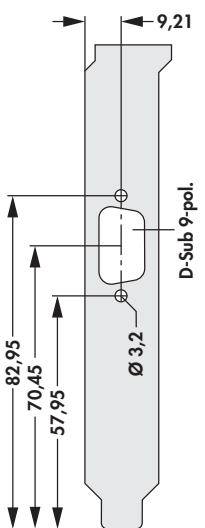
I

K

L


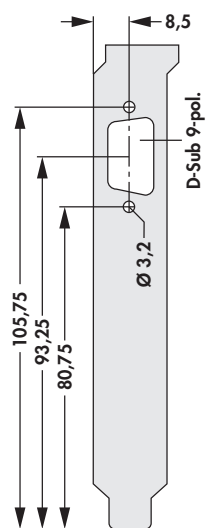
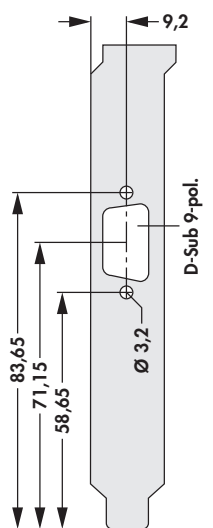
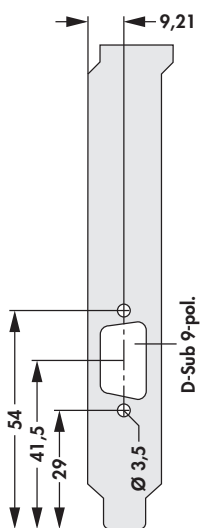
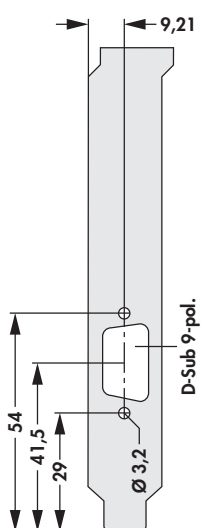
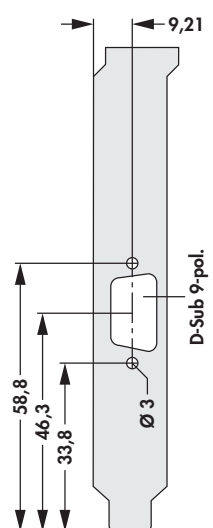
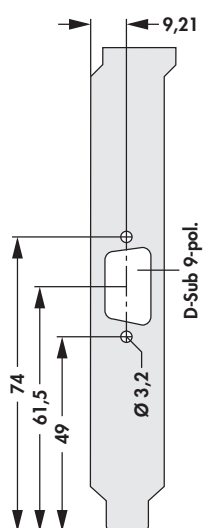
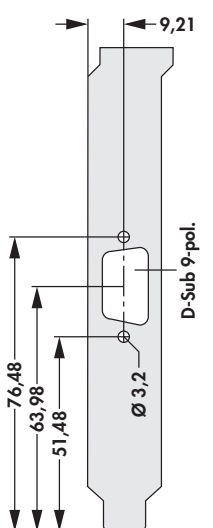
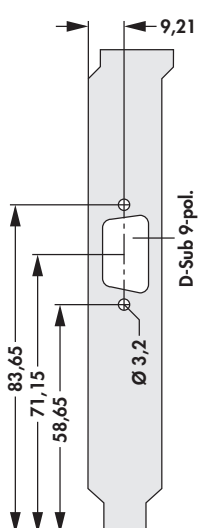
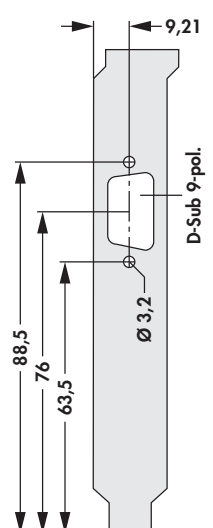
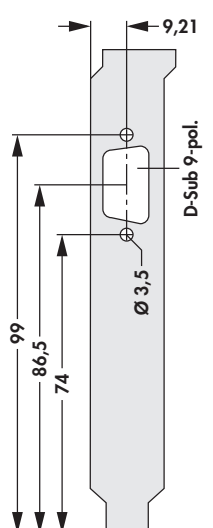
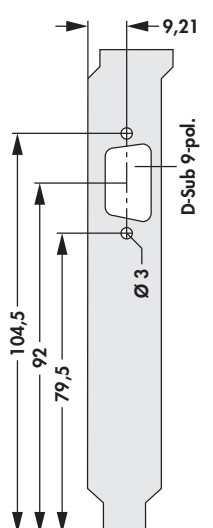
M

N

| | PCI 055 ... | PCI 004 ... | PCI 005 ... |
|--|---|--|---|
| <p>PCI 006 O</p>  |  |  |  |

K 7

If you do not find a suitable bracket,
please use the PCI / KHPC design sheet
at the end of section "K".

| | | | |
|--|--|--|--|
|  | <p>KHPC 002 O</p>  | <p>KHPC 003 ...</p>  | <p>KHPC 007 O</p>  |
| <p>KHPC 011 O</p>  | <p>KHPC 013 O</p>  | <p>KHPC 010 ...</p>  | <p>KHPC 093 L</p>  |
| <p>KHPC 094 O</p>  | <p>KHPC 096 O</p>  | <p>KHPC 008 O</p>  | <p>KHPC 014 O</p>  |

please indicate:

... fixing strap

- O = without fixing strap
- L = with fixing straps

A

Brackets for PC

B

C

D

E

F

G

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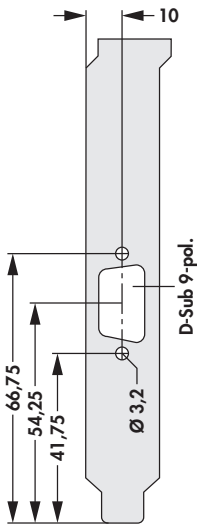
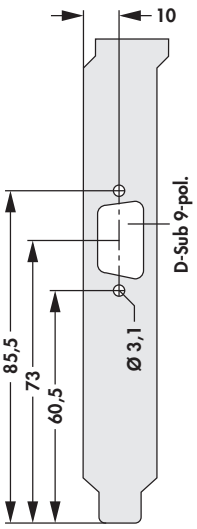
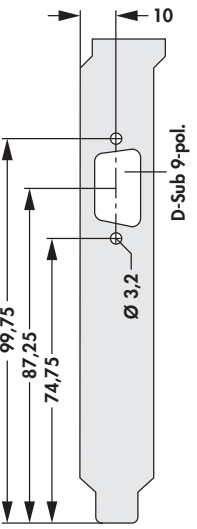

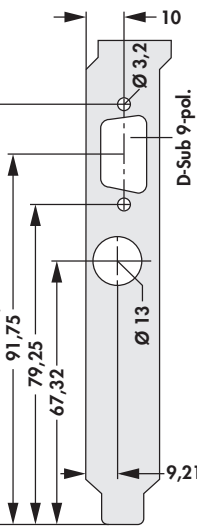

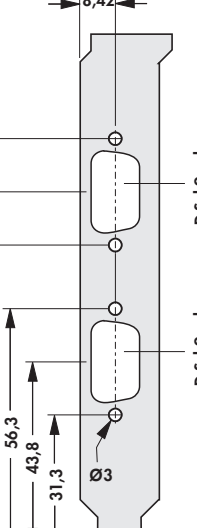
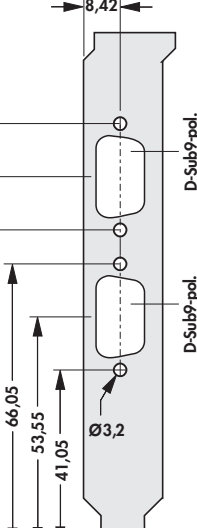
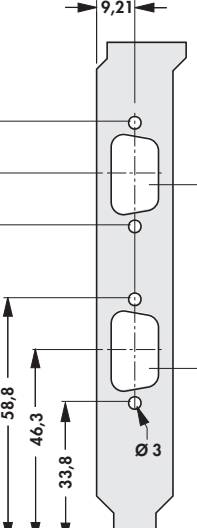
I

K

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| | | | |
|---|---|--|--|
|  | <p>KHPC 016 O</p>  <p>10 66,75 54,25 41,75 D-Sub 9-pol. Ø 3,2</p> | <p>KHPC 095 O</p>  <p>10 85,5 73 60,5 D-Sub 9-pol. Ø 3,1</p> | <p>KHPC 017 ...</p>  <p>10 99,75 87,25 74,75 D-Sub 9-pol. Ø 3,2</p> |
|  | <p>KHPC 131 L</p>  <p>10 104,25 91,75 79,25 67,32 D-Sub 9-pol. Ø 3,2 Ø 13 9,21</p> | | |
|  | <p>PCI 011 ...</p>  <p>8,42 96,3 83,8 71,3 56,3 43,8 31,3 D-Sub 9-pol. D-Sub 9-pol. Ø 3</p> | <p>PCI 013 ...</p>  <p>8,42 99,05 86,55 74,05 66,05 53,55 41,05 D-Sub 9-pol. D-Sub 9-pol. Ø 3,2</p> | <p>PCI 039 O</p>  <p>9,21 101,4 88,9 76,4 58,8 46,3 33,8 D-Sub 9-pol. D-SUB 9-pol. Ø 3</p> |

K 9

If you do not find a suitable bracket,
please use the PCI / KHPC design sheet
at the end of section "K".

| | | | |
|---------------------------|---------------------------|--------------------------|--------------------------|
| <p>PCI 041 ...</p> | <p>PCI 012 ...</p> | | |
| | <p>KHPC 144 O</p> | <p>KHPC 142 O</p> | <p>KHPC 053 O</p> |
| <p>KHPC 138 O</p> | <p>KHPC 006 O</p> | <p>KHPC 012 O</p> | <p>KHPC 141 O</p> |

please indicate:

... fixing strap

- O = without fixing strap
- L = with fixing straps

A

Brackets for PC

B

C

D

E

F

G

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I

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| KHPC 072 | KHPC 009 O | KHPC 143 O | KHPC 015 L |
|----------|------------|------------|------------|
| | | | |
| | | | |
| | | | |

K 11

If you do not find a suitable bracket,
please use the PCI / KHPC design sheet
at the end of section "K".

| | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|
| | <p>PCI 065 O</p> | <p>PCI 031 O</p> | <p>PCI 032 O</p> |
| | <p>KHPC 179 O</p> | <p>KHPC 177 O</p> | <p>KHPC 178 O</p> |
| <p>KHPC 076 O</p> | | | |

please indicate:

... fixing strap

O = without fixing strap

L = with fixing straps

A

Brackets for PC

B

C

D

E

F

G

H


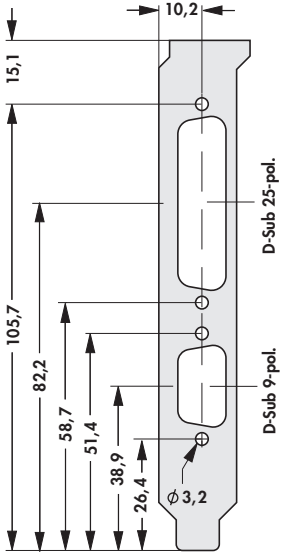

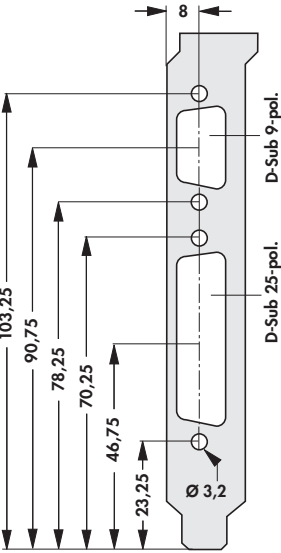
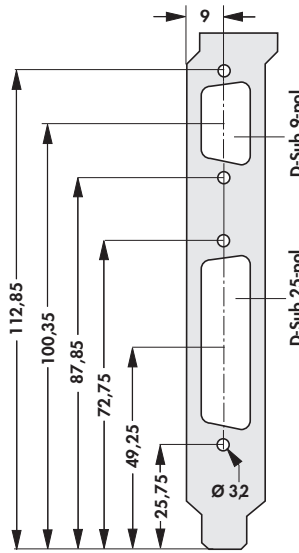
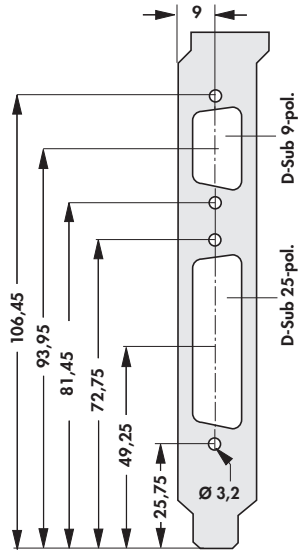
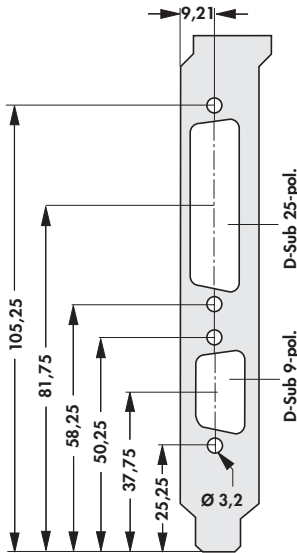
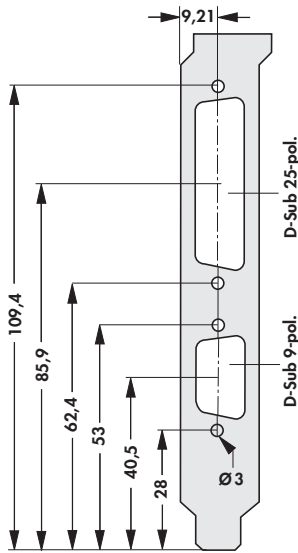
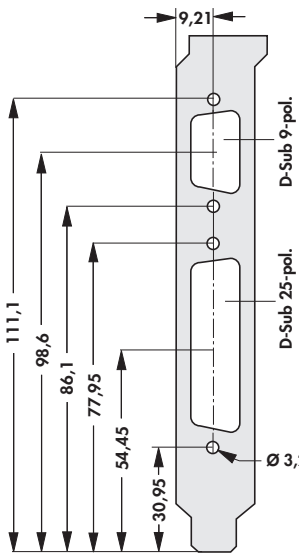
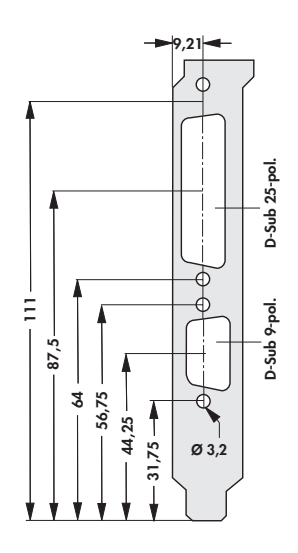
I

K

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| | | | |
|--|--|---|--|
|  | <p>PCI 033 ...</p>  | | |
|  | <p>KHPC 189 L</p>  | <p>KHPC 041 O</p>  | <p>KHPC 040 O</p>  |
| <p>KHPC 185 O</p>  | <p>KHPC 061 O</p>  | <p>KHPC 038 O</p>  | <p>KHPC 187 O</p>  |

K 13

If you do not find a suitable bracket,
please use the PCI / KHPC design sheet
at the end of section "K".

| | | | |
|--------------------------|--------------------------|----------------------------|---------------------------|
| <p>KHPC 188 O</p> | <p>KHPC 078 O</p> | | |
| | <p>PCI 014 L</p> | <p>PCI 045 ...</p> | <p>PCI 015 ...</p> |
| | <p>KHPC 019 O</p> | <p>KHPC 073 ...</p> | <p>KHPC 024 O</p> |

please indicate:

... fixing strap

- O = without fixing strap
- L = with fixing straps

A

Brackets for PC

B

C

D

E

F

G

H


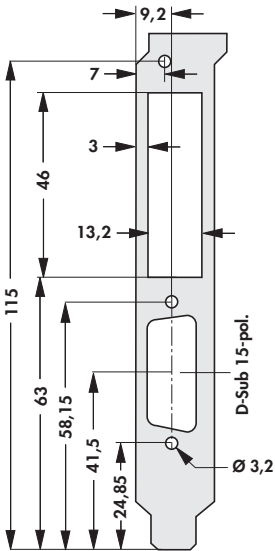
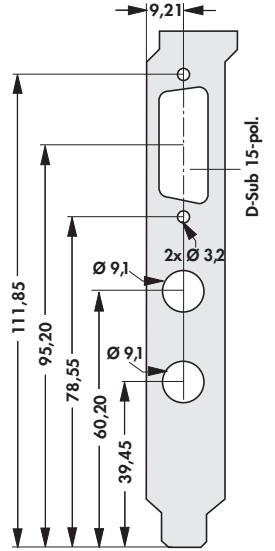
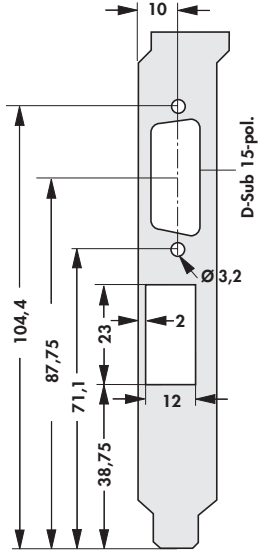
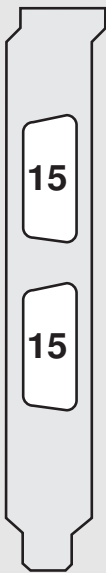
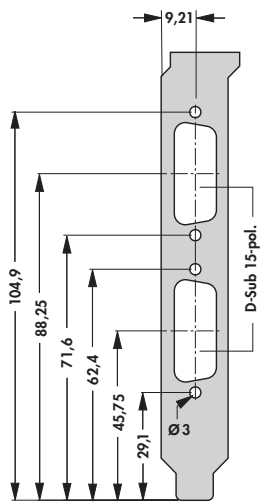
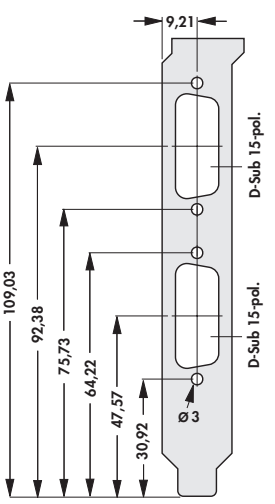
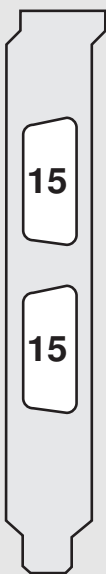
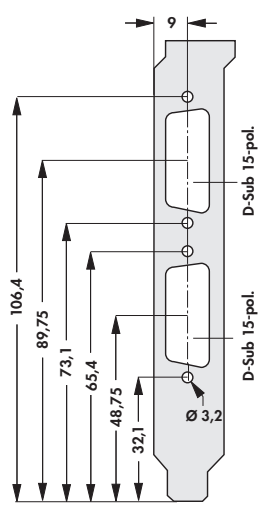
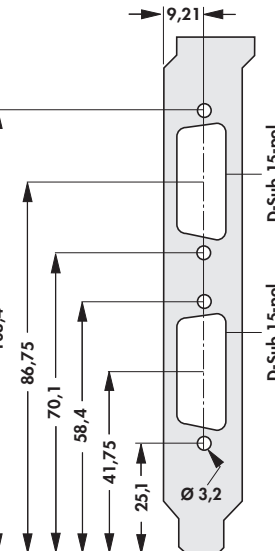
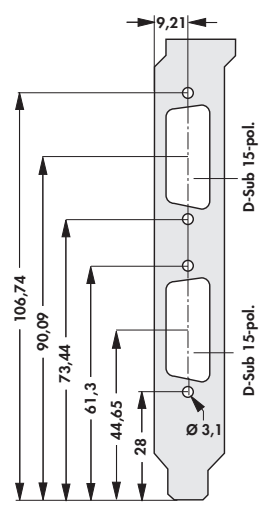
I

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| | | | |
|---|--|---|--|
|  | <p>KHPC 200 O</p>  | <p>KHPC 455 L</p>  | <p>KHPC 218 O</p>  |
|  | <p>PCI 047 O</p>  | <p>PCI 071 O</p>  | |
|  | <p>KHPC 230 O</p>  | <p>KHPC 022 L</p>  | <p>KHPC 225 O</p>  |

K 15

If you do not find a suitable bracket,
please use the PCI / KHPC design sheet
at the end of section "K".

| | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|
| <p>KHPC 069 O</p> | <p>KHPC 229 O</p> | <p>KHPC 018 O</p> | |
| | <p>KHPC 042 O</p> | <p>KHPC 241 O</p> | <p>KHPC 242 O</p> |
| <p>KHPC 075 O</p> | | | |

please indicate:

... fixing strap

O = without fixing strap

L = with fixing straps

A

Brackets for PC

B

C

D

E

F

G

H

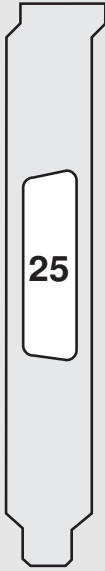
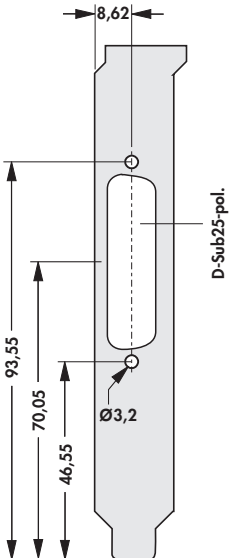
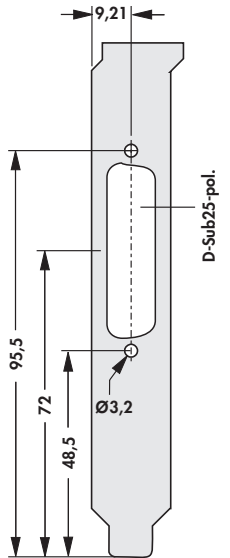
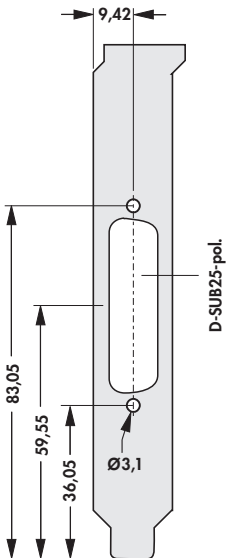
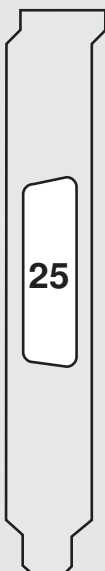
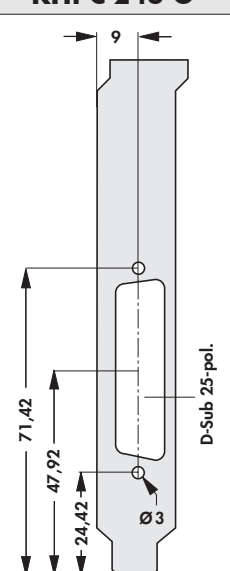
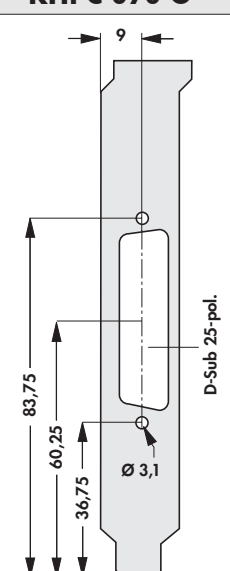
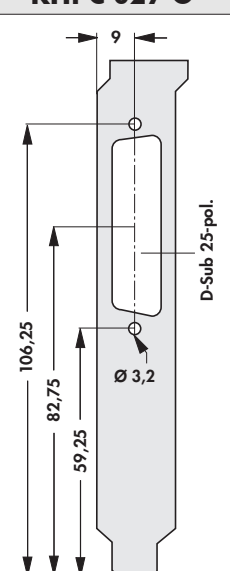
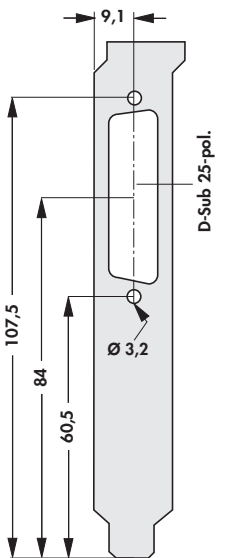
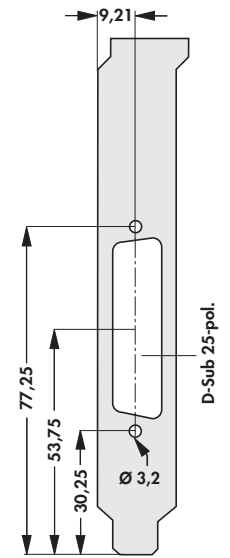
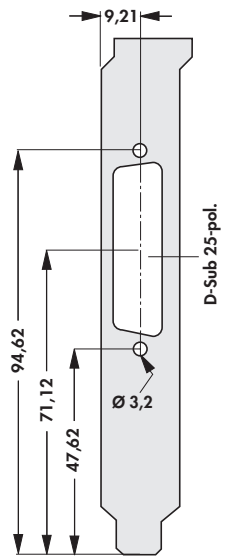
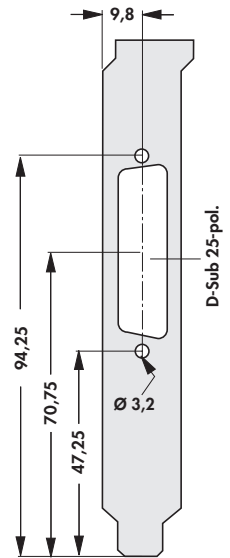
I

K

L

M

N

| | | | |
|--|--|---|--|
|  | <p>PCI 017 ...</p>  | <p>PCI 018 ...</p>  | <p>PCI 016 L</p>  |
|  | <p>KHPC 243 O</p>  | <p>KHPC 070 O</p>  | <p>KHPC 027 O</p>  |
| <p>KHPC 054 O</p>  | <p>KHPC 028 O</p>  | <p>KHPC 026 ...</p>  | <p>KHPC 052 L</p>  |

K 17

If you do not find a suitable bracket,
please use the PCI / KHPC design sheet
at the end of section "K".

| | | | |
|--|--------------------------|--------------------------|---------------------------|
| | <p>PCI 072 O</p> | | |
| | <p>KHPC 262 O</p> | <p>KHPC 043 O</p> | |
| | <p>PCI 076 O</p> | <p>PCI 035 L</p> | <p>PCI 077 ...</p> |

please indicate:

... fixing strap

- O = without fixing strap
- L = with fixing straps

A

Brackets for PC

B

C

D

E

F

G

H

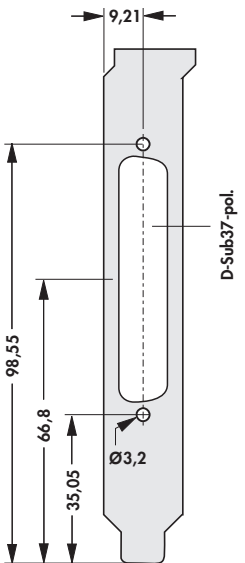
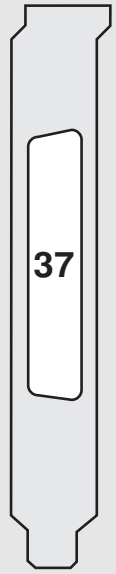
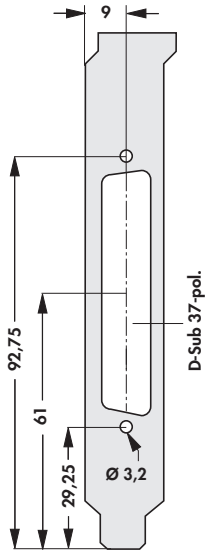
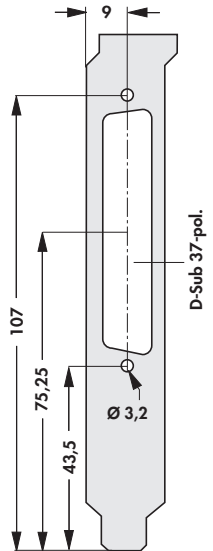
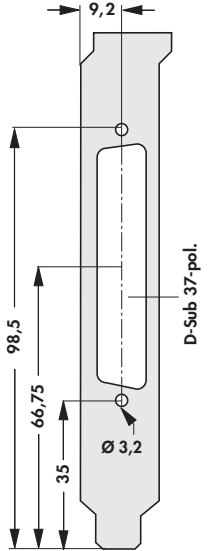
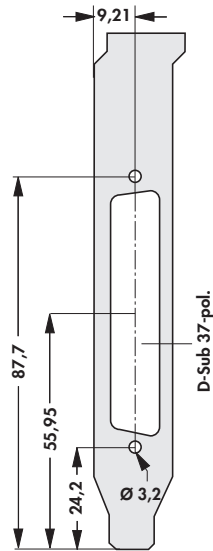
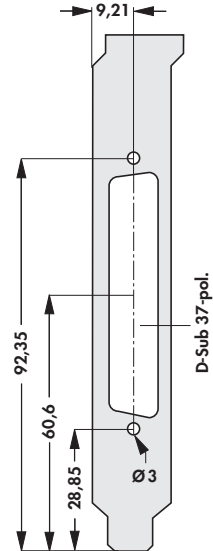
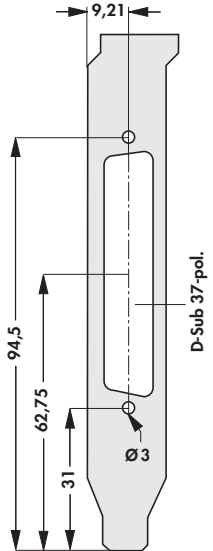
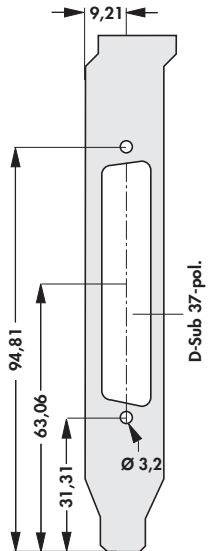
I

K

L

M

N

| | | | |
|--|--|---|--|
| <p>PCI 020 ...</p>  | | | |
|  | <p>KHPC 058 O</p>  | <p>KHPC 035 O</p>  | <p>KHPC 277 O</p>  |
| <p>KHPC 267 O</p>  | <p>KHPC 033 O</p>  | <p>KHPC 270 O</p>  | <p>KHPC 271 O</p>  |

K 19

If you do not find a suitable bracket,
please use the PCI / KHPC design sheet
at the end of section "K".

| | | | |
|---|---|---|---|
| <p>KHPC 034 O</p> <p>D-Sub 37-pol.</p> | <p>KHPC 031 O</p> <p>D-Sub 37-pol.</p> | <p>KHPC 032 O</p> <p>D-Sub 37-pol.</p> | |
| <p>37</p> | <p>KHPC 029 O</p> <p>D-Sub 37-pol.</p> | <p>KHPC 295 O</p> <p>D-Sub 37-pol.</p> | |
| <p>50</p> | <p>KHPC 036 ...</p> <p>D-Sub 50-pol.</p> | <p>KHPC 051 O</p> <p>D-Sub 50-pol.</p> | <p>KHPC 308 L</p> <p>D-Sub 50-pol.</p> |

please indicate:

... fixing strap

O = without fixing strap

L = with fixing straps

A

Brackets for PC

B

C

D

E

F

G

H

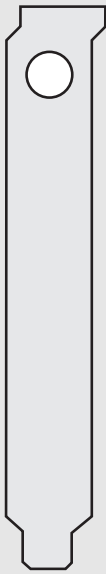
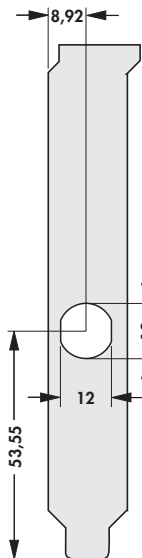

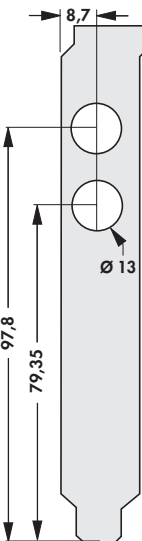
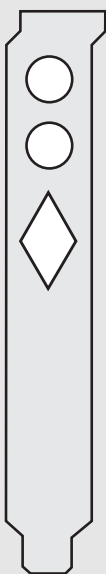
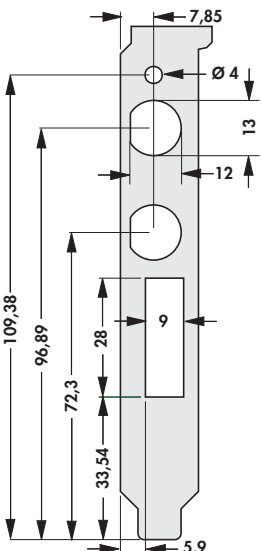
I

K

L


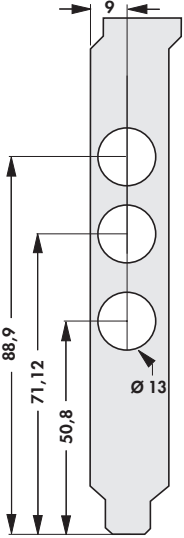

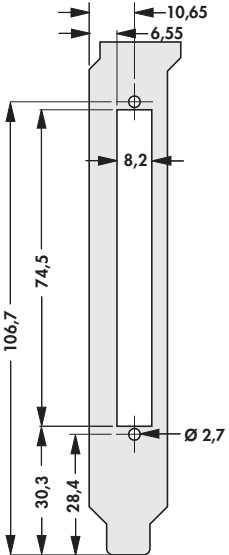

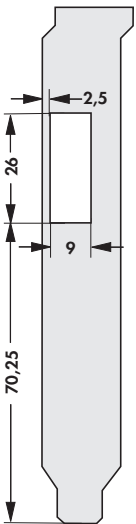
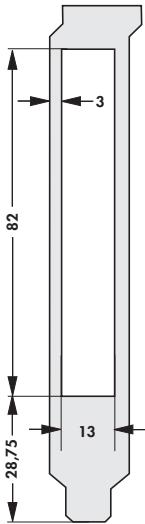
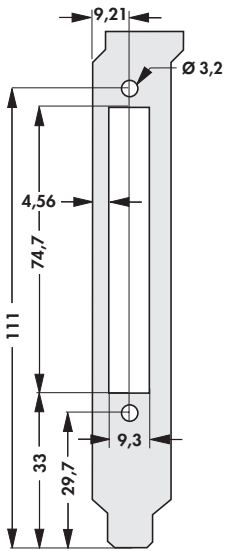
M

N

| | | | |
|---|---|--|--|
|  | <p>PCI 021 O</p>  | | |
|  | <p>KHPC 325 O</p>  | | |
|  | <p>PCI 083 L</p>  | | |

K 21

If you do not find a suitable bracket,
please use the PCI / KHPC design sheet
at the end of section "K".

| | | | |
|---|--|---|--|
|  | <p>KHPC 335 L</p>  | | |
|  | <p>PCI 104 O</p>  | | |
|  | <p>KHPC 365 L</p>  | <p>KHPC 085 L</p>  | <p>KHPC 391 O</p>  |

please indicate:

... fixing strap

- O = without fixing strap
- L = with fixing straps

A

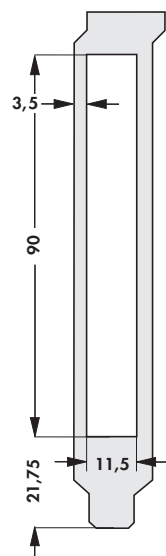
Brackets for PC

B

C

D

E

KHPC 398 O


F

G

H

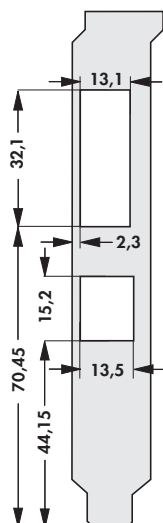
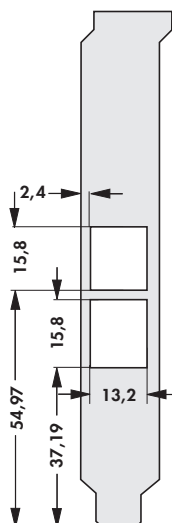
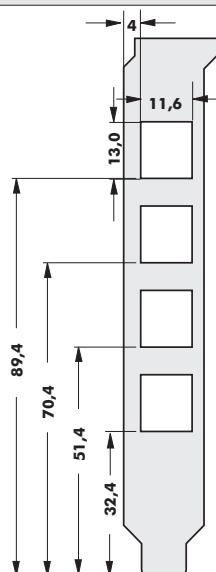
I

K

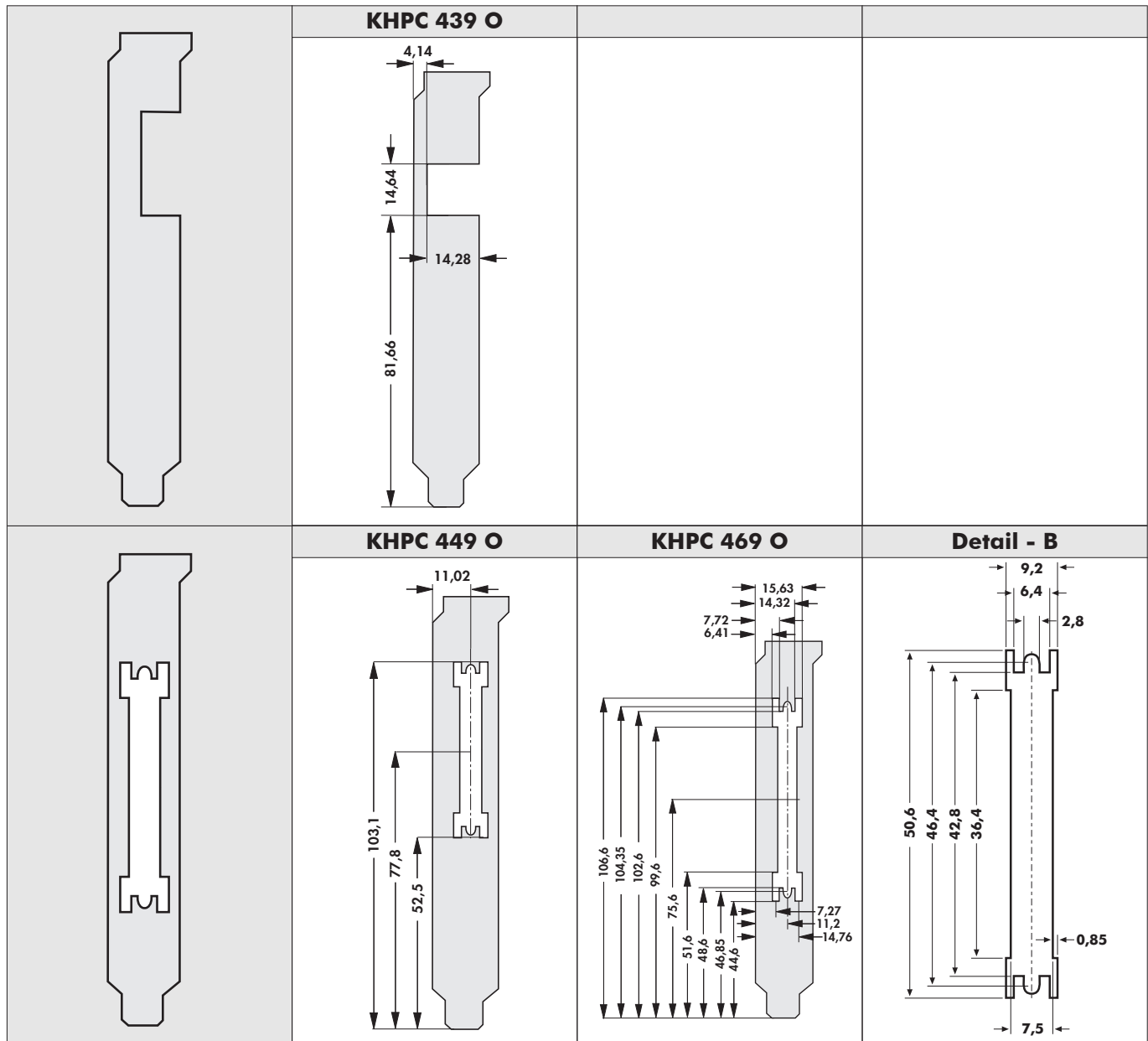
L

M

N

KHPC 404 L

KHPC 407 L

PCI 051 ...

K 23

If you do not find a suitable bracket,
please use the PCI / KHPC design sheet
at the end of section "K".



please indicate:

... fixing strap

- O = without fixing strap
- L = with fixing straps

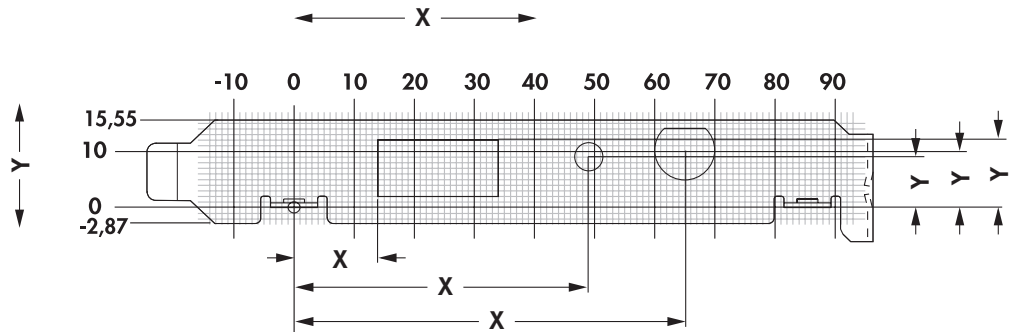
User information für PCI and KHPC-Design
PCI- and KHPC-DESIGN

The cutouts shown on the Design sheet should be positioned on the pictured grid.

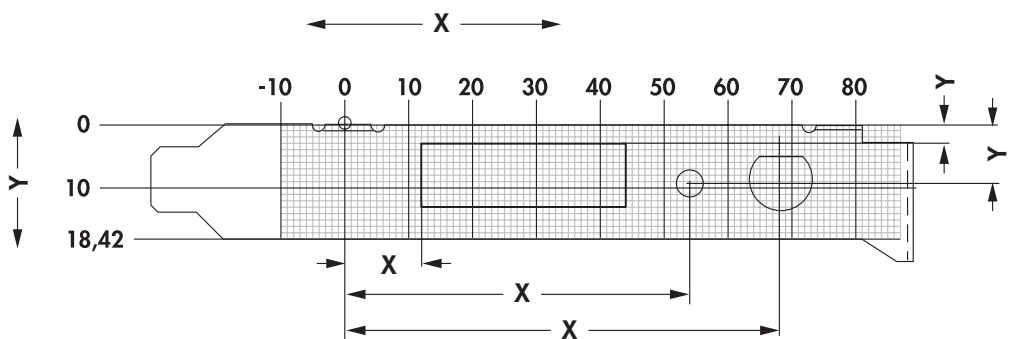
The zero point of the respective cutout is to be placed on the grid point of the PC card bracket, whereby the X/Y coordinates should be entered in the table as absolute dimensions. Positioning of the cutouts can be specified with an accuracy of max. 0,01 mm. The grid specifies the max. area of the cutout including the component. Please mark whether the version is with or without bent fixing tabs.

Other contours, dimensions and cutouts are possible, to the extent that they are technically possible to produce.

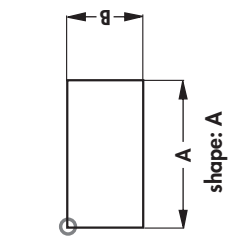
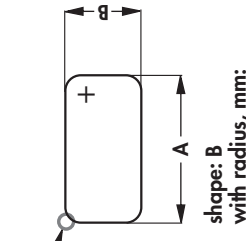
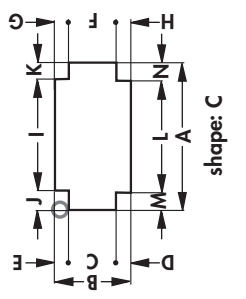
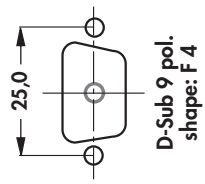
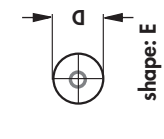
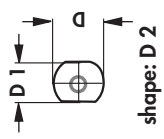
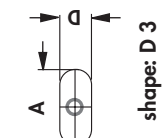
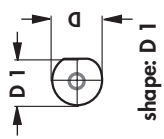
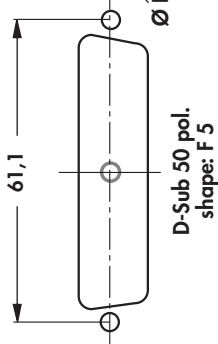
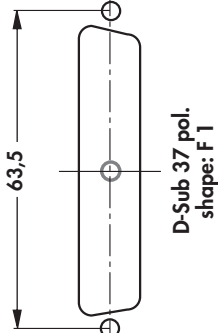
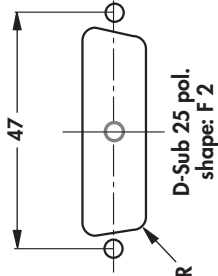
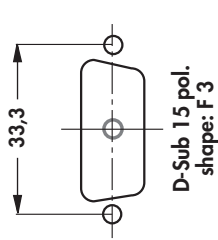
Please contact us with regard to this.

Example
PCI


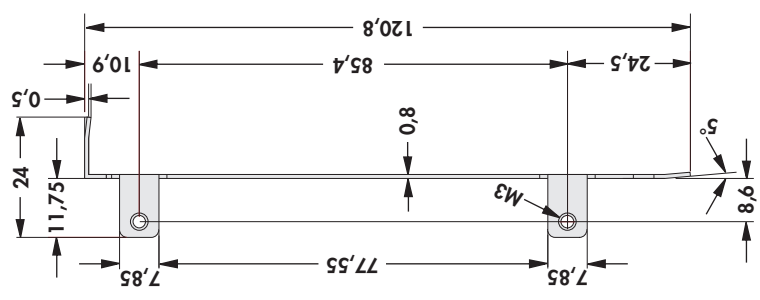
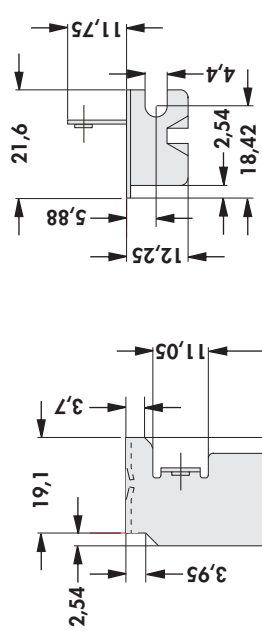
| Shape | X-dimension | Y-dimension |
|-------------------|-------------|-------------|
| A A = 20 B = 10 | 14 | 12 |
| E D = 5 | 49 | 9 |
| D1 D = 12 D1 = 11 | 65 | 10 |

KHPC


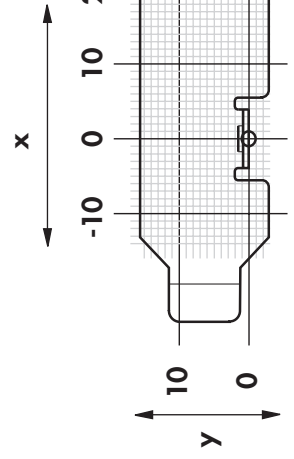
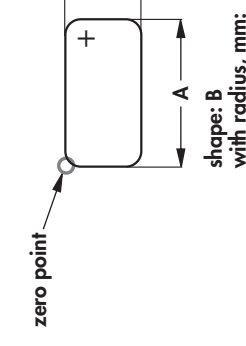
| Shape | X-dimension | Y-dimension |
|---------------------|-------------|-------------|
| A A = 33 B = 10 | 12 | 3 |
| E D = 5 | 54 | 9 |
| D1 D = 9,5 D1 = 8,7 | 68 | 9 |



radius F 1 ... 4
build in mode:
 3,4 mm rear
 2,1 mm front



- with fixing strap
- without fixing strap



| shape | X-dim. | Y-dim. | A | B | C | D | D 1 | E | F | G | H | I | J | K | L | M | N |
|-------|--------|--------|---|---|---|---|-----|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

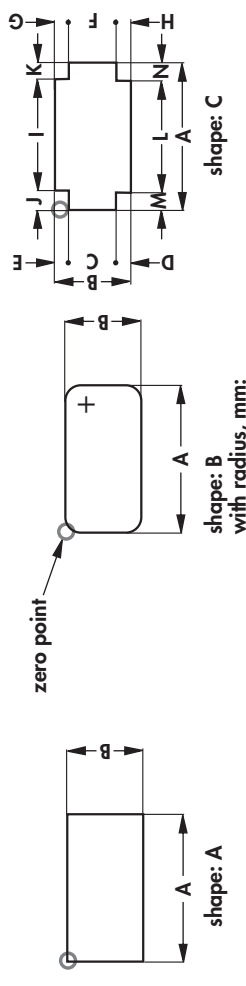
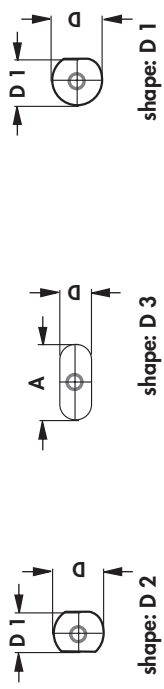
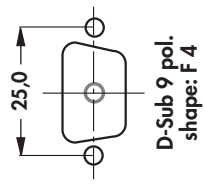
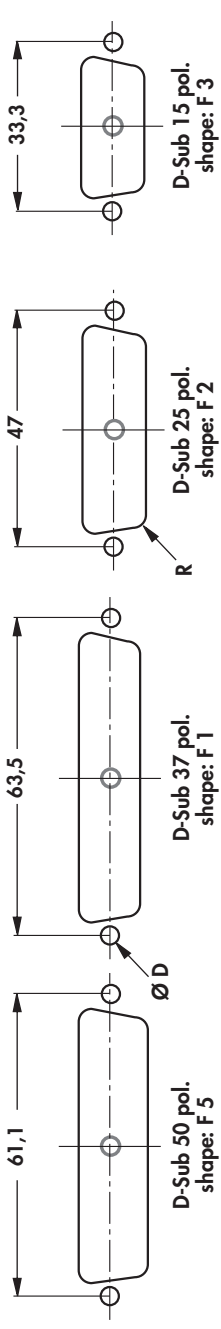
PCI DESIGN



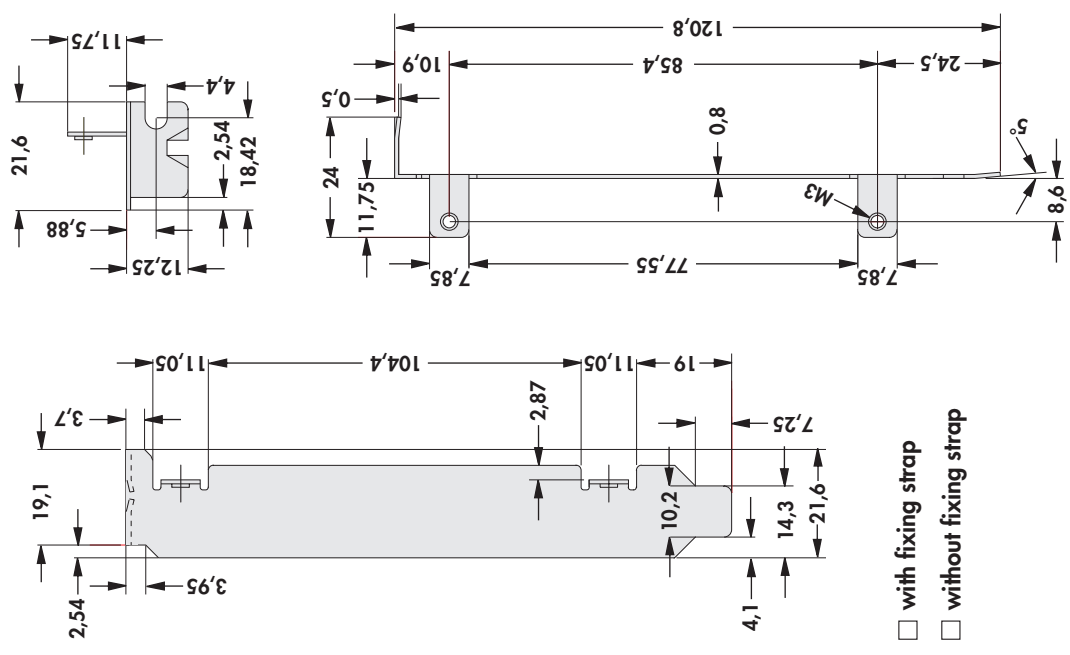
company name:

part name:

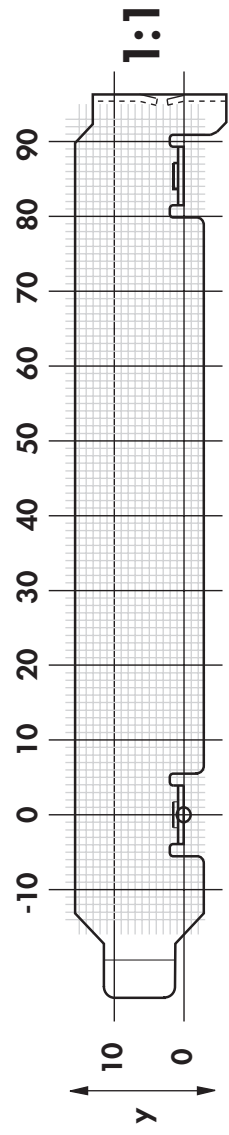
drawing number:



radius F 1 ... 4
 build in mode:
 3,4 mm rear
 2,1 mm front



- with fixing strap
- without fixing strap



| shape | X-dim. | Y-dim. | A | B | C | D | D 1 | E | F | G | H | I | J | K | L | M | N |
|-------|--------|--------|---|---|---|---|-----|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

PCI DESIGN



company name:

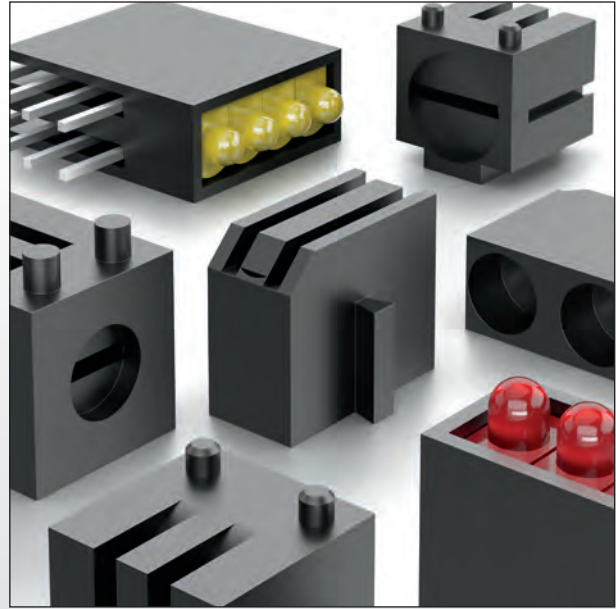
part name:

drawing number:



Mounting material

- spacers for standard LEDs
- class of flammability acc. to UL 94 V-0



LED fastener for horizontal PCB mounting

- single and double fasteners for a standard diameter of 3 and 5 mm
- equipped multi-fastener
- single fasteners and fasteners connectable in series



Fibre-optics for SMD-LED components

- horizontal, fixed fibre-optics with round or rectangular lense made of transparent plastics - also for gauge displays
- vertical, fixed fibre-optics with round or rectangular lense made of transparent plastics


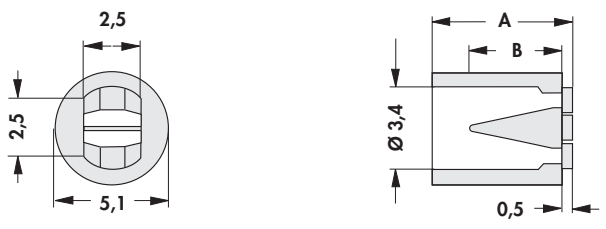



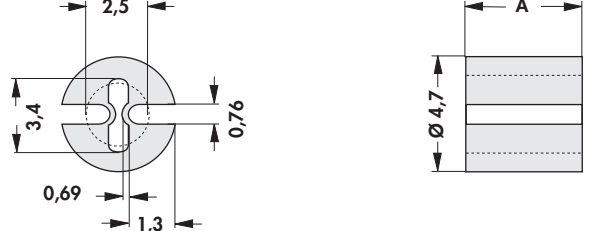
LED fastener for front panel mounting

- clipable fastener for 5 mm LEDs
- fastener for 3 and 5 mm LED with clamping ring

Spacers for LED

– universal mount for LED Ø 3 mm and 5 mm, self retaining


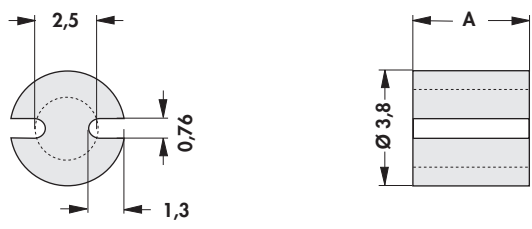
|  |  | | | | |
|---|--|-----------------------------|----------|--------|----------------|
| art. no. | B [mm] | dim. [mm] A | art. no. | B [mm] | dim. [mm] A |
| MAH 31 | 1.5 | 3.1 | MAH 71 | 4.7 | 7.1 |
| MAH 41 | | 4.1 | MAH 81 | | 8.1 |
| MAH 51 | | 5.1 | MAH 89 | | 8.9 |
| MAH 61 | | 6.1 | MAH 99 | | 9.9 |
| insulating body material: | | MPPS, black | | | |
| temperature range: | | -40°C...+240°C/ (260°C/5 s) | | | |
| class of inflammability: | | UL 94 V-0 | | | |

|  |  | | | |
|--|---|------------------|----------------|--|
| art. no. | dim. [mm] A | art. no. | dim. [mm] A | |
| MAH 401 | 1 | MAH 406 | 6 | |
| MAH 402 | 2 | MAH 407 | 7 | |
| MAH 403 | 3 | MAH 408 | 8 | |
| MAH 404 | 4 | MAH 409 | 9 | |
| MAH 405 | 5 | MAH 410 | 10 | |
| insulating body material: | | PVC Blend, black | | |
| temperature range: | | -40°C... +85°C | | |
| class of inflammability: | | UL 94 V-0 | | |


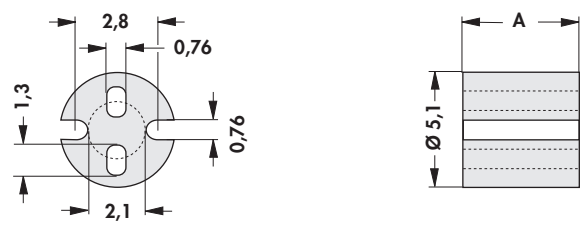
A

Spacers for LED

 – for LED \varnothing 3 mm, thin mount

|  |  | | | | |
|---|--|------------------|-----------|----------------|-----------|
| art. no. | dim. [mm] | art. no. | dim. [mm] | art. no. | dim. [mm] |
| | A | | A | | A |
| MAH 301 | 1 | MAH 305 | 5 | MAH 308 | 8 |
| MAH 302 | 2 | MAH 306 | 6 | MAH 309 | 9 |
| MAH 303 | 3 | MAH 307 | 7 | MAH 310 | 10 |
| MAH 304 | 4 | | | | |
| insulating body material: | | PVC Blend, black | | | |
| temperature range: | | -40°C... +85°C | | | |
| class of inflammability: | | UL 94 V-0 | | | |

 – for LED \varnothing 5 mm, self-retaining

|  |  | | | | |
|--|---|------------------|-----------|----------------|-----------|
| art. no. | dim. [mm] | art. no. | dim. [mm] | art. no. | dim. [mm] |
| | A | | A | | A |
| MAH 501 | 1 | MAH 505 | 5 | MAH 508 | 8 |
| MAH 502 | 2 | MAH 506 | 6 | MAH 509 | 9 |
| MAH 503 | 3 | MAH 507 | 7 | MAH 510 | 10 |
| MAH 504 | 4 | | | | |
| insulating body material: | | PVC Blend, black | | | |
| temperature range: | | -40°C... +85°C | | | |
| class of inflammability: | | UL 94 V-0 | | | |

F

G

H

I

K

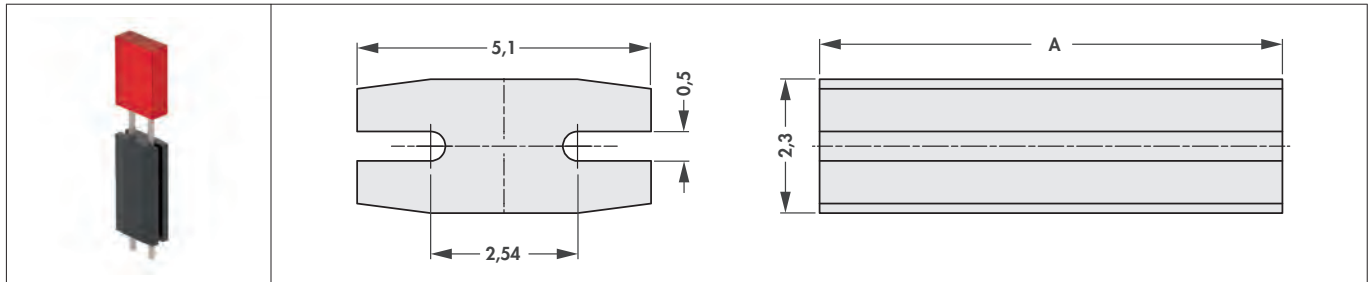
L

M

N

Spacers for LED

– for rectangular LED



| art. no. | dim. [mm] | art. no. | dim. [mm] | art. no. | dim. [mm] |
|----------------------------------|------------------|----------------|-----------|----------------|-----------|
| | A | | A | | A |
| RAH 503 | 3 | RAH 506 | 6 | RAH 509 | 9 |
| RAH 504 | 4 | RAH 507 | 7 | RAH 510 | 10 |
| RAH 505 | 5 | RAH 508 | 8 | | |
| insulating body material: | PVC Blend, black | | | | |
| temperature range: | -40°C... +85°C | | | | |
| class of inflammability: | UL 94 V-0 | | | | |

A

B

C

D

E

F

G

H

I

K


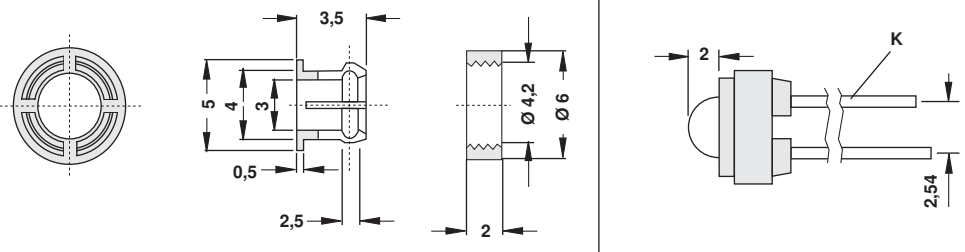
L

M


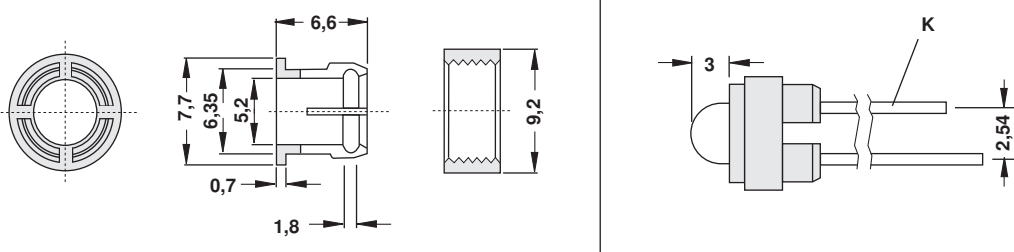
N

LED-holders


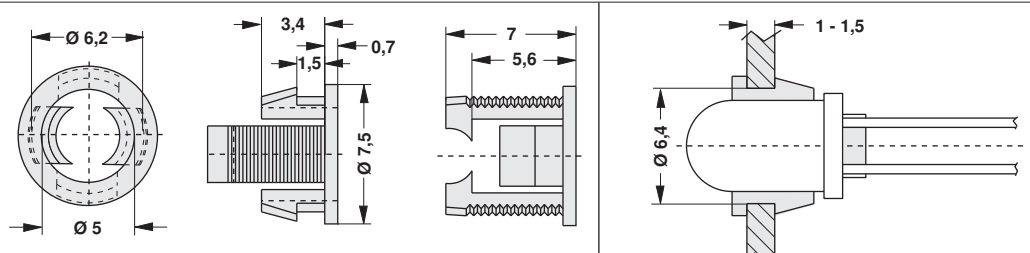
- suitable for 3 mm diodes with a collar height of 0.6 mm
- **K** = cathode

| | |
|---|--|
|  |  |
| art. no. DH 3 V | type for LED Ø3mm |
| insulating body material: | PA, GF |

- suitable for 5 mm diodes with a collar height of 0.6 mm/1 mm
- **K** = cathode

| | |
|---|--|
|  |  |
| art. no. DH 5 VC | type for LED Ø5mm |
| insulating body material: | PA, GF |


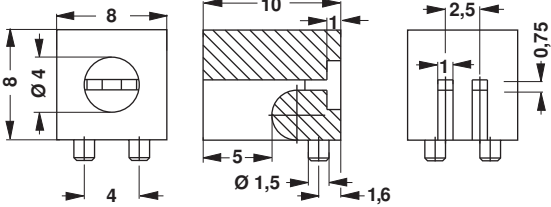
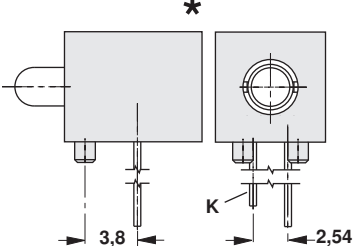

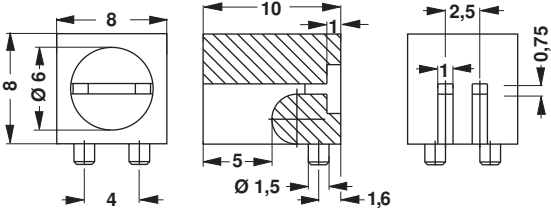
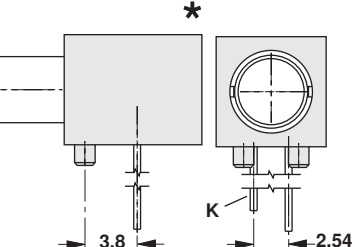

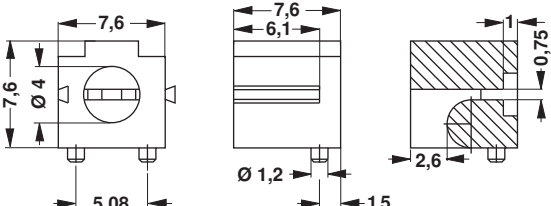
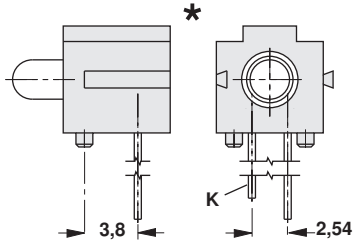

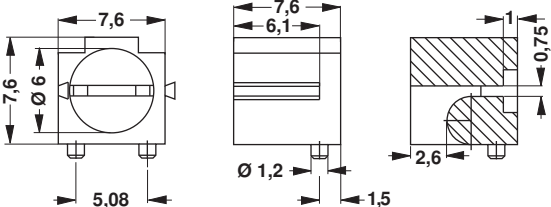
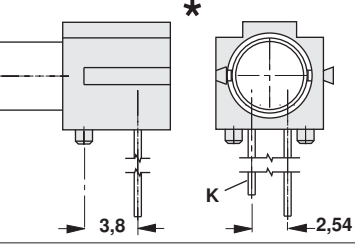
- suitable for 5 mm diodes with a collar height of 0.6 mm/1 mm
- **K** = cathode

| | |
|---|--|
|  |  |
| art. no. DH 5 SRC | type for LED Ø5mm |
| insulating body material: | PA, GF |

LED-holders

LED-holder for LED Ø 3 mm and 5 mm

- K = cathode / * = presentation with diode

| | | |
|---|---|---|
|  |  |  |
| <p>art. no. DH 3 W</p> | <p>type for LED Ø3mm</p> | |
|  |  |  |
| <p>art. no. DH 5 W</p> | <p>type for LED Ø5mm</p> | |
|  |  |  |
| <p>art. no. DH 3 R</p> | <p>type for LED Ø3mm</p> | |
|  |  |  |
| <p>art. no. DH 5 R</p> | <p>type for LED Ø5mm</p> | |
| <p>insulating body material:</p> | <p>PA 4.6. GF</p> | |
| <p>temperature range:</p> | <p>-40°C... +163°C/ (260°C/10 s)</p> | |
| <p>class of inflammability:</p> | <p>UL 94 V-0</p> | |

A
B
C
D
E
F
G
H
I
K
L
M
N

A

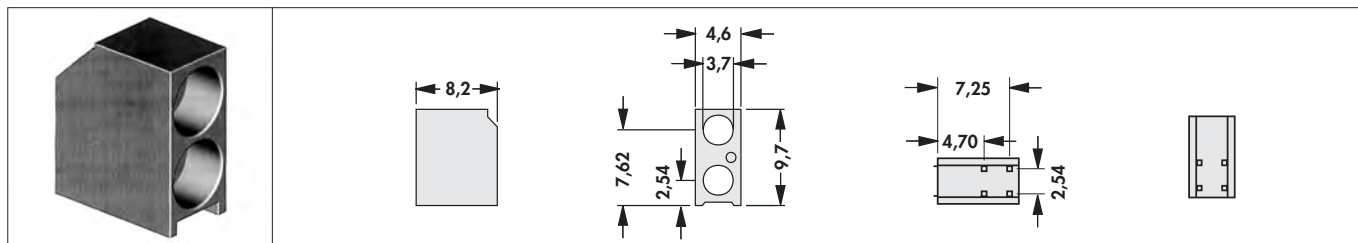
LED-holders

B

LED-holder for LED Ø 3 mm

– stackable LED-holders: single holder/can be strung, left/can be strung, middle/can be strung, right

C

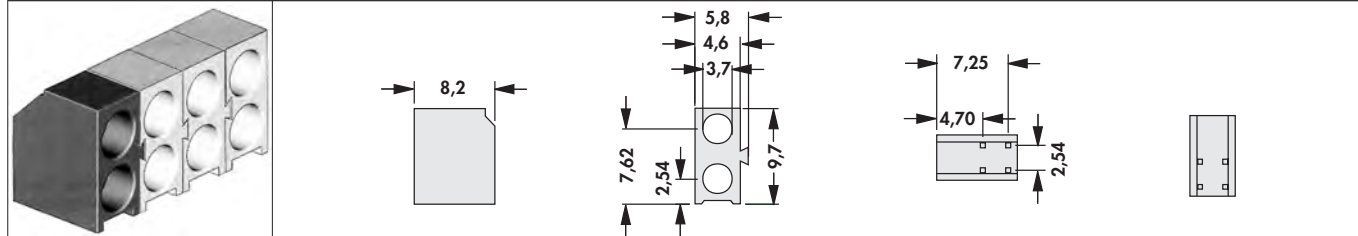

art. no.

type

DDH 3 E

for LED Ø3mm

D


art. no.

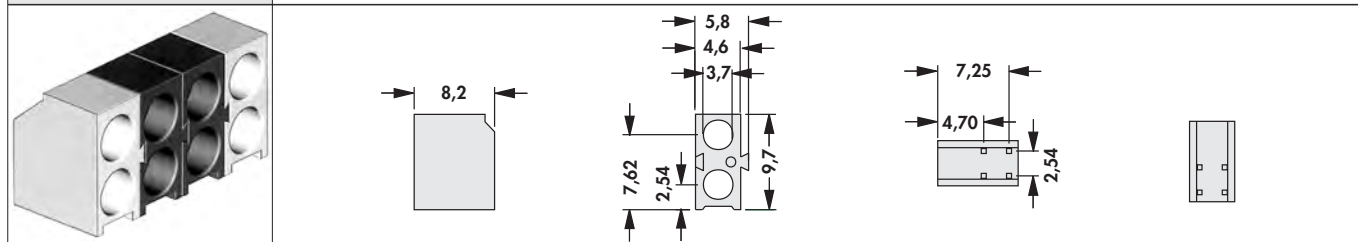
type

DDH 3 L

for LED Ø3mm, can be strung left

E

F


art. no.

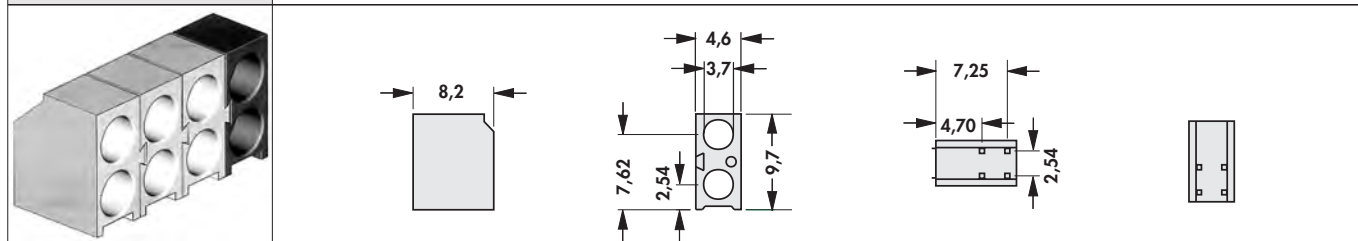
type

DDH 3 M

for LED Ø3mm, can be strung middle

G

H


art. no.

type

DDH 3 R

for LED Ø3mm, can be strung right

I

K

| | |
|----------------------------------|----------------|
| insulating body material: | PA 6/6, GF |
| temperature range: | -20°C... +85°C |
| class of inflammability: | UL 94 V-0 |

L

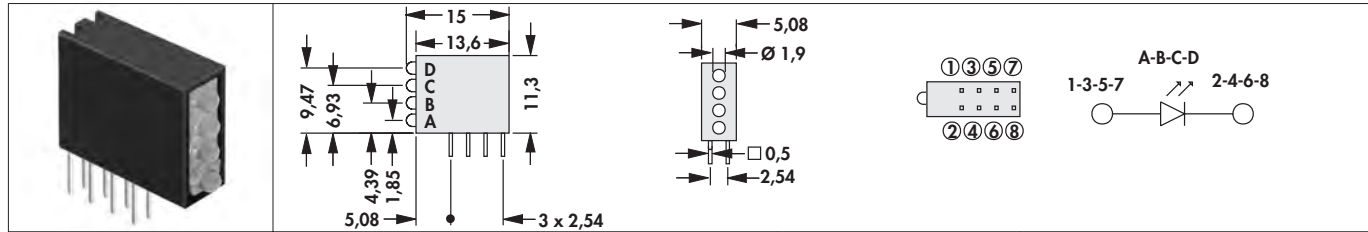
M

N

LED-holders

Fourfold-LED-holders

- standard case, standard colours, diffuse lens, space-saving design, round lens, rectangular lens
- typical data at $T_{amb}=25^{\circ}C$ und $I_F=I_{Ftype}$, 100% DC


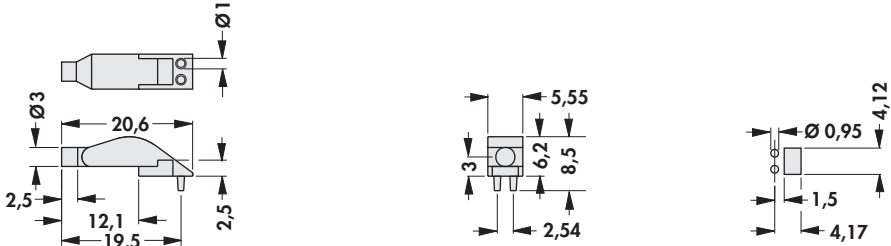

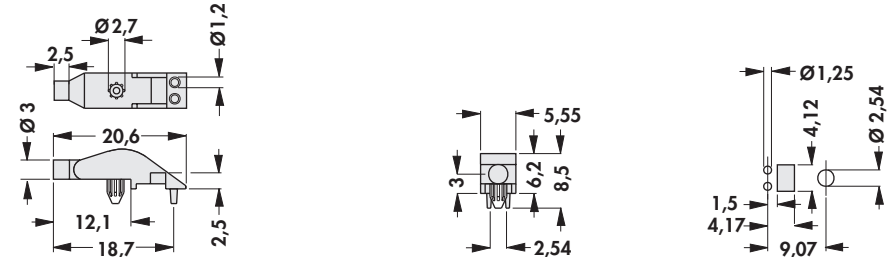

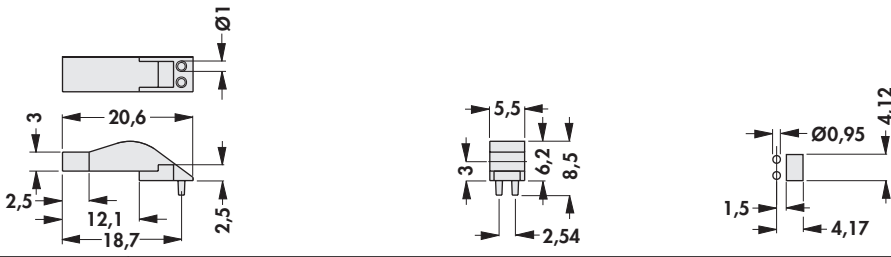

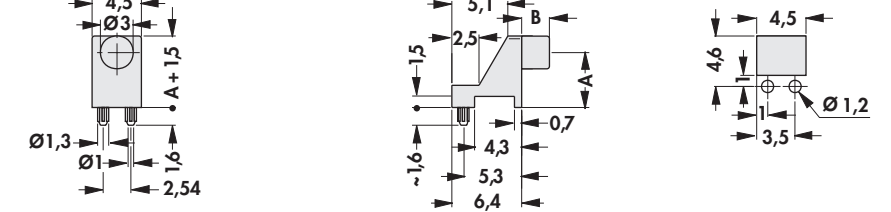


| art. no. | type | emission colour | Spannungen $U_{f_{typ}} / U_{r_{max}}$ [V] | wavelength λ_{max} [nm] |
|-------------|--|-----------------|--|---------------------------------|
| DLH 21 AYEH | with LED $\varnothing 2mm$, four-fold | yellow | 2.1 / 2.6 | 585 |
| DLH 21 AGEH | | green | 2.2 / 2.6 | 565 |

| | |
|--|--|
| for cases: | in terms of colour diffuse |
| insulating body material: | Nylon, black |
| temperature range: | -20°C... +85°C |
| class of inflammability: | UL 94 V-0 |
| beam angle 2ϕ: | 80 ° |
| design: | 2mm round |
| derating: | from $T_{amb} < 20^{\circ}C$, operating current reduced by 0.4 mA/K . |
| light intensity I: | 12 mcd |
| flows I_{Ftyp} / I_{Fmax}: | 20/30 mA |


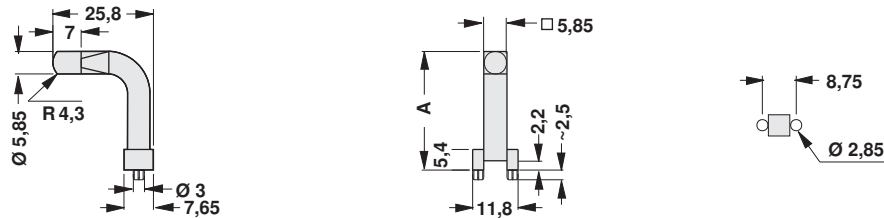
Light pipes for SMDs

- suitable for current SMD types
- 3 mm light pipes
- horizontal
- ESD-protection from panel to PCB


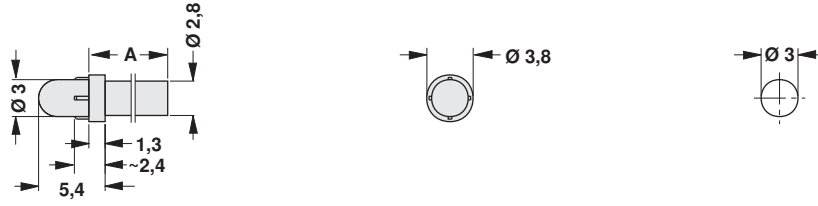

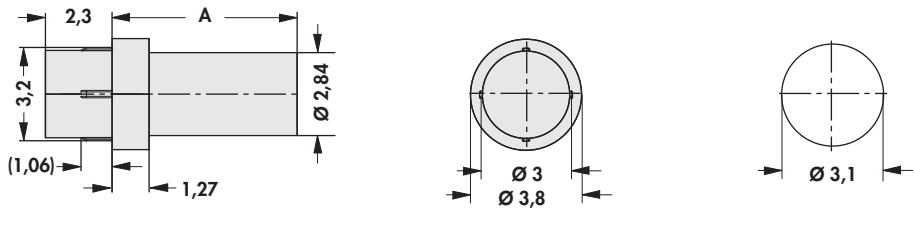
|  |  | | | | | | | | | | |
|---|--|--|-----------|--|---|---|-----|-----|-----|-----|------|
| art. no. LL 30 HRS | diameter of lens Ø3mm | way of fixation by alignment pins | | | | | | | | | |
|  |  | | | | | | | | | | |
| art. no. LL 30 HRP | diameter of lens Ø3mm | way of fixation by press-in pins | | | | | | | | | |
|  |  | | | | | | | | | | |
| art. no. LL 35 HVS | diameter of lens □ 5.5x3mm | way of fixation by alignment pins | | | | | | | | | |
|  |  | | | | | | | | | | |
| art. no. LL 30 WRFP 038 LL 30 WRFP 050 LL 30 WRFP 076 LL 30 WRFP 102 | diameter of lens Ø3mm | way of fixation by press-in pins <table border="1" data-bbox="933 1586 1226 1797"> <thead> <tr> <th colspan="2">dim. [mm]</th> </tr> <tr> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>3.8</td> <td rowspan="4">2.5</td> </tr> <tr> <td>5.0</td> </tr> <tr> <td>7.6</td> </tr> <tr> <td>10.2</td> </tr> </tbody> </table> | dim. [mm] | | A | B | 3.8 | 2.5 | 5.0 | 7.6 | 10.2 |
| dim. [mm] | | | | | | | | | | | |
| A | B | | | | | | | | | | |
| 3.8 | 2.5 | | | | | | | | | | |
| 5.0 | | | | | | | | | | | |
| 7.6 | | | | | | | | | | | |
| 10.2 | | | | | | | | | | | |
| insulating body material: Polycarbonate, clear | | | | | | | | | | | |
| temperature range: -30°C... +100°C | | | | | | | | | | | |
| class of inflammability: UL 94 V-0 | | | | | | | | | | | |

Light pipes for SMDs

– panel light pipe, 6 mm lens, suitable for common SMD LEDs, white lens, large angle of radiation

| | | | |
|---|--|------------------|----------------|
|  |  | | |
| art. no. | diameter of lense | way of fixation | dim. [mm] A |
| LL 60 WRB 254 | Ø6mm | by press-in pins | 25.4 |
| insulating body material: | Polycarbonate, clear | | |
| temperature range: | -30°C... +100°C | | |
| class of inflammability: | UL 94 V-0 | | |

– panel light pipe 3 mm, ESD protection from panel to PCB

| | | | | | |
|---|--|--|----------------------|-------------------|----------------|
|  |  | | | | |
| art. no. | diameter of lense | dim. [mm] A | art. no. | diameter of lense | dim. [mm] A |
| LL 30 PRB 025 | Ø3mm | 2.5 | LL 30 PRB 080 | Ø3mm | 8.0 |
| LL 30 PRB 032 | | 3.2 | LL 30 PRB 089 | | 8.9 |
| LL 30 PRB 040 | | 4.0 | LL 30 PRB 095 | | 9.5 |
| LL 30 PRB 051 | | 5.1 | LL 30 PRB 117 | | 11.7 |
| LL 30 PRB 060 | | 6.0 | LL 30 PRB 127 | | 12.7 |
| LL 30 PRB 064 | | 6.4 | LL 30 PRB 159 | | 15.9 |
| LL 30 PRB 070 | | 7.0 | LL 30 PRB 190 | | 19.0 |
|  | |  | | | |
| art. no. | diameter of lense | dim. [mm] A | art. no. | diameter of lense | dim. [mm] A |
| LL 30 PRF 025 | Ø3mm | 2.5 | LL 30 PRF 070 | Ø3mm | 7.0 |
| LL 30 PRF 032 | | 3.2 | LL 30 PRF 080 | | 8.0 |
| LL 30 PRF 040 | | 4.0 | LL 30 PRF 089 | | 8.9 |
| LL 30 PRF 048 | | 4.8 | LL 30 PRF 100 | | 10.0 |
| LL 30 PRF 050 | | 5.0 | LL 30 PRF 159 | | 15.9 |
| LL 30 PRF 060 | | 6.0 | LL 30 PRF 211 | | 21.1 |
| LL 30 PRF 064 | | 6.4 | | | |
| insulating body material: | Polycarbonate, clear | | | | |
| temperature range: | -30°C... +100°C | | | | |
| class of inflammability: | UL 94 V-0 | | | | |

A

Light pipes for SMDs


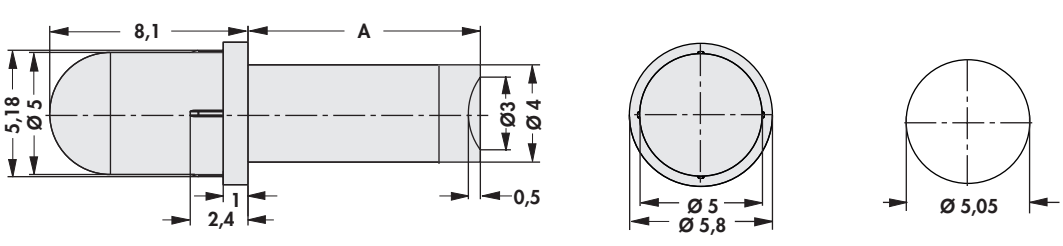
– panel light pipe 5 mm, ESD protection from panel to PCB

B

C

D

E

|  |  | | | | |
|---|--|----------------------|----------------------|-------------------|----------------|
| art. no. | diameter of lense | dim. [mm] A | art. no. | diameter of lense | dim. [mm] A |
| LL 50 PRB 032 | Ø5mm | 3.2 | LL 50 PRB 190 | Ø5mm | 19.0 |
| LL 50 PRB 095 | | 9.5 | LL 50 PRB 254 | | 25.4 |
| LL 50 PRB 127 | | 12.7 | LL 50 PRB 318 | | 31.8 |
| insulating body material: | | Polycarbonate, clear | | | |
| temperature range: | | -30°C... +100°C | | | |
| class of inflammability: | | UL 94 V-0 | | | |
| Lichtleitermaterial: | | polycarbonate, clear | | | |

panel light pipe 3 mm, ESD protection from panel to PCB, lentil type "clear" if not specified

F

G

H


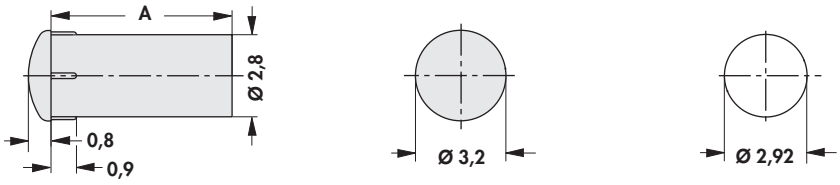
I

K

L


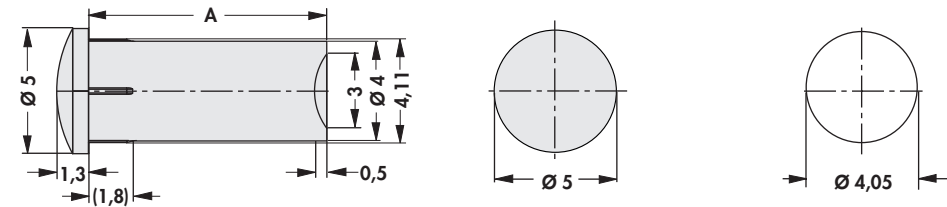
M

N


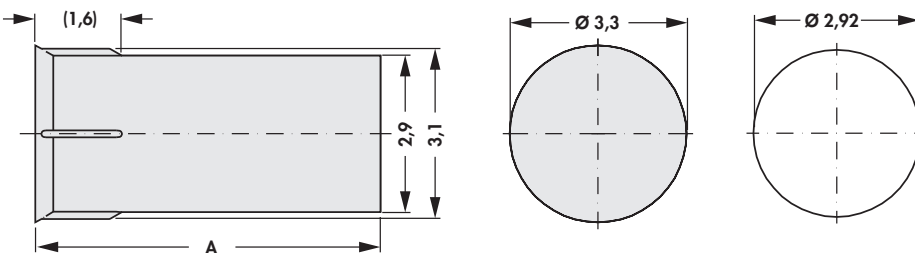
|  |  | | | | |
|--|---|--|----------------------|-------------------|----------------|
| art. no. | diameter of lense | dim. [mm] A | art. no. | diameter of lense | dim. [mm] A |
| LL 30 PRL 025 ... | Ø3mm | 2.5 | LL 30 PRL 064 | Ø3mm | 6.4 |
| LL 30 PRL 030 | | 3.0 | LL 30 PRL 070 | | 7.0 |
| LL 30 PRL 030 D | | | LL 30 PRL 080 | | 8.0 |
| LL 30 PRL 032 ... | | 3.2 | LL 30 PRL 089 | | 8.9 |
| LL 30 PRL 040 | | 4.0 | LL 30 PRL 100 | | 10.0 |
| LL 30 PRL 048 | | 4.8 | LL 30 PRL 127 | | 12.7 |
| LL 30 PRL 050 | | 5.0 | LL 30 PRL 159 | | 15.9 |
| LL 30 PRL 055 | | 5.5 | LL 30 PRL 190 | | 19.0 |
| LL 30 PRL 060 | | 6.0 | | | |
| please indicate: | | ... Lentil type (optional) D = diffuse S = shaded | | | |
| insulating body material: | | Polycarbonate, clear | | | |
| temperature range: | | -30°C... +100°C | | | |
| class of inflammability: | | UL 94 V-0 | | | |

Light pipes for SMDs


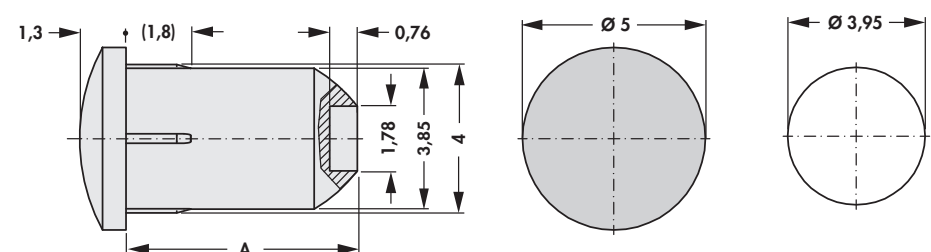
– panel light pipe 5 mm, ESD protection from panel to PCB

|  |  | | | | |
|---|--|----------------------|----------------------|------------------|----------------|
| art. no. | diameter of lens | dim. [mm] A | art. no. | diameter of lens | dim. [mm] A |
| LL 50 PRL 089 | Ø5mm | 8.9 | LL 50 PRL 190 | Ø5mm | 19.0 |
| LL 50 PRL 095 | | 9.5 | LL 50 PRL 254 | | 25.4 |
| LL 50 PRL 159 | | 15.9 | LL 50 PRL 318 | | 31.8 |
| insulating body material: | | Polycarbonate, clear | | | |
| temperature range: | | -30°C... +100°C | | | |
| class of inflammability: | | UL 94 V-0 | | | |

panel light pipe 5 mm, ESD protection from panel to PCB

|  |  | | | | |
|--|---|----------------------|----------------------|------------------|----------------|
| art. no. | diameter of lens | dim. [mm] A | art. no. | diameter of lens | dim. [mm] A |
| LL 30 PRE 032 | Ø3mm | 3.2 | LL 30 PRE 095 | Ø3mm | 9.5 |
| LL 30 PRE 064 | | 6.4 | LL 30 PRE 127 | | 12.7 |
| insulating body material: | | Polycarbonate, clear | | | |
| temperature range: | | -30°C... +100°C | | | |
| class of inflammability: | | UL 94 V-0 | | | |


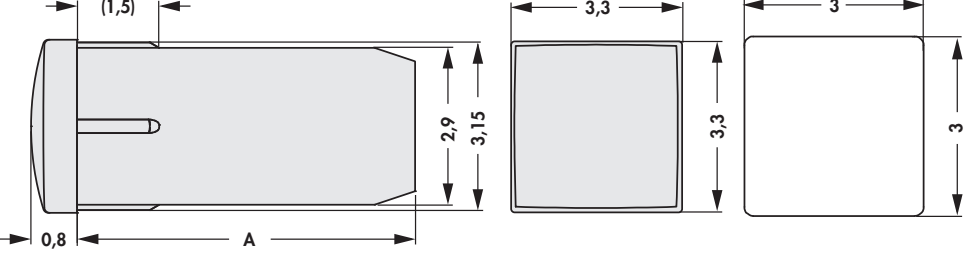
– panel light pipe 5 mm, ESD protection from panel to PCB

|  |  | | | | |
|---|--|----------------------|----------------------|------------------|----------------|
| art. no. | diameter of lens | dim. [mm] A | art. no. | diameter of lens | dim. [mm] A |
| LL 50 PRK 032 | Ø5mm | 3.2 | LL 50 PRK 095 | Ø5mm | 9.5 |
| LL 50 PRK 064 | | 6.4 | LL 50 PRK 127 | | 12.7 |
| insulating body material: | | Polycarbonate, clear | | | |
| temperature range: | | -30°C... +100°C | | | |
| class of inflammability: | | UL 94 V-0 | | | |


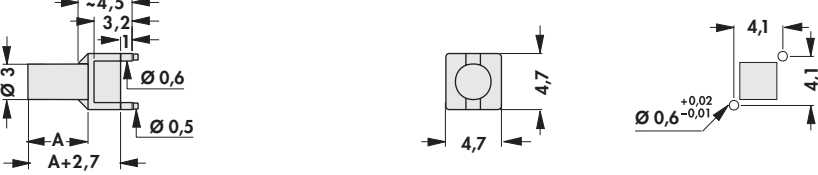
A

Light pipes for SMDs

– panel light pipe Rechteck 3,3 mm, ESD protection from panel to PCB

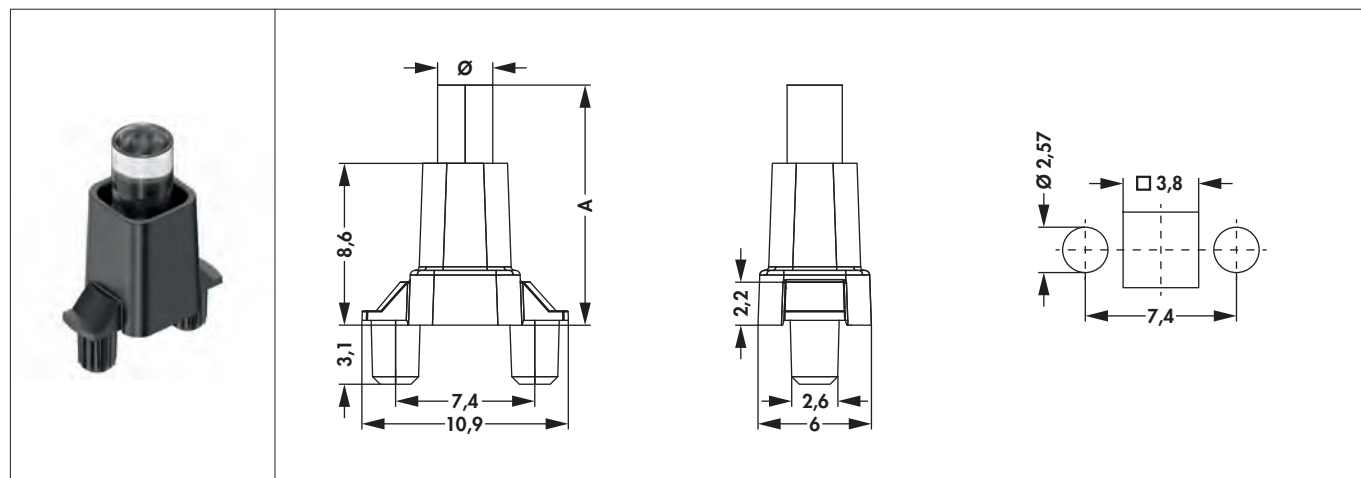
| | | | | | |
|---|--|----------------------|----------------------|------------------|-----------|
|  |  | | | | |
| art. no. | diameter of lens | dim. [mm] | art. no. | diameter of lens | dim. [mm] |
| LL 30 QRL 032 | □ 3,3mm | A | LL 30 QRL 095 | □ 3,3mm | A |
| LL 30 QRL 064 | | 3.2 | LL 30 QRL 127 | | 9.5 |
| LL 30 QRL 064 | | 6.4 | | | 12.7 |
| insulating body material: | | Polycarbonate, clear | | | |
| temperature range: | | -30°C... +100°C | | | |
| class of inflammability: | | UL 94 V-0 | | | |

– suitable for current SMD LEDs, vertical, rigid light pipe Ø 3 mm, ESD protection from panel to PCB

| | | | | | |
|--|---|-------------------|-----------|--|--|
|  |  | | | | |
| art. no. | diameter of lens | way of fixation | dim. [mm] | | |
| LL 30 VRFS 024 | Ø3mm | by alignment pins | A | | |
| LL 30 VRFS 050 | | | 2.4 | | |
| LL 30 VRFS 075 | | | 5.0 | | |
| insulating body material: | Polycarbonate, clear | | | | |
| temperature range: | -30°C... +100°C | | | | |
| class of inflammability: | UL 94 V-0 | | | | |

Light pipes for SMDs

– panel light pipe, suitable for common SMD LEDs, white lens, large angle of radiation



| art. no. | diameter of lens | dim. [mm] A | art. no. | diameter of lens | dim. [mm] A |
|-----------------|------------------|----------------|-----------------|------------------|----------------|
| LL V 20 089 F | Ø2mm | 8.9 | LL V 30 190 R | Ø3mm | 19.0 |
| LL V 20 102 F | | 10.2 | LL V 30 254 F | | 25.4 |
| LL V 20 114 F | | 11.4 | LL V 30 318 F | | 31.8 |
| LL V 20 140 F | | 14.0 | LL V 30 445 F | | 44.5 |
| LL V 20 152 F | | 15.2 | LL V 40 114 F | | 11.4 |
| LL V 20 190 ... | | 19.0 | LL V 40 127 R | | 12.7 |
| LL V 20 254 ... | | 25.4 | LL V 40 140 ... | | 14.0 |
| LL V 20 381 F | | 38.1 | LL V 40 152 ... | | 15.2 |
| LL V 30 114 F | Ø3mm | 11.4 | LL V 40 190 F | Ø4mm | 19.0 |
| LL V 30 127 F | | 12.7 | LL V 40 445 R | | 44.5 |
| LL V 30 152 F | | 15.2 | | | |

please indicate: ... lens design (optional)
 R = round
 F = shallow

| | |
|---------------------------|----------------------|
| insulating body material: | PA 4.6. GF |
| temperature range: | -30°C... +100°C |
| class of inflammability: | UL 94 V-0 |
| Lichtleitermaterial: | polycarbonate, clear |

A

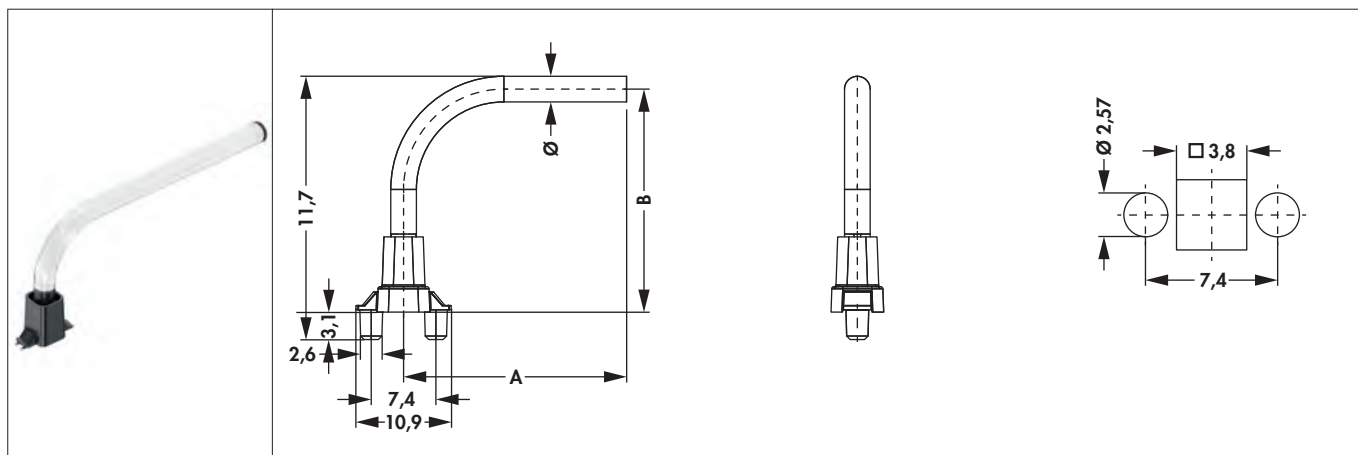
Light pipes for SMDs

– panel light pipe, suitable for common SMD LEDs, white lens, large angle of radiation

B

C

D



E

| art. no. | diameter of lens | dim. [mm] | | art. no. | diameter of lens | dim. [mm] | |
|----------------------------|------------------|-----------|------|--------------------------|------------------|-----------|------|
| | | A | B | | | A | B |
| LL W 30 203 178 ... | Ø3mm | 20.3 | 17.8 | LL W 30 254 254 F | Ø3mm | 25.4 | 25.4 |
| LL W 30 203 254 ... | | | 25.4 | LL W 30 318 178 F | | 31.8 | 17.8 |
| LL W 30 203 381 F | | | 38.1 | LL W 40 203 508 R | Ø4mm | 20.3 | 50.8 |
| LL W 30 203 762 F | | | 76.2 | | | | |

F

please indicate: ... lens design (optional)
R = round
F = shallow

G

| | |
|----------------------------------|----------------------|
| insulating body material: | PA 4.6. GF |
| temperature range: | -30°C... +100°C |
| class of inflammability: | UL 94 V-0 |
| Lichtleitermaterial: | polycarbonate, clear |

H

I

K


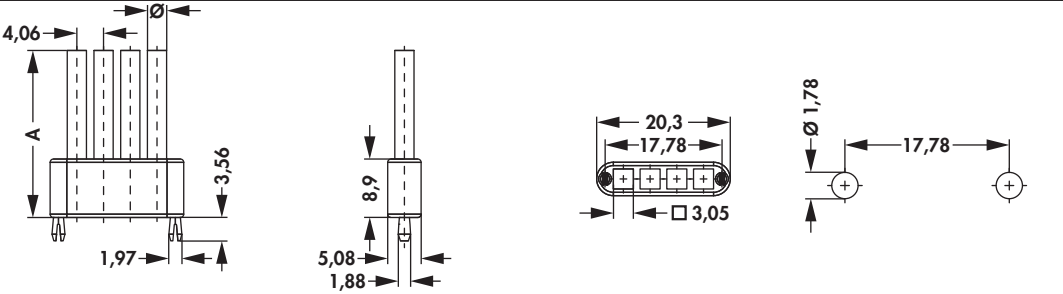

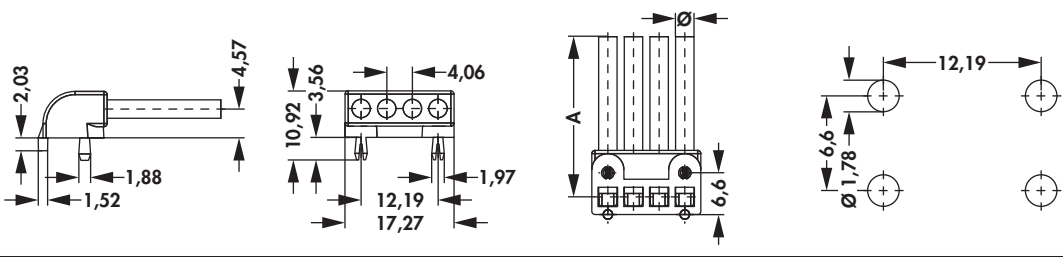
L

M

N

Light pipes for SMDs

– panel light pipe, suitable for common SMD LEDs, white lens, large angle of radiation

| | |
|--|---|
|  |  |
| art. no. | diameter of lens dim. [mm] A |
| LL 4 V 20 254 ... | Ø2mm |
| LL 4 V 30 254 ... | Ø3mm |
| LL 4 V 40 254 ... | Ø4mm |
| insulating body material: | PA 4.6. GF |
| temperature range: | -30°C... +100°C |
| class of inflammability: | UL 94 V-0 |
| Lichtleitermaterial: | polycarbonate, clear |
|  |  |
| art. no. | diameter of lens dim. [mm] A |
| LL 4 W 20 254 ... | Ø2mm |
| LL 4 W 30 254 ... | Ø3mm |
| LL 4 W 40 254 ... | Ø4mm |
| please indicate: ... lens design (optional) R = round F = shallow | |
| insulating body material: | PA 4.6. GF |
| temperature range: | -30°C... +100°C |
| class of inflammability: | UL 94 V-0 |
| Lichtleitermaterial: | polycarbonate, clear |

A
B
C
D
E
F
G
H
I
K
L
M
N

High quality surface treatment for electronic components



Gold-plating

properties: high resistance to wear, good corrosion resistance, temperature stability and solderability

process: drum technology

materials: non-ferrous metals

coating system: copper/nickel/gold



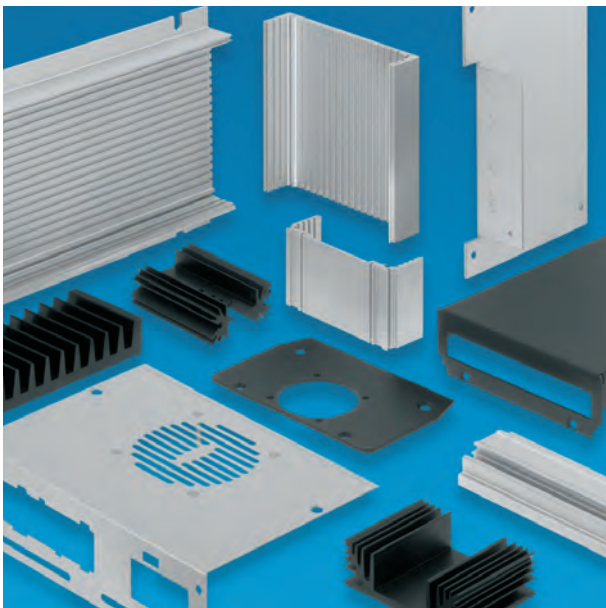
Tin-plating

properties: solderable layers with improved tarnishing and corrosion resistance

process: drum technology

materials: non-ferrous metals

coating system: copper/nickel/tin



Anodising

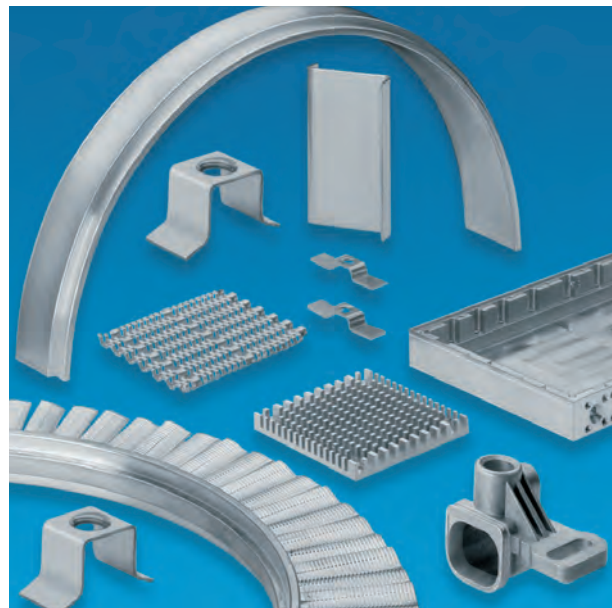
performance: fabrication of corrosion resistant, decorative oxide films

process: anodic oxidation in fully automated equipment

materials: aluminium and aluminium alloys

max. component size: 1500 x 2000 x 450 mm

colour: natural aluminium or black



Degreasing

performance: degreasing of oily or greasy metallic surfaces

process: steam degreasing using chlorinated hydro-carbons in hermetically sealed equipment

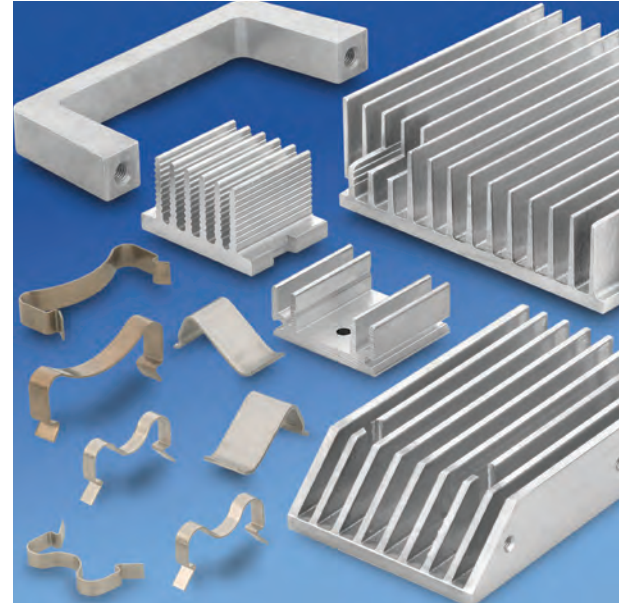
material: aluminium and aluminium alloys

min. component size: 30 x 30 x 30 mm

max. component size: 600 x 400 x 380 mm

max. component weight: 80 kg

High quality surface treatment for electronic components



Transparent passivating (surface free from chromium)

characteristics: environmental compatibility due to chrome free passivation of the aluminium surfaces

process: fabrication of conversion coatings by immersion process

materials: aluminium und aluminium alloys

max. component size: 1500 x 2000 x 450 mm

colour: natural aluminium

Vibratory grinding (trowalization)

characteristics: deburring, removing of sharp edges, rough and fine grinding

process: treatment using vibration technique and grinding tools (trowalization)

materials: aluminium

max. component size: 230 x 200 mm



Anodisation facility

- economization of water by using spray-rinsing, automatized ion exchange installation, cascade water guided system and recirculation of splash water
- reduction of electrical energy by means of current density regulation
- reduction of chemicals by recirculation of the dragged-off chemicals using a compensation of the evaporation losses
- recycling of the sulphuric acid out of the anodizing bathes



Terms and conditions of business

1. General provisions

1.1. The present General Terms and Conditions (GTC) apply to all of our business relationships with our customers ("Purchaser"). The GTC only apply if the Purchaser is an entrepreneur (§ 14 of the German Civil Code), a legal entity of public law or a special fund under public law.

The GTC particularly apply for contracts about the sale and/or the delivery of transportable objects ("Goods"), regardless of whether we manufacture the Goods ourselves or buy them in from suppliers (§§ 433, 651 of the German Civil Code). Unless otherwise agreed, the GTC apply, in the version valid at the time of the Purchaser's order or in the version last transmitted to them, as a framework agreement for similar future contracts, without us having to refer to them each time.

1.2. Our GTC apply exclusively. Deviating, contradicting or additional General Terms and Conditions of the Purchaser are only part of the contract if we have expressly authorised their validity. This approval requirement applies in any case, also if we make deliveries to the Purchaser without reserve, in full knowledge of their Terms and Conditions. Individual, isolated agreements with the Purchaser (including ancillary agreements, additions and changes) always take priority over these GTC. The content of this type of agreement, subject to counterevidence, is to be determined according to a written contract or our written confirmation.

1.3. Legally relevant declarations and announcements of the Purchaser with regards to the contract (for example deadline agreements, defect notifications, withdrawal or reduction) are to be submitted in writing, i.e. in written or text form (for example letter, e-mail, fax). Legal form provisions and other certificates, especially in case of doubts about the legitimation of the declaring party, remain unaffected.

1.4. References to the validity of legal provisions are only for clarification purposes. The legal provisions therefore apply even if there is no reference, unless they have been modified directly in these GTC or expressly excluded.

2. Quotations and orders

Our quotations shall be subject to change without notice and are non-binding. This applies also to information contained in price lists, leaflets etc. Delivery dates stated in our quotations or given to the purchaser by any other means are approximate, and we shall endeavour to keep to them. Delays in delivery shall give no right to claims, unless we have explicitly confirmed such delivery dates and an adequate period of grace granted to us has expired. Orders shall only be binding on us when they have been explicitly confirmed in writing, regardless of the form in which they have been placed with us. Statements made in catalogues are simply descriptions of goods and under no circumstances do they constitute warranted qualities. Furthermore, the characteristics of our samples cannot be regarded as warranted characteristics.

3. Prices

Prices shall be valid only when confirmed by us in writing. They are exclusive of VAT at the current rate and incidentals such as postage and packing, freight, insurance etc., as of storage. If delivery is made more than 3 months after the date of order, we shall be entitled to invoice the price valid at the date of despatch, even though different prices were initially confirmed. The price valid at the date of despatch shall also apply if the order was confirmed without prices being stated. When an order on call is placed, partial deliveries shall be invoiced at the price valid at the date of despatch. Any request by the purchaser for subsequent modifications shall entitle us to amend prices.

4. Conditions of payment

The invoiced sum is to be paid net within 30 days of date of invoice and delivery. If the purchaser is in default with any payment, we are entitled to claim interest for such default at the normal rate of interest charged for current accounts. If we are able to prove that we have incurred greater losses as a result of the delay, we shall be entitled to claim compensation for such damages. We are however entitled at any time, in the context of an ongoing business relationship, to execute a delivery in full or in part only against an advance deposit. We shall declare a corresponding reserve at the latest at the confirmation of the contract.

5. Set-off, right to retention

Only claims which have been recognised by us or have become legally binding may be offset against our invoices. Any right to a retention to be exercised by the purchaser in connection with our claims is explicitly excluded. In case of defects in the delivery, the rights of the Purchaser remain unaffected, particularly with regards to point 10.3. of these GTC.

6. Delivery

The delivery is performed from the storage, wherever the place of fulfilment for the delivery and any subsequent fulfilment may be. Upon request by the Purchaser, the Goods will be sent to a different place of their choice (shipped purchase). Delivery of our goods is explicitly made on behalf of and at the risk of the purchaser. The risk shall pass over to the purchaser when the ordered goods leave our premises. The same applies if goods are collected in our premises from the point in time at which we notify the purchaser that they are ready for collection. Unless we have received instructions to the contrary from the purchaser, we shall decide at our discretion on the most economical delivery method without assuming any liability for the chosen means of delivery.

7. Specially manufactured goods

Components made according to a sample or a drawing or by special request must be taken over and paid for, unless they have a defect we are answerable for and which makes the components completely unfit for the purchaser's purposes. If their fitness for the purchaser's purposes is only reduced, the purchaser may request a reduction of payment but the contract shall not be cancelled.

8. Quantities

We are entitled to supply quantities which are above or below the ordered quantities by up to 10%. Such deviations are usual in this trade and the deliveries are deemed as being in compliance with the contract. If delivery quantities fall below the ordered quantities there shall be no right to subsequent delivery of the missing quantity.

9. Reservation of proprietary rights

9.1. All goods supplied shall remain our property until all current and future claims resulting from the Purchase contract and the business relationship with the purchaser (secured claims) have been paid in full. The purchaser is entitled to dispose of the purchased goods in the ordinary course of business transactions. Reservation of proprietary rights also applies to products resulting from processing, mixing up or combining our goods, in which case we are considered as manufacturers. In the case where our goods are processed, mixed up or combined with goods of third parties, and the proprietary rights of such third parties remain in force, we are entitled to co-ownership according to the proportion of the amount invoiced for such processed goods. In such cases such rights to co-ownership shall be safeguarded by the purchaser.

9.2. The purchaser shall transfer to us, as a security, his claims against third parties resulting from the re-sale of our goods in full or in the proportion of our co-ownership (see subparagraph 9.1.). He is entitled to collect the amount of such claims on our behalf until revoked or until cessation of his payments made to us. The purchaser is not entitled to assign these claims to third parties.

9.3. The purchaser is not entitled to mortgage or transfer the goods which are subject to reservation by way of security.

9.4. The purchaser shall advise us immediately at any seizure of our goods or of any infringement of our rights by third parties.

9.5. In case of a default in payment or a deterioration in the financial situation, we are entitled to request immediate handing over of the goods which are subject to reservation. Any time limited claims shall immediately become due.

9.6. If the value of the securities exceeds our claims by more than 20%, securities to a corresponding amount will be released by us on request at our discretion.

9.7. The extended retention of title (9.1.) does not apply to prepayment orders that have been paid in full.

10. Warranty

10.1. We expressly point out that all information and data is given to the best of our knowledge and belief. The user is solely responsible for the proper use of our products and he should check their suitability for the intended application.

Fischer Elektronik do not assume any warranty, whether expressed or implied, for the suitability, function or merchantability of their products in specific or general applications, and they cannot be held liable for accidental or consequential damage due to non-observance of the above.

10.2. Claims for defects can only be considered if the purchaser has complied with their obligation to check goods and submit a complaint as per Sections 377, 381 of the German Commercial Code [HGB]. If goods have a defect attributable to us, we are obliged to effect a cure, excluding the purchaser's right to withdraw from the contract or to reduce the purchase price

(reduction), unless we are entitled to refuse to effect a cure by virtue of legal regulations. The purchaser shall grant us an adequate period of grace for effecting a cure. A cure may at our discretion be an elimination of the defect (rectification) or the supply of new products. We are entitled to determine the cure owed according to the payment of the purchase price due by the Purchaser. The Purchaser, however, is entitled to retain a part of the purchase price that is proportionate to the defect. The expenses incurred for the verification and cure, particularly transport, road, work and materials costs (not: expansion and installation costs) are borne by us, if there is indeed a defect. Otherwise, we can require that the Purchaser bear the costs arising from the unjustified defect rectification request (particularly examination and transport costs), unless the Purchaser could not have been aware that the defect rectification was unnecessary.

10.3. If rectification of the defect has failed, the purchaser shall be entitled to request a reduction in the purchase price (abatement) or to withdraw from the contract. Rectification shall be deemed to have failed after the second vain attempt, unless further attempts are reasonable in view of the object of the contract and can be reasonably imposed on the purchaser.

10.4. The purchaser's right to put forward further claims for damages shall remain unaffected by this.

10.5. The purchaser's warranty claims shall be subject to a time limit of 12 months from the delivery of the goods to the purchaser, unless we have fraudulently concealed the defect. In this case, the legal regulations shall apply.

10.6. The purchaser's claims for damages shall be subject to a time limit of 12 months from the delivery of the goods. This does not apply if we, our legal representatives or other vicarious agents are responsible for death, personal injury or physical harm, or if we or our legal representatives have been grossly negligent, or if our vicarious agents have acted with intent.

10.7. Contractual penalties which have been agreed between our customers and their customers cannot be imposed upon us unless we have been notified of them and have agreed to them in writing prior to accepting an order.

10.8. If it becomes apparent (by the opening of an application for an insolvency procedure for example) after the conclusion of the contract that our claims to the purchase price are endangered due to lacking payment capacities of the Purchaser, we will then be entitled to refuse the delivery and – after a possible period of notice – to withdraw from the contract in accordance with the legal provisions (§ 321 of the German Civil Code). For contracts about the manufacturing of specific items (making to specification), we can declare the withdrawal immediately; the legal regulations about the dispensability of giving a period of notice remain unaffected.

11. Withdrawal

When delivery in accordance with the contract is not possible for reasons beyond our control, we are entitled to withdraw from the contract. Such withdrawal shall not entitle the purchaser to assert any right against us.

12. Export clause

We are not obliged to reimburse damages arising from delays in delivery or it being completely impossible to deliver as a result of statutory or official export restrictions, unless we act with intent or gross negligence suffered by the Customer or other persons. The Customer's duty to pay the agreed remuneration shall not be affected by disruptions in our performance as a result of export restrictions. We shall be entitled to withdraw from the contract if, after the contract is signed, our performance is disrupted as a result of export restrictions.

13. Place of performance and jurisdiction, applicable law



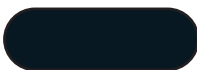
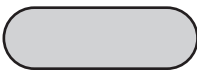



13.1. The place of performance and the place of venue for deliveries and payments and/or any litigation arising between us and the purchaser shall be the headquarters of our company.

13.2. The relationship between the contractual parties shall be regulated solely in accordance with the law in force in the Federal Republic of Germany. The regulations of international uniform law, particularly the UN CISG, shall not apply.




Status as at: 26.08.2022

The latest T&Cs shall apply at all times. They may be downloaded at www.fischer elektronik.de/en


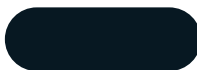


| art. no. | HEATSINKS SURFACES & CASES SURFACES | | |
|----------|-------------------------------------|--|--|
|----------|-------------------------------------|--|--|

| | | |
|-----------|---|---|
| AL |  | raw degreased aluminium |
| BZ |  | raw pickled aluminium |
| LP |  | outside black lacquered RAL 9005 / chrome-free transparent passivated |
| ME |  | clear anodised |
| MI |  | solderable surface |
| SA |  | black anodised |
| TP |  | chrome-free transparent passivated |

| art. no. | CONNECTOR CONTACT SURFACE FINISH | | |
|----------|----------------------------------|--|--|
|----------|----------------------------------|--|--|

| | | |
|----------|---|-----------------------|
| G |  | gold-plated |
| S |  | selective gold-plated |
| Z |  | tin-plated |

| art. no. | RAL | COLOURS | ARTICLES |
|----------|-----|---------|----------|
|----------|-----|---------|----------|

| | | | |
|-----------|-------------|--|--|
| NB | 5022 |  night blue | system cases "RackCase" / shell cases |
| S | 9005 |  deep black | TG / shell cases / system cases "RackCase" |
| TB | 5018 |  turquoise blue | system cases "RackCase" / shell cases |
| UL | 5002 |  ultramarine blue | Plusline / shell cases |

The surface coatings and colours listed here in the catalogue only represent the standard designs. Other coating types and colours can be realised on request according to customer-specific requirements.

fischer elektronik
to cool to protect to connect

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Extruded heatsinks LED headsinks Cooling aggregates

Germany

Extruded heatsinks
LED-headsinks
Cooling aggregates
Thermally conductive mat.

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Cases 19" technology Accessories

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Cases
19" technology
Accessories

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kühlen schützen verbinden to cool to protect to connect dissipation protection connexion

f.collect

Germany

Slip-Case for
collecting the Fischer
catalogues

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