![SMC] Information

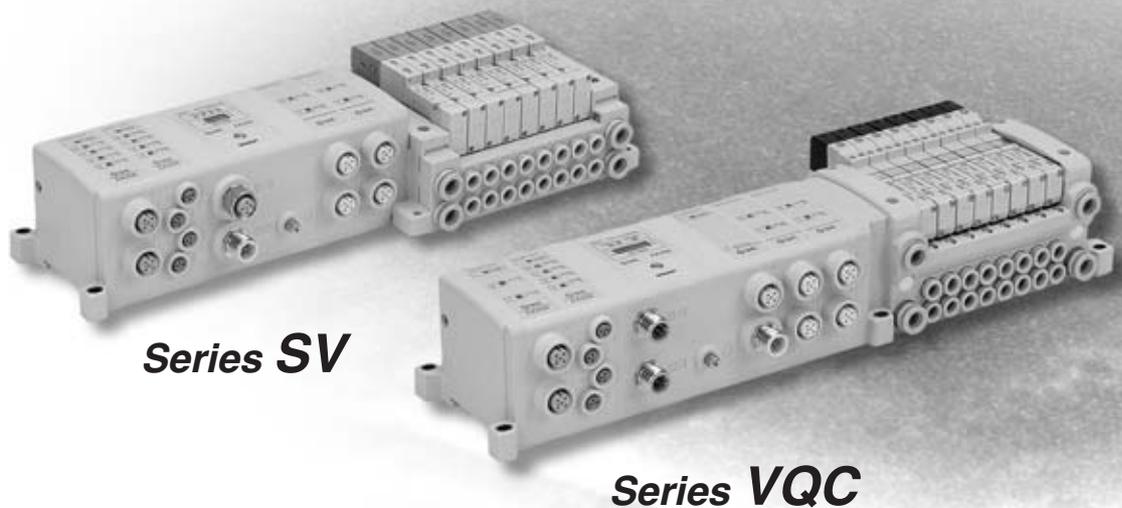# Serial Wiring with Input/Output Unit
5 Port Solenoid Valve for EX250
Series *SV/VQC*

Series	Applicable protocol	Applicable manifold
Serial wiring with input/output unit EX250	DeviceNet™	SV1000 2000 3000 VQC1000 2000 4000
	PROFIBUS-DP	
	CC-Link	
	AS-i	
	CANopen	
	EtherNet/IP™	

EtherNet/IP™ compatible products are now available.

● Compatible with DHCP
● Communication speed: 10 M/100 Mbps
● Able to HOLD/CLEAR the output in case of an error occurrence.

Series **SV**

Series **VQC**

DeviceNet™ is a trademark of ODVA.
EtherNet/IP™ is a trademark used under license by ODVA.

![SMC]

EX250 Serial Wiring With Input/Output Unit
Series SV CE

For details about certified products conforming to international standards, visit us at www.smcworld.com.

How to Order

● Tie-rod Base

SS5V **1** — W 10S1 **QW** □ □ □ D — **05** **U** □ □ □

Series

1	SV1000
2	SV2000
3	SV3000

Enclosure IP67 specification

SI unit

QW	DeviceNet
NW	PROFIBUS-DP
VW	CC-Link
TAW	AS-i 8in/8out 31Slave Mode , 2 power supply system
TBW	AS-i 4in/4out 31Slave Mode , 2 power supply system
TCW	AS-i 8in/8out 31Slave Mode, 1 power supply system
TDW	AS-i 4in/4out 31Slave Mode, 1 power supply system
YW	CANopen
ZEN	EtherNet/IP
0	Without SI unit, Without end plate

· Input blocks cannot be mounted without an SI unit.
· When the DIN rail is included without an SI unit, the DIN rail length will accommodate an SI unit and one input block.
Note 1) There is a limit to the current supplied from an AS-i compatible SI unit, 1 power supply system specification to an input block or valve. For details, refer to page 13.
Note 2) For SI unit part no., refer to page 3.

Input block stations

-	None
1	1 station
⋮	⋮
8	8 stations

Note) Without SI unit, the symbol is "-".
When an AS-i compatible SI unit is used, there is a limit to the maximum number of stations. For details, please refer to page 13.

Mounting

-	Direct mounting	
D	DIN rail mounting (with DIN rail)	
D0 Note)	DIN rail mounting (without DIN rail)	
D3	3 stations	When a longer DIN rail is desired than the specified stations. (Specify a longer rail than the standard length.)
⋮	⋮	
D20	20 stations	

Note) In the case of D0, only DIN rail brackets are attached.

Input block type

-	Without input block
1	M12 2 inputs
2	M12 4 inputs
3	M8 4 inputs

Note) Without SI unit, the symbol is "-".

Input block common specification

-	+COM. or without input block
N	–COM.

Stations

Symbol	No. of stations	Note
02	2 stations	Double wiring specification Note 1)
⋮	⋮	
16	16 stations	
02	2 stations	Specified layout Note 2) (Up to 32 solenoids possible.)
⋮	⋮	
20	20 stations	

· When an AS-i compatible SI unit is used, the maximum numbers of solenoids are as follows:
8in/8out specification: Maximum 8 solenoids
4in/4out specification: Maximum 4 solenoids

Note 1) Double wiring specification: Single, double, 3 position and 4 position solenoid valves can be used on all manifold stations.
Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
Note 2) Specified layout: Indicate the wiring specification on a manifold specification sheet. (Note that double, 3 position and 4 position valves cannot be used where single solenoid wiring has been specified.)

P, E port position

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 20 stations)

SUP/EXH block assembly specification

-	Internal pilot
S Note)	Internal pilot, Built-in silencer
R	External pilot
RS Note)	External pilot, Built-in silencer

Note) When the built-in silencer type is used, keep the exhaust port away from direct contact with water or other liquids.

● A, B port size (Metric)

Symbol	A, B port	P, E port	Applicable series
C3	With one-touch fitting for ø3.2	With one-touch fitting for ø8	SV1000
C4	With one-touch fitting for ø4		
C6	With one-touch fitting for ø6		
C4	With one-touch fitting for ø4	With one-touch fitting for ø10	SV2000
C6	With one-touch fitting for ø6		
C8	With one-touch fitting for ø8		
C6	With one-touch fitting for ø6	With one-touch fitting for ø12	SV3000
C8	With one-touch fitting for ø8		
C10	With one-touch fitting for ø10		
M	A, B ports mixed		

● A, B port size (Inch)

Symbol	A, B port	P, E port	Applicable series
N1	With one-touch fitting for ø1/8"	With one-touch fitting for ø5/16"	SV1000
N3	With one-touch fitting for ø5/32"		
N7	With one-touch fitting for ø1/4"		
N3	With one-touch fitting for ø5/32"	With one-touch fitting for ø3/8"	SV2000
N7	With one-touch fitting for ø1/4"		
N9	With one-touch fitting for ø5/16"		
N7	With one-touch fitting for ø1/4"	With one-touch fitting for ø3/8"	SV3000
N9	With one-touch fitting for ø5/16"		
N11	With one-touch fitting for ø3/8"		
M	A, B ports mixed		

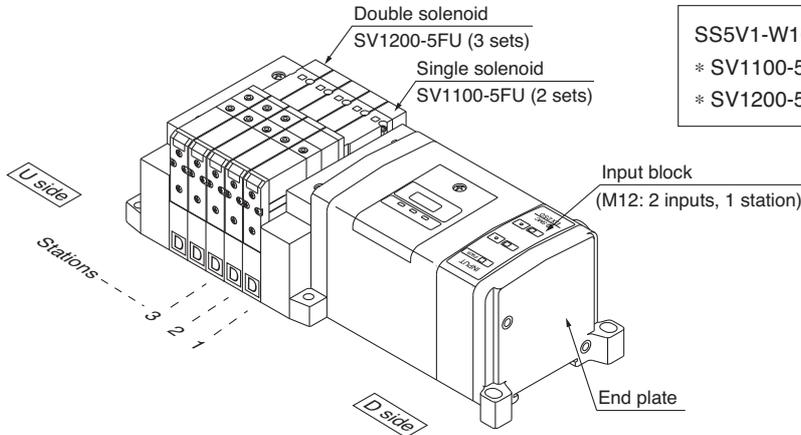∗ In the case of a mixed specification (M), indicate separately on a manifold specification sheet.
∗ The port sizes for the X, PE ports of the external pilot specification (R, RS) are ø4 (metric), ø5/32" (inch) for the SV1000/2000 series and ø6 (metric) and ø1/4" (inch) for the SV3000 series.

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How to Order Valve Manifold Assembly (Example)

Example (SV1000)

Manifold
SS5V1-W10S1QW11ND-05B-C6 (1 set)

Double solenoid
SV1200-5FU (3 sets)

Single solenoid
SV1100-5FU (2 sets)

Input block
(M12: 2 inputs, 1 station)

End plate

SS5V1-W10S1QW11ND-05B-C6 ·········	1 set (Manifold base part no.)
∗ SV1100-5FU ········	2 sets (Single solenoid part no.)
∗ SV1200-5FU ········	2 sets (Double solenoid part no.)

How to Order Solenoid Valves

SV 1 1 0 0 ☐ ☐ − 5 F ☐ ☐ ☐ Note)

Note) Available with manifold block for station additions. Refer to SMC's "Best Pneumatics" catalogue.

Series

1	SV1000
2	SV2000
3	SV3000

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗ 4 position dual 3 port valves are applicable to the SV1000 and SV2000 series only.

Pilot

-	Internal pilot
R	External pilot

∗ External pilot specification is not applicable for 4 position dual 3 port valves.

Back pressure check valve

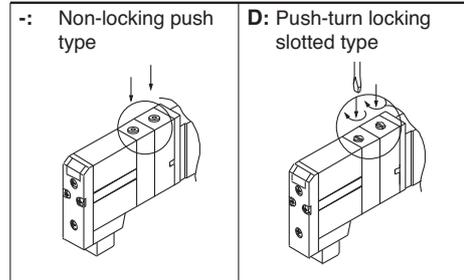| -	None
K	Built-in

∗ Built-in back pressure check valve type is applicable to the SV1000 series only.

Manual override

| **-:** | Non-locking push type | **D:** | Push-turn locking slotted type |

Light/surge voltage suppressor

U	With light/surge voltage suppressor
R	With surge voltage suppressor

Rated voltage

5	24 VDC

• For solenoid valve specifications and dimensions, refer to the SV series in the SMC's "Best Pneumatics" catalogue.
• For SI unit dimensions, refer to page 12.
• For details on the SI unit, refer to the separate technical instruction manual.

SI Unit Part No.

SI Unit Part No.

Symbol	Protocol type	SI unit part no.
QW	DeviceNet	EX250-SDN1
NW	PROFIBUS-DP	EX250-SPR1
VW	CC-Link	EX250-SMJ2
YW	CANopen	EX250-SCA1A

Symbol	Protocol type	SI unit part no.
TAW	AS-i 8in/8out 31Slave Mode, 2 power supply system	EX250-SAS3
TBW	AS-i 4in/4out 31Slave Mode, 2 power supply system	EX250-SAS5
TCW	AS-i 8in/8out 31Slave Mode, 1 power supply system	EX250-SAS7
TDW	AS-i 4in/4out 31Slave Mode, 1 power supply system	EX250-SAS9
ZEN	EtherNet/IP	EX250-SEN1

Series *VQC1000*

Base Mounted

Plug-in Manifold   C E

For details about certified products conforming to international standards, visit us at www.smcworld.com.

How to Order Manifold

VV5QC 1 1 – 08 C6 SDQ ☐ ☐ ☐ ☐ – B ······ **S** Kit

Series

| 1 | VQC1000 |

Manifold

| 1 | Plug-in manifold |

Stations

| 01 | 1 station |
| ⋮ | ⋮ |

The maximum number of stations differs depending on the kits.

Cylinder port size

C3	With one-touch fitting for ø3.2
C4	With one-touch fitting for ø4
C6	With one-touch fitting for ø6
M5	M5 thread
CM	Mixed size/with port plug
L3	Elbow top ported with one-touch fitting for ø3.2
L4	Elbow top ported with one-touch fitting for ø4
L6	Elbow top ported with one-touch fitting for ø6
L5	M5 thread
B3	Elbow bottom ported with one-touch fitting for ø3.2
B4	Elbow bottom ported with one-touch fitting for ø4
B6	Elbow bottom ported with one-touch fitting for ø6
B5	M5 thread
LM	Mixed size for elbow piping

Note 1) Indicate the size on a manifold specification sheet in the case of "CM" and "LM".
Note 2) Symbols for inch sizes are as follows:
  • N1: ø1/8"
  • N3: ø5/32"
  • N7: ø1/4"
  • NM: Mixed
  The top ported elbow is LN☐ and the bottom ported elbow is BN☐.

Kit name
(For details on kits, refer to the next page.)

Option

-	None
B	With back pressure check valve (all stations) Note 2)
D	With DIN rail (Rail length: Standard)
D☐	With DIN rail (Rail length: Special) Note 3)
K	Special wiring specification (Except double wiring) Note 4)
N	With name plate
R	External pilot Note 5)
S	Built-in silencer, Direct exhaust Note 6)

Note 1) When two or more options are specified, indicate them alphabetically.
  Example) -BRS
Note 2) When installing a back pressure check valve on the required station, enter the part number and specify the station position on a manifold specification sheet.
Note 3) For special DIN rail length, indicate "D☐". (Enter the number of stations inside ☐.)
  Example: -D08
  In this case, stations will be mounted on a DIN rail for 8 stations regardless of the actual number of manifold stations.
  The specified number of stations must be larger than the number of stations on the manifold.
  Indicate "D0" for the option without DIN rail.
Note 4) Be sure to indicate the wiring specification on a manifold specification sheet.
Note 5) For external pilot option, "-R", indicate the external pilot specification "R" for the applicable valves as well.
Note 6) The built-in silencer type does not satisfy the IP67 standard.

Input block COM.

| - | PNP or without input block |
| N | NPN |

Input block type

-	Without input block
1	M12 2 inputs
2	M12 4 inputs
3	M8 4 inputs

Number of input blocks

-	Without SI unit
0	Without input block
1	With 1-input block
⋮	⋮
8	With 8-input block

Note) When an AS-i compatible SI unit is used, there is a limit to the maximum number of stations. For details, please refer to page 13.

SI unit COM.

SI unit COM.		EX250					
		DeviceNet	PROFIBUS-DP	CC-Link	AS-i	CANopen	EtherNet/IP
-	+COM.	—	—	○	—	—	—
N	–COM.	○	○	—	○	○	○

Note) Without SI unit, the symbol is "-".

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How to Order Valves

VQC 1 1 0 0 □ – 5 □ □

Series

| 1 | VQC1000 |

Type of actuation

1	2 position single	A Note)	4 position dual 3 port valve (A)
2	2 position double (Metal)	B Note)	4 position dual 3 port valve (B)
	2 position double (Rubber)	C Note)	4 position dual 3 port valve (C)
3	3 position closed centre		Note) Rubber seal type only.
4	3 position exhaust centre		
5	3 position pressure centre		
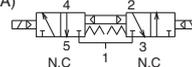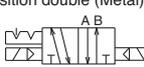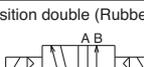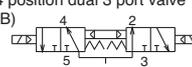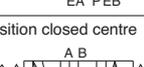
Seal

| 0 | Metal seal |
| 1 | Rubber seal |

Function

–	Standard (1 W)
K Note 2)	High-pressure type (1.0 MPa)
N	Negative COM.
R Note 3)	External pilot
Y Note 4)	Low-wattage type (0.5 W)

Note 1) When two or more symbols are specified, indicate them alphabetically.
Note 2) Metal seal type only.
Note 3) Not applicable to 4 position dual 3 port valves.
Note 4) Use a low wattage type for continuous energisation (when the totaled energised time per day is longer than the non-energised time.)

Rated voltage

| 5 | 24 VDC |

With/Without light/surge voltage suppressor

| – | Yes |

Manual override

– :	Non-locking push type (Tool required)
B :	Locking type (Tool required)
C :	Locking type (Manual)
D :	Slide locking type (Manual)

Kit name

S Kit (Serial transmission kit for I/O)

SI unit
Input block
End plate

SI unit: **EX250**   **IP67**

Symbol	Protocol type	No. of stations	SI unit part no.
SD0	Without SI unit, Without end plate		—
SDQ	DeviceNet	1 to 12 stations (24 stations)	EX250-SDN1
SDN	PROFIBUS-DP		EX250-SPR1
SDV	CC-Link		EX250-SMJ2
SDTA	AS-i 8in/8out 31Slave Mode, 2 power supply system	1 to 4 stations (8 stations)	EX250-SAS3
SDTB	AS-i 4in/4out 31Slave Mode, 2 power supply system	1 to 2 stations (4 stations)	EX250-SAS5
SDTC Note)	AS-i 8in/8out 31Slave Mode, 1 power supply system	1 to 4 stations (8 stations)	EX250-SAS7
SDTD Note)	AS-i 4in/4out 31Slave Mode, 1 power supply system	1 to 2 stations (4 stations)	EX250-SAS9
SDY	CANopen	1 to 12 stations (24 stations)	EX250-SCA1A
SDZEN	EtherNet/IP		EX250-SEN1

Note) There is a limit to the current supplied from an SI unit of the SDTC or SDTD specification to an input block or valve. For details, refer to page 13.
SI units are compatible with IP67 ratings.

・For solenoid valve specifications and dimensions, refer to the VQC series in SMC's "Best Pneumatics" catalogue.
・For SI unit dimensions, refer to page 12.
・For details on the SI unit, refer to the separate technical instruction manual.

Series *VQC2000*

Base Mounted

Plug-in Manifold C€

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international standards, visit us at www.smcworld.com.

How to Order Manifold

VV5QC 2 1 – 08 C6 SDQ ☐ ☐ ☐ ☐ – B ⸱⸱⸱⸱⸱ S Kit

Series

2	VQC2000

Manifold

1	Plug-in manifold

Stations

01	1 station
⋮	⋮

The maximum number of
stations differs depending
on the kits.

Cylinder port size

C4	With one-touch fitting for ø4
C6	With one-touch fitting for ø6
C8	With one-touch fitting for ø8
CM	Mixed size/with port plug
L4	Elbow top ported with one-touch fitting for ø4
L6	Elbow top ported with one-touch fitting for ø6
L8	Elbow top ported with one-touch fitting for ø8
B4	Elbow bottom ported with one-touch fitting for ø4
B6	Elbow bottom ported with one-touch fitting for ø6
B8	Elbow bottom ported with one-touch fitting for ø8
LM	Mixed size for elbow piping

Note 1) Indicate the size on a manifold
specification sheet in the case of
"CM" and "LM".
Note 2) Symbols for inch sizes are as follows:
• N3: ø5/32"
• N7: ø1/4"
• N9: ø5/16"
• NM: Mixed
The top ported elbow is LN☐ and the
bottom ported elbow is BN☐.

Kit name
(For details on kits, refer to the next page.)

Option

-	None
B	With back pressure check valve (all stations) Note 2)
D	With DIN rail (Rail length: Standard)
D☐	With DIN rail (Rail length: Special) Note 3)
K	Special wiring specification (Except double wiring) Note 4)
N	With name plate
R	External pilot Note 5)
S	Built-in silencer, Direct exhaust Note 6)
T	P, R port on U side, branched type Note 7)

Note 1) When two or more options are specified, indicate them
alphabetically.
Example) -BRS
Note 2) When installing a back pressure check valve on the
required station, enter the part number and specify the
station position on a manifold specification sheet.
Note 3) For special DIN rail length, indicate "D☐". (Enter the
number of stations inside ☐.)
Example: -D08
In this case, stations will be mounted on a DIN rail for
8 stations regardless of the actual number of manifold
stations.
The specified number of stations must be larger than
the number of stations on the manifold.
Indicate "D0" for the option without DIN rail.
Note 4) Be sure to indicate the wiring specification on a
manifold specification sheet.
Note 5) For external pilot option, "-R", indicate the external
pilot specification "R" for the applicable valves as well.
Note 6) The built-in silencer type does not satisfy the IP67
standard.
Note 7) The SUP and EXH ports on U side are branched
(toward the cylinder port and coil) with ø12 one-touch
fittings for connection.

Input block COM.

-	PNP or without input block
N	NPN

Input block type

-	Without input block
1	M12 2 inputs
2	M12 4 inputs
3	M8 4 inputs

Number of input blocks

-	Without SI unit
0	Without input block
1	With 1-input block
⋮	⋮
8	With 8-input block

Note) When an AS-i compatible SI unit is used,
there is a limit to the maximum number of
stations. For details, please refer to page 13.

SI unit COM.

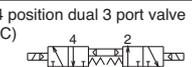| SI unit COM.		EX250					
		DeviceNet	PROFIBUS-DP	CC-Link	AS-i	CANopen	EtherNet/IP
-	+COM.	—	—	○	—	—	—
N	–COM.	○	○	—	○	○	○

Note) Without SI unit, the symbol is "-".

SMC

How to Order Valves

VQC 2 1 0 0 ☐ – 5 ☐ ☐

Series

| 2 | VQC2000 |

Type of actuation

1	2 position single	A B / EA P EB	A Note)	4 position dual 3 port valve (A)	4 2 / 5 3 / N.C 1 N.C
2	2 position double (Metal)	A B / EA P EB	B Note)	4 position dual 3 port valve (B)	4 2 / 5 3 / N.O 1 N.O
	2 position double (Rubber)	A B / EA P EB	C Note)	4 position dual 3 port valve (C)	4 2 / 5 3 / N.C 1 N.O
3	3 position closed centre	A B / EA P EB			
4	3 position exhaust centre	A B / EA P EB			
5	3 position pressure centre	A B / EA P EB			

Note) Rubber seal type only.

Seal

| 0 | Metal seal |
| 1 | Rubber seal |

Function

–	Standard (1 W)
K Note 2)	High-pressure type (1.0 MPa)
N	Negative COM.
R Note 3)	External pilot
Y Note 4)	Low-wattage type (0.5 W)

Note 1) When two or more symbols are specified, indicate them alphabetically.
Note 2) Metal seal type only.
Note 3) Not applicable to 4 positions dual 3 port valves.
Note 4) Use a low wattage type for continuous energisation (when the totaled energised time per day is longer than the non-energised time.)
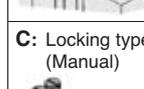
Rated voltage

| 5 | 24 VDC |

With/Without light/surge voltage suppressor

| – | Yes |

Manual override

–:	Non-locking push type (Tool required)
B:	Locking type (Tool required)
C:	Locking type (Manual)
D:	Slide locking type (Manual)

Kit name

S | **Kit (Serial transmission kit for I/O)**

SI unit
Input block
End plate

SI unit: **EX250** **IP67**

Symbol	Protocol type	No. of stations	SI unit part no.
SD0	Without SI unit, Without end plate		—
SDQ	DeviceNet	1 to 12 stations (24 stations)	EX250-SDN1
SDN	PROFIBUS-DP		EX250-SPR1
SDV	CC-Link		EX250-SMJ2
SDTA	AS-i 8in/8out 31Slave Mode, 2 power supply system	1 to 4 stations (8 stations)	EX250-SAS3
SDTB	AS-i 4in/4out 31Slave Mode, 2 power supply system	1 to 2 stations (4 stations)	EX250-SAS5
SDTC Note)	AS-i 8in/8out 31Slave Mode, 1 power supply system	1 to 4 stations (8 stations)	EX250-SAS7
SDTD Note)	AS-i 4in/4out 31Slave Mode, 1 power supply system	1 to 2 stations (4 stations)	EX250-SAS9
SDY	CANopen	1 to 12 stations (24 stations)	EX250-SCA1A
SDZEN	EtherNet/IP		EX250-SEN1

Note) There is a limit to the current supplied from an SI unit of the SDTC or SDTD specification to an input block or valve. For details, refer to page 13.
SI units are compatible with IP67 ratings.

- For solenoid valve specifications and dimensions, refer to the VQC series in SMC's "Best Pneumatics" catalogue.
- For SI unit dimensions, refer to page 12.
- For details on the SI unit, refer to the separate technical instruction manual.

SMC

Series *VQC4000*

Base Mounted

Plug-in Manifold   CE

For details about certified products conforming to international standards, visit us at www.smcworld.com.

How to Order Manifold

VV5QC 4 1 – **16** **03** **SDQ** ☐ ☐ ☐ ☐ – ☐ ······ **S** Kit

Series

| 4 | VQC4000 |

Manifold

| 1 | Plug-in manifold |

Stations

| 01 | 1 station |
| ⋮ | ⋮ |

The maximum number of stations differs depending on the kits.

Cylinder port size

C8	With one-touch fitting for ø8
C10	With one-touch fitting for ø10
C12	With one-touch fitting for ø12
02	Rc 1/4
03	Rc 3/8
B	Bottom ported Rc 1/4
CM	Mixed size

Note 1) Indicate the size on a manifold specification sheet in the case of "CM".
Note 2) Symbols for inch sizes are as follows:
<For one-touch fitting>
• N7: ø1/4"
• N9: ø5/16"
• N11: ø3/8"
• NM: Mixed

Option

| - | None |
| K | Special wiring specification (Except double wiring) Note) |

Note) Be sure to indicate the wiring specification on a manifold specification sheet.

Input block COM.

| - | PNP or without input block |
| N | NPN |

Input block type

-	Without input block
1	M12 2 inputs
2	M12 4 inputs
3	M8 4 inputs

Number of input blocks

-	Without SI unit
0	Without input block
1	With 1-input block
⋮	⋮
8	With 8-input block

Note) When an AS-i compatible SI unit is used, there is a limit to the maximum number of stations. For details, please refer to page 13.

SI unit COM.

SI unit COM.		EX250					
		DeviceNet	PROFIBUS-DP	CC-Link	AS-i	CANopen	EtherNet/IP
-	+COM.	—	—	○	—	—	—
N	−COM.	○	○	—	○	○	○

Note) Without SI unit, the symbol is "-".

Kit name

S **Kit (Serial transmission kit for I/O)**

SI unit

Input block

End plate

SI unit: **EX250**   **IP67**

Symbol	Protocol type	No. of stations	SI unit part no.
SD0	Without SI unit, Without end plate	1 to 12 stations (24 stations)	—
SDQ	DeviceNet		EX250-SDN1
SDN	PROFIBUS-DP		EX250-SPR1
SDV	CC-Link		EX250-SMJ2
SDTA	AS-i 8in/8out 31Slave Mode, 2 power supply system	1 to 4 stations (8 stations)	EX250-SAS3
SDTB	AS-i 4in/4out 31Slave Mode, 2 power supply system	1 to 2 stations (4 stations)	EX250-SAS5
SDTC Note)	AS-i 8in/8out 31Slave Mode, 1 power supply system	1 to 4 stations (8 stations)	EX250-SAS7
SDTD Note)	AS-i 4in/4out 31Slave Mode, 1 power supply system	1 to 2 stations (4 stations)	EX250-SAS9
SDY	CANopen	1 to 12 stations (24 stations)	EX250-SCA1A
SDZEN	EtherNet/IP		EX250-SEN1

Note) There is a limit to the current supplied from an SI unit of the SDTC or SDTD specification to an input block or valve. For details, refer to page 13.
SI units are compatible with IP67 ratings.

SMC

How to Order Valves

VQC 4 | 1 | 0 | 0 | | — 5 | | |

Series

4	VQC4000

Type of actuation

1	2 position single
2	2 position double (Metal)
	2 position double (Rubber)
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre
6	3 position double check

Seal

0	Metal seal
1	Rubber seal

Function Note 1)

-	Standard (1 W)
R	External pilot
Y Note 2)	Low-wattage type (0.5 W)

Note 1) When two or more symbols are specified, indicate them alphabetically.
Note 2) Use a low wattage type for continuous energisation (when the totaled energised time per day is longer than the non-energised time.)

Rated voltage

5	24 VDC

With/Without light/surge voltage suppressor

| - | Yes |
| E | Without light, with surge voltage suppressor |

Manual override

| -: | Non-locking push type (Tool required) |
| B: | Locking type (Tool required) |

• For solenoid valve specifications and dimensions, refer to the VQC series in SMC's "Best Pneumatics" catalogue.
• For SI unit dimensions, refer to page 12.
• For details on the SI unit, refer to the separate technical instruction manual.

Serial Wiring with Input/Output Unit
Series EX250

Integrated serial wiring	· Ease of mounting, and space-savings are achievable, integrating wiring by connector.
Input/Output number	· Compatible with 32-digital outputs/inputs.
Enclosure	· IP67 compatible

SI Unit

Input block Output block

SI unit

Power block

Input block Output block
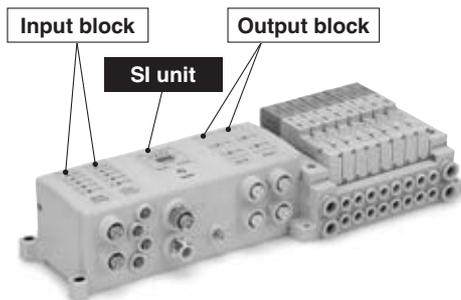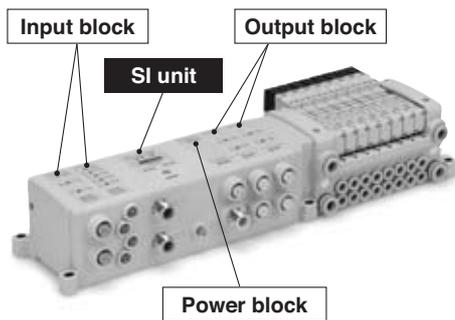
SI unit

How to Order SI Unit

EX250－S DN1

● **Communication protocol**

DN1	DeviceNet
PR1	PROFIBUS-DP
MJ2	CC-Link
AS3	AS-i (8in/8out 31Slave Mode, 2 power supply system)
AS5	AS-i (4in/4out 31Slave Mode, 2 power supply system)
AS7	AS-i (8in/8out 31Slave Mode, 1 power supply system)
AS9	AS-i (4in/4out 31Slave Mode, 1 power supply system)
CA1A	CANopen
EN1	EtherNet/IP

SMC

SI Unit Specifications

Model		EX250-SDN1	EX250-SPR1	EX250-SMJ2	EX250-SCA1A	EX250-SEN1	EX250-SAS3/5	EX250-SAS7/9
Applicable system	**Protocol**	DeviceNet	PROFIBUS-DP	CC-Link	CANopen	EtherNet/IP	AS-Interface (AS-i)	
	Version Note 1)	Release 2.0	V0	Ver.1.10	CiA DS-301 V4.02 and CiA DS-401	Release1.0	Version 2.11 Standard Address Mode	
Communication speed		125 k/250 k/ 500 kbps	9.6 k/19.2 k/ 45.45 k/93.75 k/ 187.5 k/500 kbps 1.5 M/3 M/ 6 M/12 Mbps	156 k/ 625 kbps 2.5 M/5 M/ 10 Mbps	10 k/20 k/ 50 k/125 k/ 250 k/500 kbps/ 800 kbps/ 1 Mbps	10 M/ 100 Mbps	167 kbps	
Power supply for input and internal control	**Power supply voltage**	21.6 to 26.4 VDC					26.5 to 31.6 VDC Note 2)	
	Internal current consumption	—	100 mA or less				—	
Power supply for output	**Power supply voltage**	22.8 to 26.4 VDC					Note 2) 26.5 to 31.6 VDC	
Power supply for communication	**Power supply voltage**	11 to 25 VDC	—				26.5 to 31.6 VDC Note 2)	
	Internal current consumption	100 mA or less	—				SAS3: 100 mA or less SAS5: 65 mA or less	SAS7: 100 mA or less SAS9: 65 mA or less
Input	**Number of inputs**	32 points (Based on input block connection) Note 5)					SAS3: 8 points SAS5: 4 points	SAS7: 8 points SAS9: 4 points
	Supply voltage	24 VDC						
	Supply current	Max. 1.0 A					SAS3: max. 240 mA SAS5: max. 2120 mA	Note 3)
Output	**Output type**	PNP output (–COM.)		NPN output (+COM.)	PNP output (–COM.)			
	Number of outputs	32 points					SAS3: 8 points SAS5: 4 points	SAS7: 8 points SAS9: 4 points
	Connection block	Solenoid valve (single, double), Output block, Power block Note 6)						
	Supply voltage	24 VDC						
	Supply current	Max. 2.0 A					SAS3: max. 500 mA SAS5: max. 250 mA	Note 3)
Environmental resistance	**Enclosure**	IP67				IP67		
	Operating temperature range	Operating: 5 to 45ºC Stored: –20 to 60ºC (with no freezing and condensation)						
	Operating humidity range	Operating, Stored: 35 to 85%RH (with no condensation)						
	Withstand voltage	500 VAC for 1 min. between whole charging part and case						
	Insulation resistance	10 MΩ or more (500 VDC Mega) between whole charging part and case						
	Vibration resistance	10 to 150 Hz with a 0.7 mm amplitude or 50 m/s^2 in each X, Y, Z direction for 2 hrs (De-energised)						
	Impact resistance	150 m/s^2 in each X, Y, Z direction, 3 times (De-energised)						
Standard		CE marking (CSA)						
Weight		250 g						
Accessory	**Tie-rod** Note 4)	2 pcs.						

Note 1) Please note that the version is subject to change.
Note 2) The EX250-SAS7/9 is powered by the single system spec., in which the communication power source is separated into input, power supply for internal control, and/or for output.
Note 3) The EX250-SAS7/9 is powered by the single system spec., that is separated for use depending on the aggregated values of input/output supply power as shown below. (For details, refer to page 13.)

EX250-SAS7 ··· Max.250 mA, EX250-SAS9 ··· Max.120 mA

Note 4) When an SI unit is integrated into a manifold, its tie-rods are also incorporated at the time of shipping.
Note 5) For connected input equipment, refer to page 14.
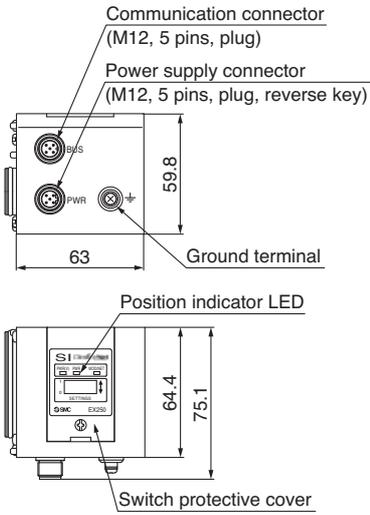Note 6) For connected output equipment, refer to page 21.

Maximum Transmission Distance

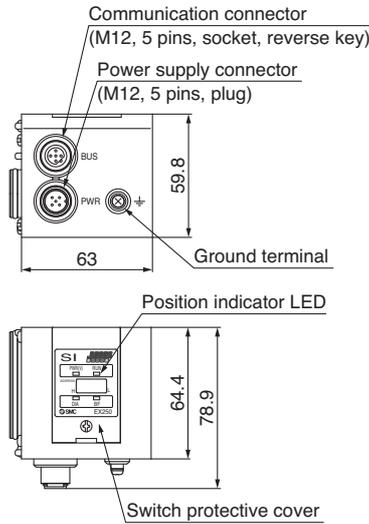| Model	Maximum transmission distance
EX250-SDN1	500 m (125 kbps), 250 m (250 kbps), 100 m (500 kbps)
EX250-SPR1	23 km (Repeater required)
EX250-SMJ2	1200 m (156 kbps), 900 m (625 kbps), 400 m (2.5 Mbps), 160 m (5 Mbps), 100 m (10 Mbps)
EX250-SCA1A	5000 m (10 kbps), 2000 m (20 kbps), 1000 m (50 kbps), 500 m (125 kbps), 250 m (250 kbps), 100 m (500 kbps), 50 m (800 kbps), 25 m (1 Mbps)
EX250-SEN1	100 m (10/100 Mbps)
EX250-SAS3/5	300 m (when using a repeater)
EX250-SAS7/9	

Series *EX250*

SI Unit Dimensions / Parts Description

EX250-SDN1 (DeviceNet)

Communication connector
(M12, 5 pins, plug)

Power supply connector
(M12, 5 pins, plug, reverse key)

BUS

PWR

59.8

63

Ground terminal

Position indicator LED

SI

64.4

75.1

Switch protective cover

EX250-SPR1 (PROFIBUS-DP)

Communication connector
(M12, 5 pins, socket, reverse key)

Power supply connector
(M12, 5 pins, plug)

BUS

PWR

59.8

63

Ground terminal

Position indicator LED

SI

64.4

78.9

Switch protective cover

EX250-SMJ2 (CC-Link)

Power supply connector
(M12, 5 pins, plug, reverse key)

PWR

59.8

63

Ground terminal

Position indicator LED   Switch protective cover

SI   CC-LINK

64.4

Max.118

Bus adapter

LINK IN
(M12, 4 pins, plug)

LINK OUT
(M12, 4 pins, socket)

EX250-SCA1A (CANopen)

Communication connector
(M12, 5 pins, plug)

Power supply connector
(M12, 5 pins, plug, reverse key)

BUS

PWR

59.8

63

Ground terminal

Position indicator LED

SI   CANopen

64.4

75.1

Switch protective cover

EX250-SEN1 (EtherNet/IP)

Communication connector
(M12, 4 pins, socket, Type D)

Power supply connector
(M12, 5 pins, plug)

BUS

PWR

59.8

63

Ground terminal

Position indicator LED

SI

64.4

78.9

Switch protective cover

AS-i
EX250-SAS7/9 (1 power supply system)

Communication connector
(M12, 4 pins, plug)

BUS

59.8

63

Position indicator LED

SI

64.4

75.1

Switch protective cover
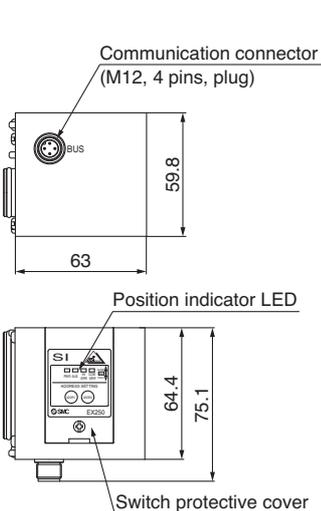
EX250-SAS3/5 (2 power supply system)

Communication connector
(M12, 4 pins, plug)

Connector for output device power supply
(M12, 4 pins, plug)

BUS

PWR

59.8

63

Ground terminal

Position indicator LED

SI

64.4

75.1

Switch protective cover

SMC
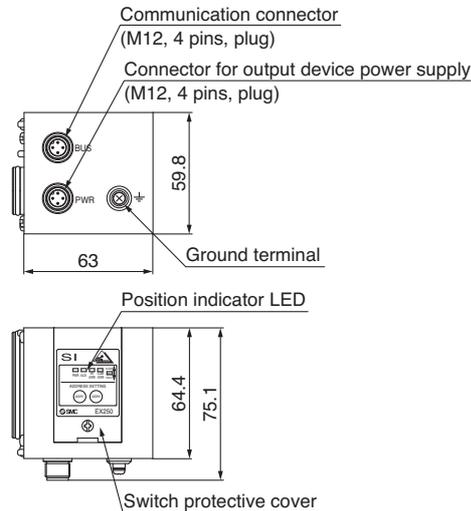
⚠ Specific Product Precautions

Be sure to read this before handling. Please consult with SMC for applications outside the specifications.

When one AS-i power supply system is used

⚠ Caution

	EX250-SAS7	EX250-SAS9
Power supply voltage	Supplied from AS-i circuit, 26.5 to 31.6 VDC [Note 1]	
Internal current consumption	Max. 100 mA	Max. 65 mA
Number of inputs	8	4
Number of outputs	8	4
Supply voltage	24 VDC	
Supply current [Note 2]	Max. 240 mA	Max. 120 mA

(The left column "Number of inputs / Number of outputs / Supply voltage / Supply current" is grouped under: Input/output specification)

Note 1) For communication power supply, use a power supply dedicated to AS-i. For details, please refer to instruction manuals provided by the respective manufacturers.

Note 2) The AS-i circuit provides current to the internal parts of the SI unit and all connected equipment.
Since there is a limit on the possible supply current to all connected equipment, select the equipment connected to the input/output device to stay within the possible supply current.

Example) When EX250-SAS9 is used

Valve: VQC1100NY – 5 (low-wattage type of 0.5 W) x 4 pcs.

0.5 [W] ÷ 24 [V] x 4 [pcs.] = 84 [mA] (4 outputs simultaneously ON)

The maximum possible supply current of EX250-SAS9 is 120 mA. Therefore, the possible supply current to the sensor is

120 [mA] – 84 [mA] = 36 [mA]

Use of low-wattage type valves by minimising the maximum number of simultaneous outputs, and low current consumption sensors (2-wire sensor, etc.) is recommended.

Maximum number of AS-i compatible input blocks

SI unit specifications		Input block type		Input block maximum stations
EX250-SAS3	AS-i 8in/8out 31SlaveMode, 2 power supply system	1	M12/2 inputs	4 stations
		2	M12/4 inputs	2 stations
		3	M8/4 inputs	2 stations
EX250-SAS5	AS-i 4in/4out 31SlaveMode, 2 power supply system	1	M12/2 inputs	2 stations
		2	M12/4 inputs	1 station
		3	M8/4 inputs	1 station
EX250-SAS7	AS-i 8in/8out 31SlaveMode, 1 power supply system	1	M12/2 inputs	4 stations
		2	M12/4 inputs	2 stations
		3	M8/4 inputs	2 stations
EX250-SAS9	AS-i 4in/4out 31SlaveMode, 1 power supply system	1	M12/2 inputs	2 stations
		2	M12/4 inputs	1 station
		3	M8/4 inputs	1 station

Input Block

Input block **Output block**

SI unit

Power block

Input block **Output block**

SI unit

How to Order Input Blocks
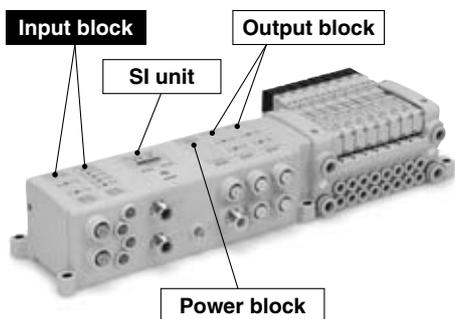
EX250－IE 1

● **Block type**

1	M12 connector, 2 inputs
2	M12 connector, 4 inputs
3	M8 connector, 4 inputs
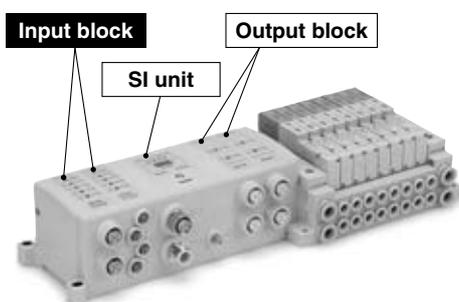
Input Block Specifications

Model		EX250-IE1	EX250-IE2	EX250-IE3
Input specification	**Input type**	PNP/NPN input (switched using a switch)		
	Number of inputs	2 points	4 points	
	Input device supply voltage	24 VDC		
	Input device supply current	Max. 30 mA/point Note 1)		
	Rated input current	Approx. 8 mA		
	Display	Green LED (Illuminated when the power supply for the SI unit input is applied), Yellow LED (Illuminated when the input signal is turned on.)		
	Connector on the input device side	M12 connector (4 pins, plug or 5 pins, plug)		M8 connector (3 pins, plug)
Environmental resistance	**Enclosure**	IP67		
	Operating temperature range	Operating: 5 to 45°C Stored: –20 to 60°C (with no freezing and condensation)		
	Operating humidity range	Operating, Stored: 35 to 85%RH (with no condensation)		
	Withstand voltage	500 VAC for 1 min. between whole charging part and case		
	Insulation resistance	10 MΩ or more (500 VDC Mega) between whole charging part and case		
	Vibration resistance	10 to 150 Hz with a 0.7 mm amplitude or 50 m/s^2 in each X, Y, Z direction for 2 hrs (De-energised)		
	Impact resistance	150 m/s^2, in each X, Y, Z direction, 3 times (De-energised)		
Standard		CE marking, UL (CSA)		
Weight		90 g		
Accessory	**Tie-rod** Note 2)	2 pcs.		

Note 1) When the maximum inputs for the SI unit is reached by adding an input block, pay attention not to exceed the supply current for the SI unit input.
Note 2) When an input block is integrated into a manifold, its tie-rods are also incorporated at the time of shipping.

SMC

Input Block Dimensions / Parts Description

EX250-IE1, EX250-IE2

Connector for
input device connection
(M12, 5 pins, socket)

59.8

21

Position
indicator LED

INPUT
PWR
0
1
2
3

SMC
EX250

EX250-IE2

72.6

21

Position indicator LED

INPUT
PWR
0
1

SMC
EX250

EX250-IE1

72.6

**Connector's pin assignment for the
input device connection
(M12, 5 pins, socket)**

Fuse Note)   NPN/PNP conversion switch

EX250-IE3

Connector for
input device connection
(M8, 3 pins, socket)

0
1
2
3

59.8

**Connector's pin assignment for the
input device connection
(M8, 3 pins, socket)**

21

Position indicator LED

INPUT
PWR
0
1
2
3

SMC
EX250

67.4

Note) Fuse for overcurrent protection.
When the fuse is blown, after addressing the
possible cause of the problem, it can be replaced
with a fuse as shown in options, page 19.

Fuse Note)   NPN/PNP conversion switch

Circuit diagram

+24 V
Fuse
Internal circuit
NPN
SW   PNP
0 V
E

Circuit diagram: EX250-IE1

+24 V
Fuse
Internal circuit
NPN
SW   PNP
0 V E

Circuit diagram: EX250-IE2

+24 V
Fuse
Internal circuit
NPN
SW   PNP
0 V

Circuit diagram: EX250-IE3

Series *EX250*

Options

Example of connections

Connection example of the SI unit compliant with DeviceNet

⑤ End plate (Input side)
⑦ Power block
⑥ Output block
SI unit
Input block
③ Waterproof cap
⑨ Power cable with connector
① Communication connector
② Power cable with connector (for SI unit)
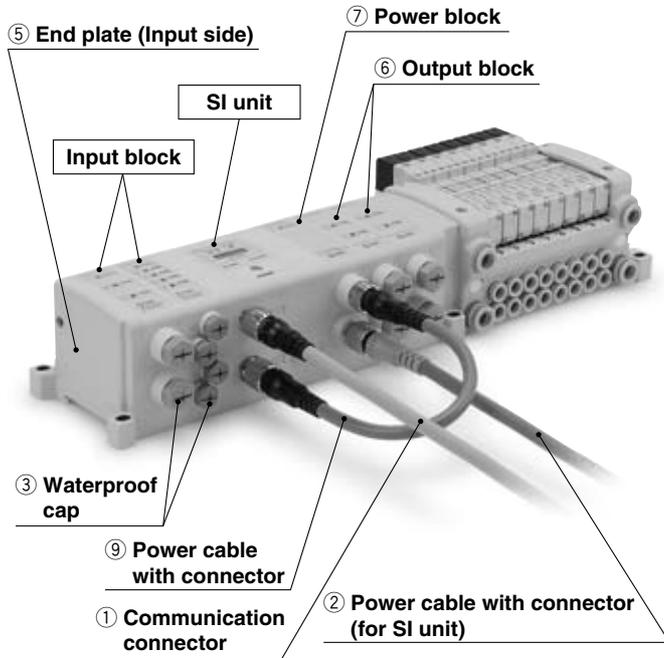
Connection example of the SI unit compliant with EtherNet/IP
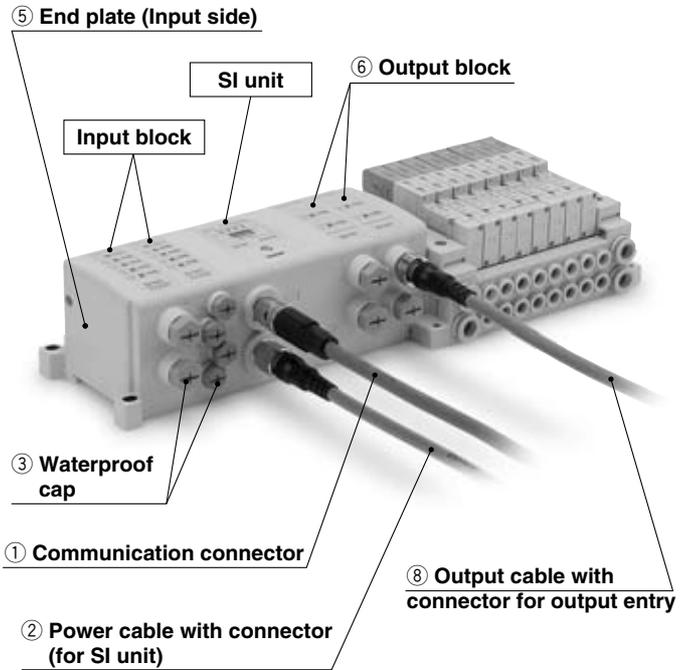
⑤ End plate (Input side)
SI unit
⑥ Output block
Input block
③ Waterproof cap
① Communication connector
② Power cable with connector (for SI unit)
⑧ Output cable with connector for output entry

Connection example of the SI unit compliant with AS-i

⑤ End plate (Input side)
⑦ Power block
SI unit
⑥ Output block
Input block
③ Waterproof cap
⑨ Power cable with connector
⑩ AS-i power supply cable
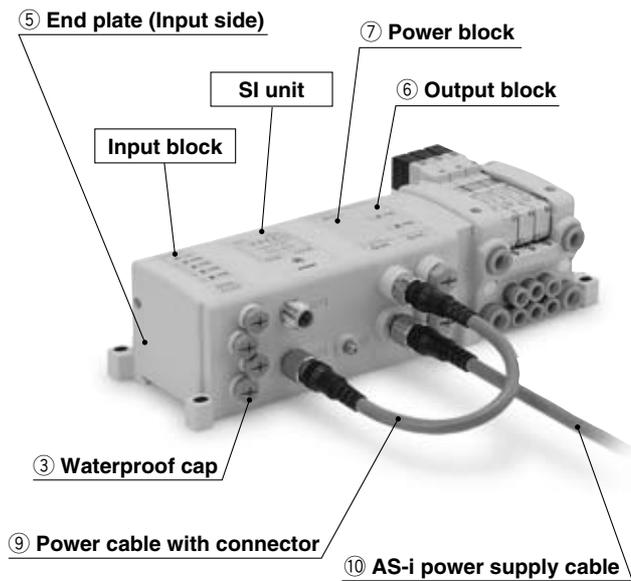
Connection example of the SI unit compliant with PROFIBUS-DP

⑦ Power block
⑥ Output block
⑤ End plate (Input side)
⑪ End plate (Output side)
SI unit
③ Waterproof cap
⑨ Power cable with connector
② Power cable with connector (for SI unit)

16

SMC
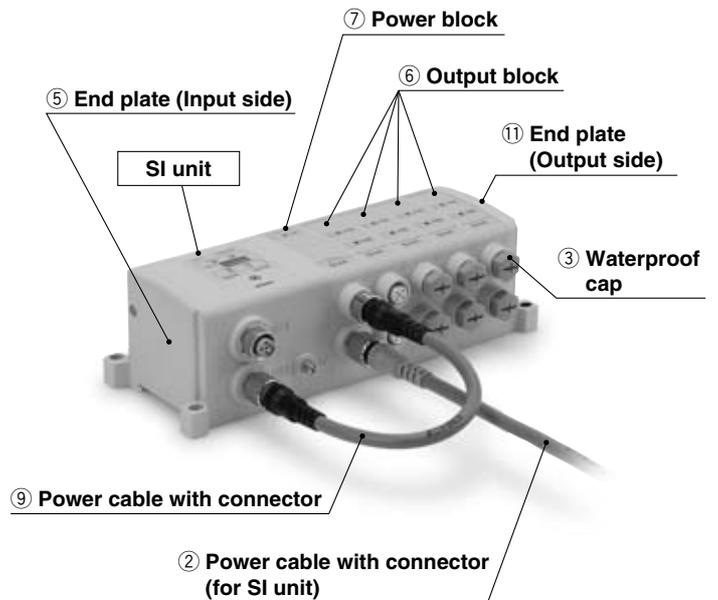
① **Communication connector**

For DeviceNet type SI unit

EX500−AC 050 −DN

Cable length (ℓ)

010	1000 [mm]
050	5000 [mm]

ø14.9 · ø7 · 40.7 · ℓ · 50 · M12

Terminal no. · **Core wire colours**

1	: DRAIN
2	Red: V+
3	Black: V−
4	White: CAN H
5	Blue: CAN L
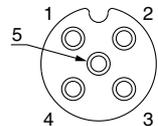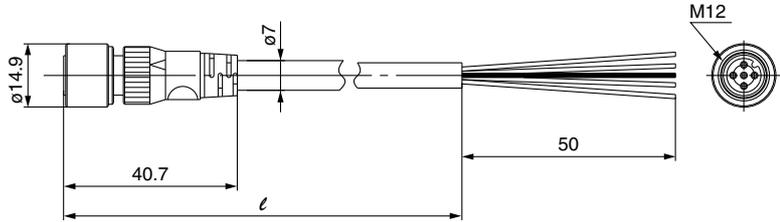
Socket connector pin arrangement
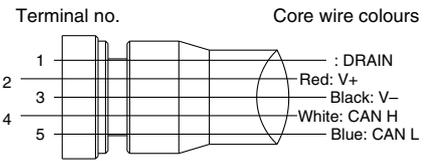
Connections

For EtherNet/IP type SI unit

EX9−AC 020 EN − PSRJ

Cable length (ℓ)

020	2000 [mm]

Connector specification

PSRJ	M12 plug (straight)⇔RJ-45 connector

RJ45 · ø6.7 · 47.3 · ℓ · 45 · M12

Plug connector pin arrangement

Terminal no. · **Terminal no.** · **Core wire colours**

1	1	White	Pair
2	2	Orange	
3	3	White	
4	4		
	5		Pair
	6	Green	
	7		
	8		

Shield
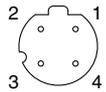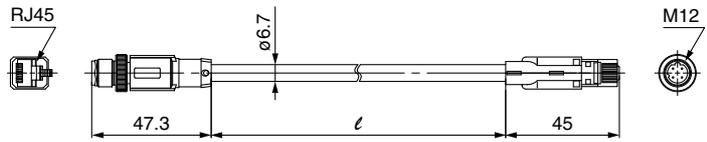
Plug connector pin arrangement
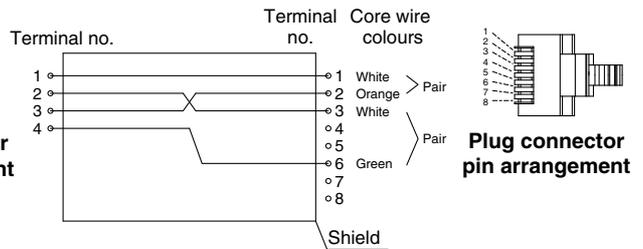
Connections (Straight cable)

Options

② **Power cable with connector (for SI unit)**

For PROFIBUS-DP, EtherNet/IP type SI unit

EX500－AP 050 －S

Cable length (ℓ)

010	1000 [mm]
050	5000 [mm]

M12

ø6

ø14.9

18
34
48
ℓ

30
5
50

Socket connector pin arrangement

5 1 2
4 3

Terminal no.

Core wire colours

1 — Brown: 24 VDC +10%/–5% (Solenoid valve power supply)
2 — White: 0 V (Solenoid valve power supply)
3 — Blue: 24 VDC 10% (Input and control power supply)
4 — Black: 0 V (Input and control power supply)
5 — Grey: PE

Connections
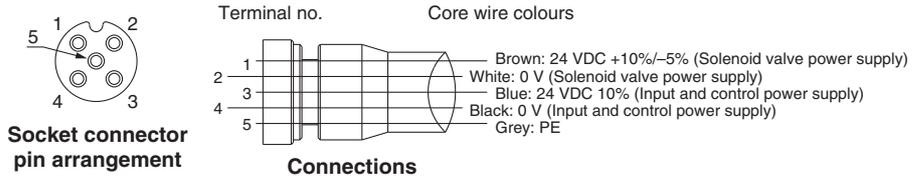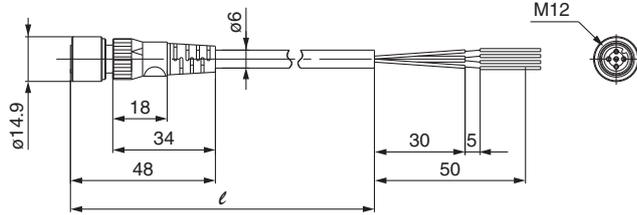
For the SI unit (except for PROFIBUS-DP, AS-i, EtherNet/IP) and power block

EX9－AC 050 －1

Cable length (ℓ)

010	1000 [mm]
030	3000 [mm]
050	5000 [mm]

ℓ

48.1

M12

ø6.4

30
5
50

Socket connector pin arrangement

5 1 2
4 3

Terminal no.

Core wire colours

1 — Brown: 24 VDC (Output power supply)
2 — White: 0 V (Output power supply)
3 — Blue: 24 VDC (Input and internal control power supply)
4 — Black: 0 V (Input and internal control power supply)
5 — Grey: PE

Connections
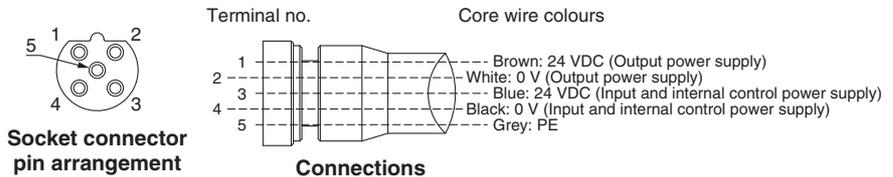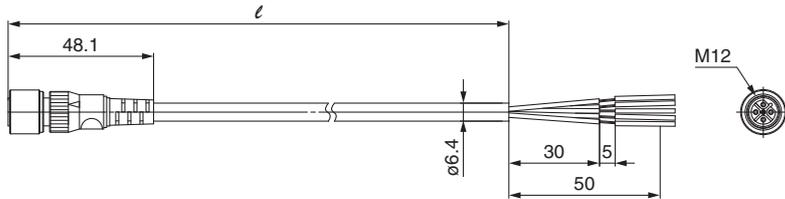
③ **Waterproof cap: M8, M12 connector (for socket)**

Use this on M8 and M12 connectors (socket) ports that are not being used.
Use of this waterproof cap maintains the integrity of the IP65 enclosure.
Note) Tighten the waterproof cap with the prescribed tightening torque. (For M8: 0.05 N•m, For M12: 0.1 N•m)

EX500－AW

Connector type

ES	M8 connector (for socket), 10 pcs.
TS	M12 connector (for socket), 10 pcs.

10.8
M8 x 1
6.6

14
M12 x 1
10.2

11

14
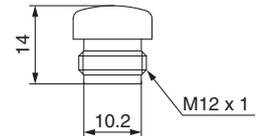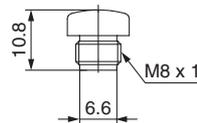
M8 connector (for socket)

M12 connector (for socket)

SMC
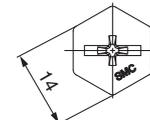
④ **Replacement fuse**

Replacement fuse for when the fuse in the input block (EX250-IE□) for overcurrent protection is blown.

EX9－FU05

Model	**EX9-FU05**
Applicable model	EX250-IE□
Rated current	0.5 A
Rated insulation capacity	48 VAC/DC 50 A
Fuse resistance value	0.36 Ω

Fuse
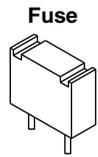
⑤ **End plate (Input side)**

EX250－EA 1

Mounting specification

1	Direct mounting
2	DIN rail mounting

Accessory
Hexagon socket head cap screw (M3 x 10): 2 pcs.

EX250-EA1

Mounting hole for 2-M4

EX250-EA2

M4 clamp screw
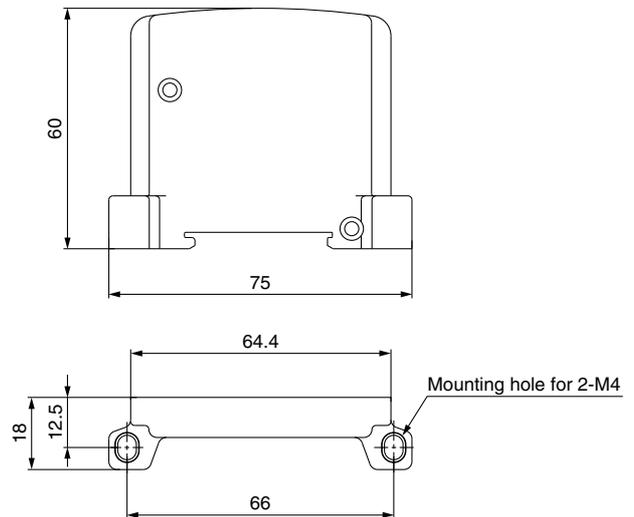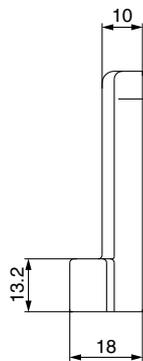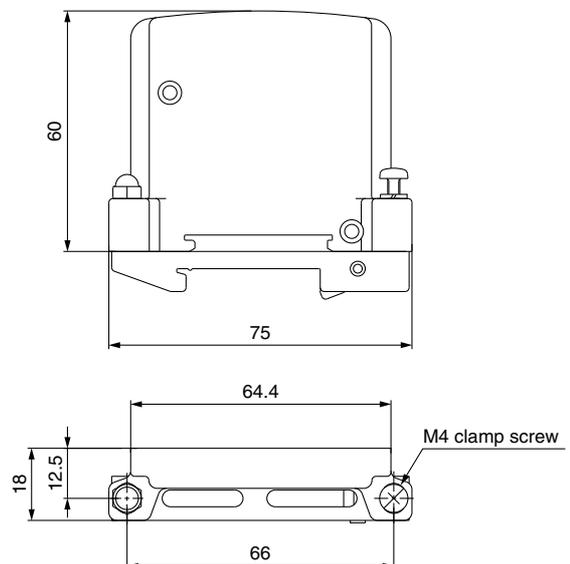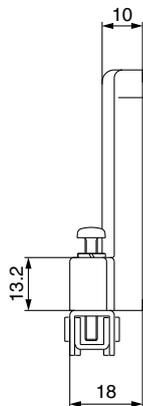
Options

⑥ Output block / ⑦ Power block

Features: · Able to retrofit to the valve manifold, using the unused points.
· 2-output (M12 connector)
· + common / – common are standardised.
· Able to drive by 0.5 A per point.

Output block   **Power block**

Input block
SI unit
Output block
Power block
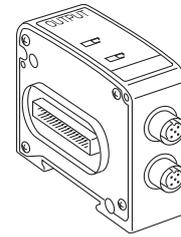
Input block
SI unit
Output block
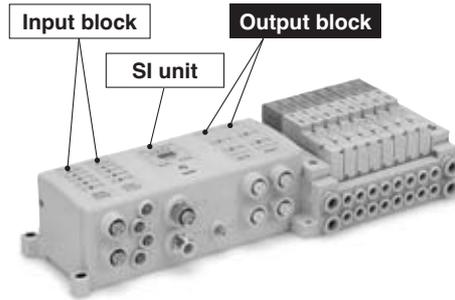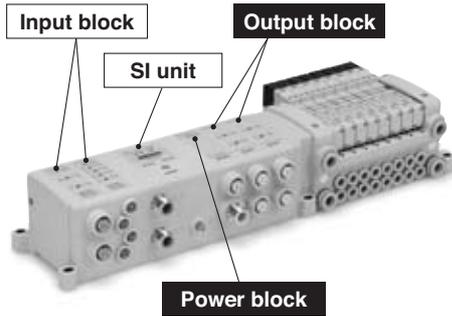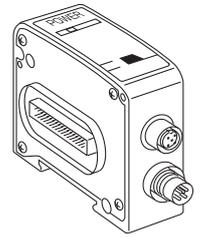
How to Order Output Block

EX9－OE⊤1

●**Output specification**

1	PNP output (–COM.)
2	NPN output (+COM.)

●**Power supply type**

T	Internal power supply method (for low-wattage load)
P	Integrated power supply method (for high-wattage load) Note)

Note) Required to connect with a power block.

SI Unit Part No.

SI unit part no.	Output	Applicable model
EX250-SDN1 **EX250-SPR1** **EX250-SAS□** **EX250-SCA1A** **EX250-SEN1**	–COM.	EX9-OET1 EX9-OEP1
EX250-SMJ2	+COM.	EX9-OET2 EX9-OEP2

Option/Part No.

Description	Part no.	Applicable model		Note
		OET□	OEP□	
Waterproof cap	**EX500-AWTS**	○	○	Refer to page 18. Order separately: 10 pcs. included
Cable with connector for output entry	**EX9-AC□-7**	○	○	Refer to page 23. Order separately.
Power block	**EX9-PE1**		○	Refer to page 20. Order separately.

How to Order Power Block

EX9－PE1

Option/Part No.

Description	Part no.	Note
Waterproof cap	**EX500-AWTS**	Refer to page 18. Order separately: 10 pcs. included
Power cable with connector	**EX9-AC□-1**	Refer to page 18, Order separately.
Cable with connector for between SI unit and power block	**EX9-AC002-2** **EX9-AC002-3** **EX9-AC002-4**	Refer to page 23, Order separately.
AS-i power supply cable	**EX9-AC□-5**	Refer to page 24, Order separately.

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Output Block Specifications

Model		EX9-OET1	EX9-OET2	EX9-OEP1	EX9-OEP2
Output connector		M12 connector (5 pins)			
Internal current consumption		40 mA or less			
Output specification	Output type	PNP output (–COM.)	NPN output (+COM.)	PNP output (–COM.)	NPN output (+COM.)
	Number of outputs	2 points			
	Power supply method	Internal power supply method		Integrated power supply method (Power block: supplied from EX9-PE1)	
	Output device supply voltage	24 VDC			
	Output device supply current	Max. 62 mA/point (1.5 W/point)		Max. 0.5 A/point (12 W/point)	
	Display	Yellow LED (Lights when power is turned ON.)			
	Connector on the output device side	M12 connector (5 pins, plug)			
Environmental resistance	Enclosure	IP67			
	Operating temperature range	Operating: 5 to 45°C Stored: –20 to 60°C (with no freezing and condensation)			
	Operating humidity range	Operating, Stored: 35 to 85%RH (with no condensation)			
	Withstand voltage	1500 VAC for 1 min. between whole charging part and case			
	Insulation resistance	10 MΩ or more (500 VDC Mega) between whole charging part and case			
	Vibration resistance	10 to 150 Hz with a 0.7 mm amplitude or 50 m/s^2 in each X, Y, Z direction for 2 hrs (De-energised)			
	Impact resistance	100 m/s^2 in each X, Y, Z direction, 3 times (De-energised)			
Standard		CE marking, UL (CSA)			
Weight		120 g			
Accessory	Tie-rod	2 pcs.			

Power Block Specifications

Model		EX9-PE1
Connection block		Output block (EX9-OEP□)
Connection block stations		Output block: Max. 9 stations (excluding input blocks) Note)
Power supply for output and internal control	Power supply voltage	22.8 to 26.4 VDC
	Internal power consumption	20 mA or less
Supply current		Max. 3.1 A (When using with 3.0 to 3.1 A, the ambient temperature should not exceed 40°C, and do not bundle the cable.)
Environmental resistance	Enclosure	IP67
	Operating temperature range	Operating: 5 to 45°C Stored: –20 to 60°C (with no freezing and condensation)
	Operating humidity range	Operating, Stored: 35 to 85%RH (with no condensation)
	Withstand voltage	1500 VAC for 1 min. between whole charging part and case
	Insulation resistance	10 MΩ or more (500 VDC Mega) between whole charging part and case
	Vibration resistance	10 to 150 Hz with a 0.7 mm amplitude or 50 m/s^2 in each X, Y, Z direction for 2 hrs (De-energised)
	Impact resistance	100 m/s^2 in each X, Y, Z direction, 3 times (De-energised)
Standard		CE marking, UL (CSA)
Weight		120 g
Accessory	Tie-rod	2 pcs.
	Waterproof cap (for M12 connector socket)	1 pc. (EX500-AWTS)

Note) The total number of connectable input/output/power block to the EX250 series SI unit (except for AS-i compliant) is 10 stations at the maximum.
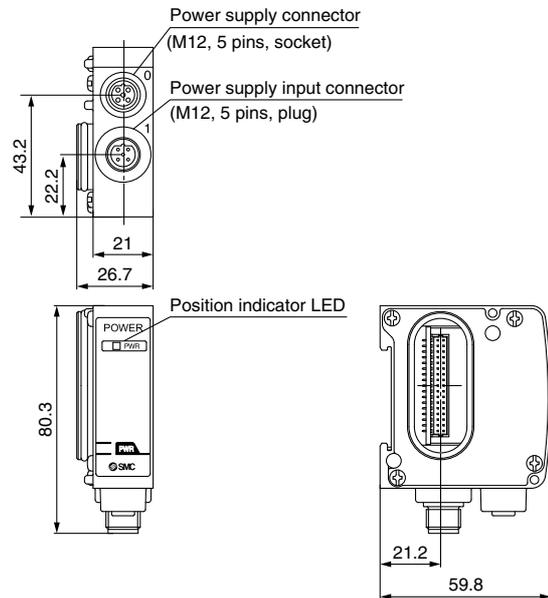
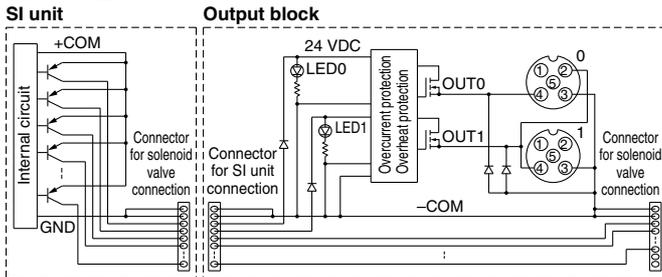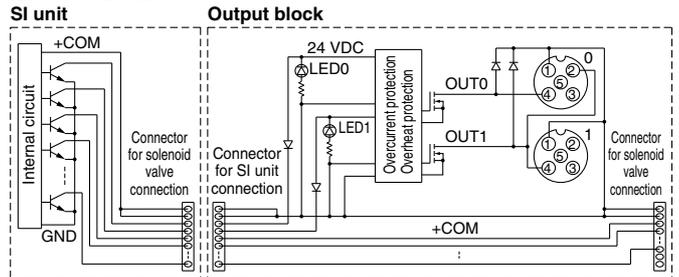# Series *EX250*

Options

Output Block Dimension

Connector for output device connection (M12, 5 pins, socket)

43.2
22.2
21
26.7

OUTPUT

Position indicator LED

72.6

21.2
59.8

Power Block Dimension

Power supply connector (M12, 5 pins, socket)

Power supply input connector (M12, 5 pins, plug)

43.2
22.2
21
26.7

POWER
PWR

Position indicator LED

80.3

PWR

21.2
59.8
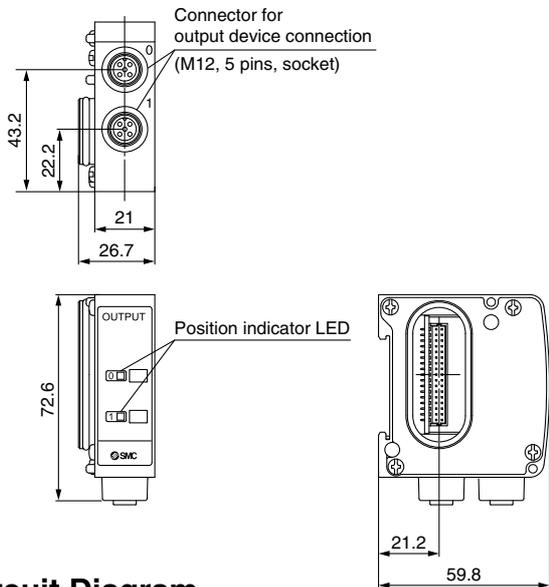
Circuit Diagram

EX9-OET1

EX9-OET2

EX9-OEP1
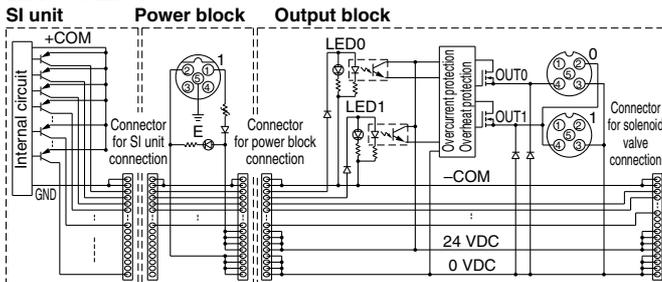
EX9-OEP2
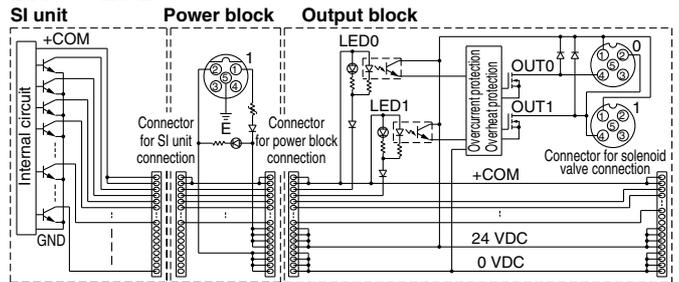
EX9-PE1
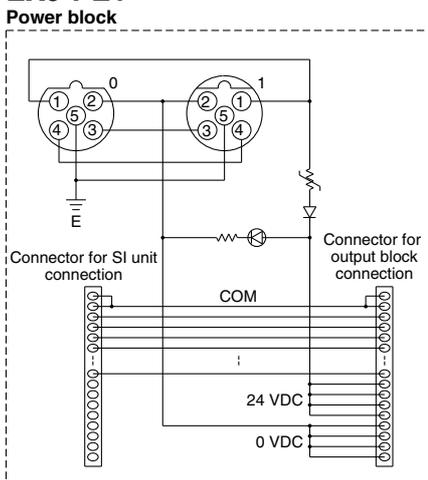
We sell this product individually. Please place an order separately. You are requested to connect it to an SI unit and a valve manifold. When using the output block only (valve manifold is unused.), place an order for an end plate (⑪ EX9-EA□) separately for connection.
Refer to the separate technical instruction manual for connection, wiring, installation, optional goods and cable, etc.

22

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⑧ **Output cable with connector**

EX9－AC 030 －7

Cable length (ℓ)

010	1000 [mm]
030	3000 [mm]

M12

Plug connector pin arrangement

Terminal no.	Core wire colours
1	Brown
2	White
3	Blue
4	Black
5	Gray
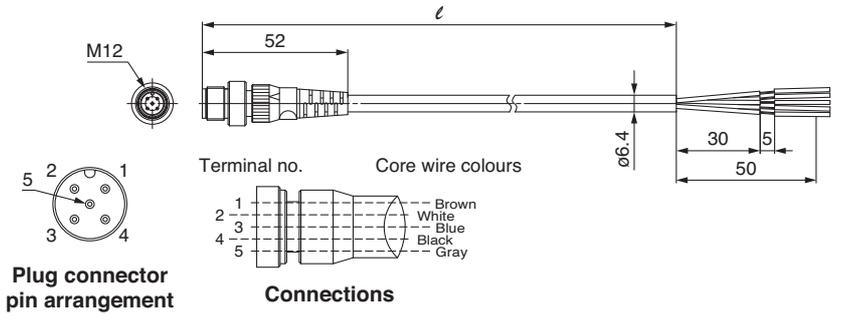
Connections

Note) Wiring to the output devices differs depending on the output style of the output block.
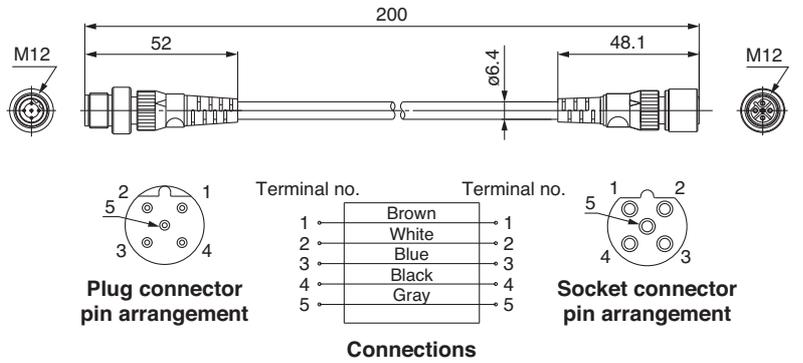For details, please refer to the technical documentation for the output block.

⑨ **Power cable with connector**

Connects between the power supply connector for the power block and the SI unit power supply connector, bridging the external power supply, which is supplied with the power block, to the SI unit.
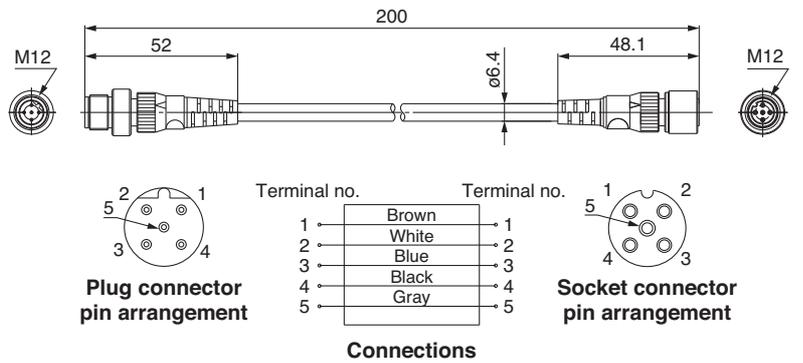
EX9－AC002－2

SI unit type

2	EX250-SDN1 EX250-SMJ2 EX250-SCA1A	Compliant
3	EX250-SPR1 EX250-SEN1	Compliant
4	EX250-SAS3/5	Compliant

EX9-AC002-2

M12

Plug connector pin arrangement

Terminal no.		Terminal no.
1	Brown	1
2	White	2
3	Blue	3
4	Black	4
5	Gray	5

Socket connector pin arrangement

Connections

EX9-AC002-3

M12

Plug connector pin arrangement

Terminal no.		Terminal no.
1	Brown	1
2	White	2
3	Blue	3
4	Black	4
5	Gray	5

Socket connector pin arrangement

Connections

EX9-AC002-4

M12

Plug connector pin arrangement

Terminal no.		Terminal no.
1	Brown	1
2	White	2
3		3
4		4
5		

Socket connector pin arrangement
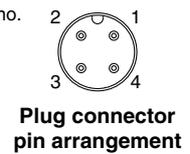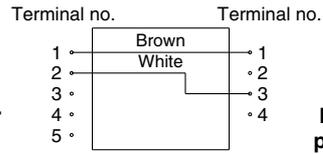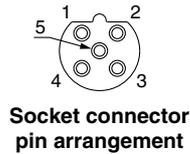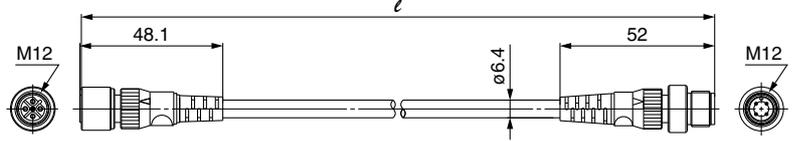
Connections

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23

Options

⑩ AS-i power cable

Cable connecting between AS-i power supply line (for external devices) branch connector (M12) and the power block's power supply input connector.

EX9－AC 010 －5

Cable length (ℓ)

010	1000 [mm]
030	3000 [mm]
050	5000 [mm]

M12 · 48.1 · ℓ · ø6.4 · 52 · M12

Socket connector pin arrangement

```
5   1   2
      4   3
```

Terminal no.			Terminal no.
1	Brown		1
2	White		2
3			3
4			4
5			

Connections

Plug connector pin arrangement

```
2   1
3   4
```

⑪ End plate (Output side)

The plate connected on the output block side in order to connect or fix between the SI unit and the input/output/power block when the valve manifold is not used.
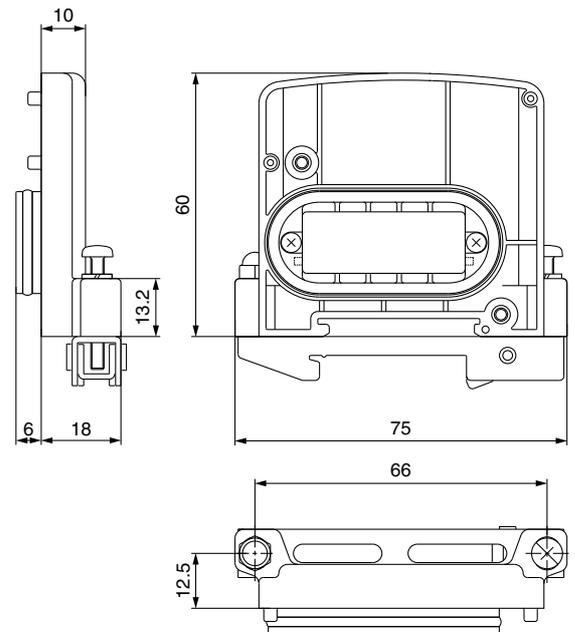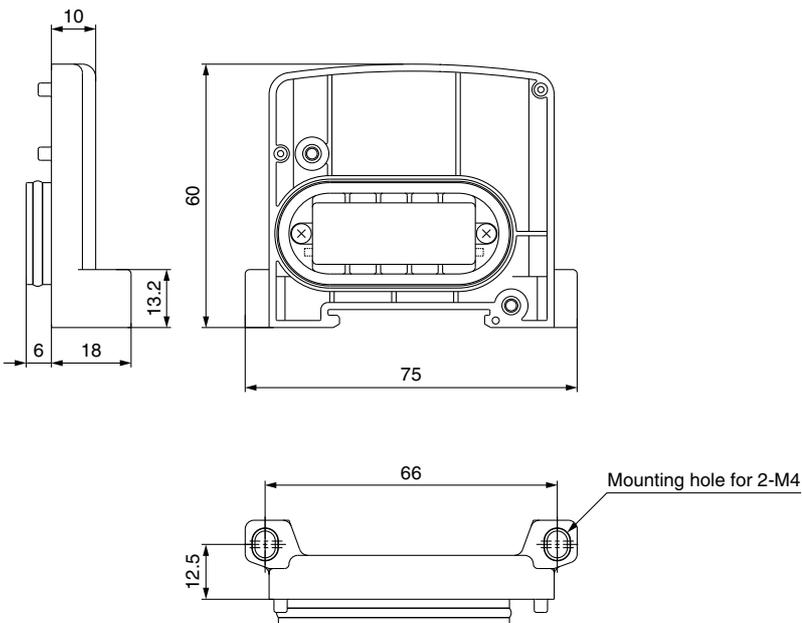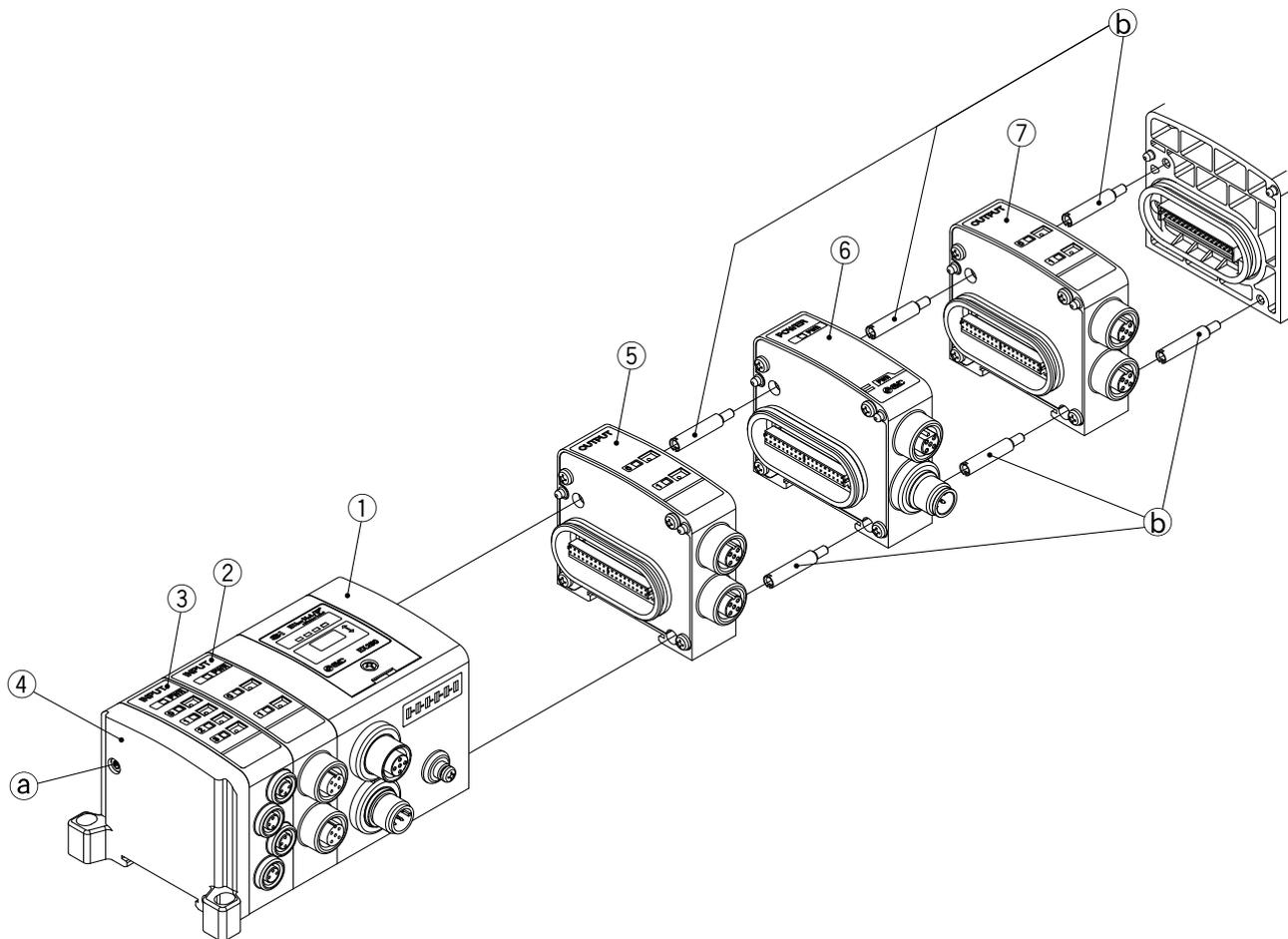
EX9－EA 03

Mounting specification

03	Direct mounting
04	DIN rail mounting

EX9-EA03

10 · 60 · 13.2 · 6 · 18 · 75 · 66 · 12.5 · Mounting hole for 2-M4

EX9-EA04

10 · 60 · 13.2 · 6 · 18 · 75 · 66 · 12.5

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How to Increase Input/Output Blocks, Procedure Drawing

Parts List

No.	Description	Part no.	Note
1	SI unit	**EX250-S□**	For details, refer to page 10.
2	Input block (M12, 2 inputs)	**EX250-IE1**	PNP/NPN switchable
3	Input block (M8, 4 inputs)	**EX250-IE3**	PNP/NPN switchable
4	End plate (Input side)	**EX250-EA1**	EA2: DIN rail mounting
5	Output block (For low-wattage load)	**EX9-OET□**	1: PNP output, 2: NPN output
6	Power block	**EX9-PE1**	For EX9-OEP□
7	Output block (For high-wattage load)	**EX9-OEP□**	1: PNP output, 2: NPN output

How to increase the input block, and output block (power block)

① Loosen the hexagon socket head cap screws ⓐ (2 locations) which are fixing the end plate of the valve manifold.
② Separate the section to be installed additionally.
③ Add and increase the attached tie-rod ⓑ (2 pcs per block) to the increased block respectively and pass through a block by the tie-rod.

> Increased section: Input block ··················· Between the left side of the SI unit and the end plate
> Output (power) block ······· Between the right side of the SI unit and the valve

④ Fix by loosening the hexagon socket head cap screw ⓐ, paying attention to avoid the gap between eack block.

∗ In the case of the DIN rail manifold, prepare the DIN rail long enough to ensure the extended length, because the length of the manifold is increased by a 21 mm per block addition. Please contact SMC for the DIN rail's part number and its specifications.

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