Fieldbus System
(Output device for driving 5-port solenoid valves)

Space-saving installation
Compact
Approx. 28 mm
Actual size

- IP67
  - For units with a D-sub connector, and when connected to S0700 manifolds, it is IP40.
- Drives up to 32 solenoids
- Daisy-chain wiring communication
  - Excludes the units compatible with IO-Link

- Can be connected using a single cable
- Various types of diagnostic tests can be performed using service data.

<Compatible Protocols>

<table>
<thead>
<tr>
<th>Protocol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DeviceNet</td>
<td>Can be connected using a single cable</td>
</tr>
<tr>
<td>CC-Link</td>
<td>Various types of diagnostic tests can be performed using service data.</td>
</tr>
<tr>
<td>IO-Link</td>
<td></td>
</tr>
<tr>
<td>PROFINET</td>
<td></td>
</tr>
<tr>
<td>EtherCAT</td>
<td></td>
</tr>
<tr>
<td>PROFINET / IP</td>
<td></td>
</tr>
<tr>
<td>ETHERCAT / POWERLINK</td>
<td></td>
</tr>
</tbody>
</table>

New **IO-Link** compatible products have been added.
- Can be connected using a single cable
- Various types of diagnostic tests can be performed using service data.

<table>
<thead>
<tr>
<th>Diagnostic contents</th>
<th>Internal failure of the SI unit</th>
<th>Output short circuit</th>
<th>Output open circuit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Solenoid valve power supply failure</td>
<td>Abnormal internal temperature of the SI unit</td>
<td>Output switching count value exceeded</td>
</tr>
</tbody>
</table>

EX260 Series
Manifold length reduced by approx. 53 mm

Wiring and piping from the same direction is possible.
(for side ported)

Daisy-chain wiring communication is possible.
A branch connector is not necessary/Reduced wiring space

An external terminating resistor is not necessary.
(Only available for M12 PROFIBUS DP, CC-Link communication connectors)

ON/OFF switching is possible with an internal terminating resistor.
An external terminating resistor is not necessary.
**Product Specification Variations**

<table>
<thead>
<tr>
<th>Number of outputs</th>
<th>DeviceNet</th>
<th>CC-Link</th>
<th>EtherNet/IP</th>
<th>EtherCAT</th>
<th>WIN-Link</th>
<th>IO-Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output polarity</td>
<td>PNP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NPN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication connector</td>
<td>M12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D-sub</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Applicable manifold**

- JSY Series
- SY Series
- SV Series
- VQC Series
- S0700 Series

**Communication connector examples**

- M12 communication connector x 2
  (For daisy-chain wiring)

- M12 communication connector x 1
  (Same for the solenoid valve power supply wiring)

- D-sub communication connector

**Applicable Valve Series**

<table>
<thead>
<tr>
<th>Series</th>
<th>Flow rate characteristics (4/2 → 5/3)</th>
<th>Maximum number of solenoids</th>
<th>Power consumption [W]</th>
<th>Applicable cylinder size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY3000</td>
<td>1.6</td>
<td>32</td>
<td>0.35 (Standard)</td>
<td>ø50</td>
</tr>
<tr>
<td>SY5000</td>
<td>3.6</td>
<td>32</td>
<td>0.1 (With power-saving circuit)</td>
<td>ø63</td>
</tr>
<tr>
<td>SY7000</td>
<td>5.9</td>
<td></td>
<td>0.2</td>
<td>ø80</td>
</tr>
<tr>
<td>JSY1000</td>
<td>0.91</td>
<td>32</td>
<td>0.2</td>
<td>ø40</td>
</tr>
<tr>
<td>JSY3000</td>
<td>2.77</td>
<td></td>
<td>0.4</td>
<td>ø50</td>
</tr>
<tr>
<td>JSY5000</td>
<td>6.59</td>
<td></td>
<td>0.2</td>
<td>ø80</td>
</tr>
<tr>
<td>S0700*2</td>
<td>0.37</td>
<td>32</td>
<td>0.35</td>
<td>ø25</td>
</tr>
<tr>
<td>SV1000*2</td>
<td>1.1</td>
<td>32</td>
<td>0.6</td>
<td>ø40</td>
</tr>
<tr>
<td>SV2000*2</td>
<td>2.4</td>
<td></td>
<td>0.35</td>
<td>ø63</td>
</tr>
<tr>
<td>SV3000*2</td>
<td>4.3</td>
<td></td>
<td>0.1</td>
<td>ø80</td>
</tr>
<tr>
<td>VQC1000</td>
<td>1.0</td>
<td>24</td>
<td>0.4</td>
<td>ø40</td>
</tr>
<tr>
<td>VQC2000</td>
<td>3.2</td>
<td></td>
<td>0.6</td>
<td>ø63</td>
</tr>
<tr>
<td>VQC4000</td>
<td>7.3</td>
<td></td>
<td>0.95</td>
<td>ø160</td>
</tr>
<tr>
<td>VQC5000</td>
<td>17</td>
<td></td>
<td>0.4</td>
<td>ø180</td>
</tr>
</tbody>
</table>

*1 Units with a D-sub communication connector are IP40.
*2 There is no manifold part number setting for the IO-Link compatible units.
*3 IP40 for the JSY1000

---

**Fieldbus System (Output device for driving 5-port solenoid valves) EX260 Series**
New IO-Link compatible

Integratable with various existing networks

IO-Link devices can be easily connected to various networks via the IO-Link master, which acts as a gateway between IO-Link communication and various Fieldbusses. Solenoid valves can be connected for communication without relying upon a Fieldbus or PLC.

Can be connected using a single general-purpose cable, resulting in a reduction in the space required for wiring

- Connect the IO-Link master port to the device using a 1:1 configuration.
- Connect using an M12 round connector.
- Maximum cable length: 20 m
- Special communication cables are not necessary.
- In order to connect the SI unit using a single cable, use a port class B type IO-Link master.

<table>
<thead>
<tr>
<th>Pin no.</th>
<th>SI unit port pin function (Port class B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+24 V for control unit</td>
</tr>
<tr>
<td>2</td>
<td>+24 V for solenoid valve</td>
</tr>
<tr>
<td>3</td>
<td>0 V for control unit</td>
</tr>
<tr>
<td>4</td>
<td>IO-Link communication</td>
</tr>
<tr>
<td>5</td>
<td>0 V for solenoid valve</td>
</tr>
</tbody>
</table>

Port class B compliant

General-purpose 5-wire unshielded cables are used for connection. The signal wire and valve power supply wire can be connected with the same cable.

Difference between IO-Link master port class A and class B

<table>
<thead>
<tr>
<th>Pin no.</th>
<th>IO-Link master port pin function</th>
<th>Port class A</th>
<th>Port class B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+24 V</td>
<td>+24 V</td>
<td>+24 V</td>
</tr>
<tr>
<td>2</td>
<td>NC/DI/DO</td>
<td>Additional power supply +24 V</td>
<td>Additional power supply +24 V</td>
</tr>
<tr>
<td>3</td>
<td>0 V</td>
<td>0 V</td>
<td>0 V</td>
</tr>
<tr>
<td>4</td>
<td>IO-Link/DI/DO</td>
<td>IO-Link/DI/DO</td>
<td>IO-Link/DI/DO</td>
</tr>
<tr>
<td>5</td>
<td>NC</td>
<td>Additional power supply 0 V</td>
<td>Additional power supply 0 V</td>
</tr>
</tbody>
</table>

A special wiring Y branch connector is available.

Used when connecting to a port class A type IO-Link master, which is often used when connecting to an IO-Link sensor.
**New IO-Link compatible**

Features an impressive self-diagnosis function

<table>
<thead>
<tr>
<th>Self-diagnosis contents</th>
<th>Diagnostic contents</th>
<th>Event category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal failure of the SI unit</td>
<td>Error</td>
<td></td>
</tr>
<tr>
<td>Output short circuit</td>
<td>Error</td>
<td></td>
</tr>
<tr>
<td>Output open circuit</td>
<td>Error</td>
<td></td>
</tr>
<tr>
<td>Solenoid valve power supply failure</td>
<td>Warning</td>
<td></td>
</tr>
<tr>
<td>Abnormal internal temperature of the SI unit</td>
<td>Warning</td>
<td></td>
</tr>
<tr>
<td>Output switching count value exceeded</td>
<td>Notification</td>
<td></td>
</tr>
</tbody>
</table>

**Equipped with a solenoid valve output operation count function**

The number of valve operation instructions is counted for each output of the solenoid valve.

Set the count threshold value to be used as a guide for maintenance according to the operating conditions of the cylinder connected to the solenoid valve.

Once the threshold value is reached, notification of this fact will take place automatically.

This enables periodic maintenance to be performed before any unexpected cylinder failures occur.
CONTENTS

Fieldbus System
(Output device for driving 5-port solenoid valves)
EX260 Series

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Parts Description .................................................. p. 9
LED Indicator ....................................................... p. 10

Accessories
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2 Field-wireable Communication Connector .......... p. 17
3 Power Supply Cable (For SI unit) ...................... p. 18
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5 Seal Cap (10 pcs.) .............................................. p. 19
6 Output Block .................................................... p. 20
7 Power Block ..................................................... p. 20
8 Connector for Output Block Wiring .................. p. 21
9 End Plate ......................................................... p. 21
10 Bracket Plate/DIN Rail Mounting Bracket ........ p. 21

Made to Order
SI Unit
EtherNet/IP™ Web server function compatible .... p. 22
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Power Supply Cable .......................................... p. 23

Specific Product Precautions ............................... p. 24
Fieldbus System
For Output
EX260 Series

Compact design
Compact design for space saving

Number of outputs
32/16 digital output type available for each unit in the series
(IO-Link is only compatible with the 32-point digital output type.)

Output polarity
Negative common (PNP)/positive common (NPN) type available for each unit in the series
(Only negative common (PNP) is available for units compatible with Ethernet POWERLINK and IO-Link.)

Enclosure
IP67 (For units with a D-sub connector, and when connected with S0700 manifolds, it is IP40.)

Internal terminating resistor
ON/OFF switching is possible with an internal terminating resistor for communication.
(Only for units compatible with M12 PROFIBUS DP, CC-Link communication connectors)

Applicable Manifold

SY3000/5000/7000  JSY1000/3000/5000  VQC1000/2000/4000/5000  S0700  SV1000/2000/3000

Communication protocol

EX260 – S [PR1]

Communication protocol

For “How to Order Manifold Assembly,” refer to the Web Catalog of each valve.

Made to Order
p. 22

EtherNet/IP™ Web server function compatible

RoHS

* Only the SY and SV valves are UL-compliant.

*1 Enclosure is IP40 when the communication connector is D-sub.

* For “How to Order Manifold Assembly,” refer to the Web Catalog of each valve.

6
### Specifications

#### All SI Units Common Specifications

<table>
<thead>
<tr>
<th>Power supply for control</th>
<th>Power supply voltage</th>
<th>Internal current consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>21.6 to 26.4 VDC*1</td>
<td>100 mA or less</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power supply for output</th>
<th>Power supply voltage</th>
<th>Operating temperature range</th>
<th>Operating humidity range</th>
<th>Withstand voltage</th>
<th>Insulation resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>22.8 to 26.4 VDC</td>
<td>–10 to +50°C</td>
<td>35 to 85%RH (No condensation)</td>
<td>500 VAC for 1 minute between terminals and housing</td>
<td>10 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing</td>
</tr>
</tbody>
</table>

#### Standards

- CE marking (EMC directive/RoHS directive), UL (CSA) compliant
- EPSG DS 301
- Volume3 (Edition 1.5) Ver.1.10
- EPSG DS 301 Volume2 (Edition 1.17)
- PROFINET Specification Version 2.2
- PROFINET Specification Volume 2.2
- PROFINET Specification Volume 1 (Edition 3.5)
- PROFINET Specification Volume 3 (Edition 1.5)
- PROFINET Specification Volume 1 (Edition 3.18)
- PROFINET Specification Volume 2.2
- PROFINET Specification Volume 1.2.0
- PROFINET Specification Volume 1.1

#### Accessories

- Mounting screw: 2 pcs.
- Seal cap (for M12 connector socket): EX9-AWTS (1 pc.)

#### Model Specifications

**EX260-SDN1/3**
- **Model**: EX260-SDN1/3
- **Protocol**: DeviceNet™
- **Version**: Volume1 (Edition 3.5)
- **Configuration file**: CSP+ file
- **Number of outputs**: SPN2: 16 points
- **Load**: Solenoid valve with surge voltage suppressor 24 VDC, 1.0 W or less (SMC)
- **Supplied voltage**: 24 VDC

**EX260-SPR1/3**
- **Model**: EX260-SPR1/3
- **Protocol**: DeviceNet™
- **Version**: Volume2 (Edition 1.18)
- **Configuration file**: XDD file
- **Number of outputs**: SPR2: 32 points
- **Load**: Source/PNP (Positive common)
- **Supplied current**: SPR: Max. 2.0 A

**EX260-SEN1/3**
- **Model**: EX260-SEN1/3
- **Protocol**: Ethernet/IP™
- **Version**: Volume2 (Edition 1.18)
- **Configuration file**: CSP+ file
- **Number of outputs**: SEN1: 32 points
- **Load**: Sink/NPN (Negative common)
- **Supplied current**: SEN: Max. 2.0 A

**EX260-SEC1/3**
- **Model**: EX260-SEC1/3
- **Protocol**: COM3/COM2™
- **Version**: Volume3 (Edition 1.5)
- **Configuration file**: IODD file
- **Number of outputs**: SEC1: 16 points
- **Load**: Source/PNP (Positive common)
- **Supplied current**: SEC: Max. 1.0 A

---

*1 To serve as the power supply for communication, the power supply voltages are 11 to 25 VDC for the EX260-SDN1/3 and 18 to 30 VDC for the EX260-SIL1.
*2 IP40 applies to EX260-SPR5/6/7/8.
*3 Not provided for EX260-SPR5/6/7/8.

---

**Model Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>EX260-SDN1/3</th>
<th>EX260-SPR1/3</th>
<th>EX260-SEC1/3</th>
<th>EX260-SEN1/3</th>
<th>EX260-SIL1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Protocol</strong></td>
<td>DeviceNet™</td>
<td>DeviceNet™</td>
<td>DeviceNet™</td>
<td>DeviceNet™</td>
<td>DeviceNet™</td>
</tr>
<tr>
<td><strong>Version</strong></td>
<td>Volume1 (Edition 3.5)</td>
<td>Volume3 (Edition 1.5)</td>
<td>Volume3 (Edition 1.5)</td>
<td>Volume3 (Edition 1.5)</td>
<td>Volume3 (Edition 1.5)</td>
</tr>
<tr>
<td><strong>Configuration file</strong></td>
<td>CSP+ file</td>
<td>CSP+ file</td>
<td>CSP+ file</td>
<td>CSP+ file</td>
<td>CSP+ file</td>
</tr>
</tbody>
</table>

---

**EX260-SDN1/3**
- **Model**: EX260-SDN1/3
- **Protocol**: DeviceNet™
- **Version**: Volume1 (Edition 3.5)
- **Configuration file**: CSP+ file
- **Number of outputs**: SPN2: 16 points
- **Load**: Solenoid valve with surge voltage suppressor 24 VDC, 1.0 W or less (SMC)
- **Supplied voltage**: 24 VDC

**EX260-SPR1/3**
- **Model**: EX260-SPR1/3
- **Protocol**: DeviceNet™
- **Version**: Volume2 (Edition 1.18)
- **Configuration file**: XDD file
- **Number of outputs**: SPR2: 32 points
- **Load**: Source/PNP (Positive common)
- **Supplied current**: SPR: Max. 2.0 A

**EX260-SEC1/3**
- **Model**: EX260-SEC1/3
- **Protocol**: COM3/COM2™
- **Version**: Volume3 (Edition 1.5)
- **Configuration file**: IODD file
- **Number of outputs**: SEC1: 16 points
- **Load**: Source/PNP (Positive common)
- **Supplied current**: SEC: Max. 1.0 A

---

*1 Please note that the version is subject to change.
*2 Use a CAT5 or higher transmission cable for EtherCAT, PROFINET, Ethernet/IP™, and Ethernet POWERLINK.
*3 The configuration file can be downloaded from the SMC website, https://www.smcworld.com
*4 A selection can be made using the setting switch.
### Dimensions

**M12 communication connector type**

- For PROFIBUS DP
- For DeviceNet™
- For CC-Link
- For EtherCAT
- For PROFINET
- For EtherNet/IP™
- For Ethernet POWERLINK

**D-sub communication connector type**

(EX260-SPR5/6/7/8)

- For PROFIBUS DP

---

**M12 communication connector type**

- For IO-Link

---

---
The communication line, SI unit power supply line, and the solenoid valve power supply line are connected using the same cable.

**Part no.** EX260-SIL1

**Communication protocol** IO-Link

**Communication/ Power connector (M12)** 5 pins, plug, A code (SPEEDCON)

**Ground terminal** M3

* The setting switch varies depending on the model. Refer to the operation manual for details. It can be downloaded via the SMC website: https://www.smcworld.com

---

<Connector>

**M12 communication connector type**

| Part no.       | EX260-SPR1/-SPR2/-SPR3/-SPR4 | EX260-SDN | EX260-SMJ | EX260-SEC/-SPN/-SPR/-SPN | EX260-SEN/-SPR/-SPN | EX260-SPN | EX260-SEC
|----------------|-----------------------------|-----------|-----------|--------------------------|----------------------|-----------|-----------
| Communication protocol | PROFIBUS DP | DeviceNet™ | CC-Link | EtherCAT | PROFINET | EtherNet/IP™ | Ethernet POWERLINK
| Communication connector (M12) BUS OUT | 5 pins, socket, B code (SPEEDCON) | 5 pins, socket, A code (SPEEDCON) | 5 pins, socket, A code (SPEEDCON) | 4 pins, socket, D code (SPEEDCON) |
| Communication connector (M12) BUS IN | 5 pins, plug, B code (SPEEDCON) | 5 pins, plug, A code (SPEEDCON) | 4 pins, plug, A code (SPEEDCON) | 4 pins, socket, D code (SPEEDCON) |
| Ground terminal | M3 | | | |
| Power connector (M12) | 5 pins, plug, A code (SPEEDCON) | 4 pins, plug, A code (SPEEDCON) | 5 pins, plug, A code (SPEEDCON) | 5 pins², 4 pins³, plug, A code (SPEEDCON) |

*1 Recommended mating M12 4-pin plug part no.: PCA-1567717

*2 For EtherCAT, PROFINET, and Ethernet POWERLINK

*3 For EtherNet/IP™

---

**D-sub communication connector type**

| Part no.       | EX260-SPR5/-SPR6/-SPR7/-SPR8 | EX260-SDN | EX260-SMJ | EX260-SEC/-SPN/-SPR/-SPN | EX260-SEN/-SPR/-SPN | EX260-SPN | EX260-SEC
|----------------|-----------------------------|-----------|-----------|--------------------------|----------------------|-----------|-----------
| Communication protocol | PROFIBUS DP | | | | | | |
| Ground terminal | M3 | | | | | | |
| Communication connector (D-sub) BUS IN/OUT | 9 pins, socket | | | | | | |
| Power connector (M12) | 5 pins, plug, A code | | | | | | |

---

**For IO-Link**

The setting switch varies depending on the model. Refer to the operation manual for details. It can be downloaded via the SMC website: https://www.smcworld.com
**LED Indicator**

**For DeviceNet™**
EX260-SDN

NS: Network state  
MS: SI unit state  
PWR: Power supply for control

**For EtherCAT**
EX260-SEC

L/A IN: BUS IN state  
L/A OUT: BUS OUT state

**For EtherNet/IP™**
EX260-SEN

L/A1: BUS IN state  
L/A2: BUS OUT state

**For CC-Link**
EX260-SMJ

L ERR: Communication error  
PWR: Power supply for control

**For PROFINET**
EX260-SPN

SF: SI unit diagnosis  
BF: Communication state

**For PROFIBUS DP**
EX260-SPR

SF: System fault  
PWR: Power supply for solenoid valve

**For Ethernet POWERLINK**
EX260-SPL

L/A 1: BUS IN state  
L/A 2: BUS OUT state

**For IO-Link**
EX260-SIL1

COM: Network state  
PWR: Power supply for solenoid valve

---

**EX260 Series**

Fieldbus System  
For Output
## Communication Cable

### For CC-Link

**PCA-1567720**  
(Socket)  
- Socket connector pin arrangement  
  - A-coded (Normal key)  
  - +1 Number of holes: 5, Total number of pins: 4

**PCA-1567717**  
(Plug)  
- Plug connector pin arrangement  
  - A-coded (Normal key)  
  - +1 Number of holes: 5, Total number of pins: 4

### EX9-AC 005 MJ-SSPS  (With connector on both sides (Socket/Plug))

<table>
<thead>
<tr>
<th>Cable length (L)</th>
</tr>
</thead>
</table>
| 005 | 500 mm  
| 010 | 1000 mm  
| 020 | 2000 mm  
| 030 | 3000 mm  
| 050 | 5000 mm  
| 100 | 10000 mm  

### EX9-AC 005 MJ-SAPA  (With angled connector on both sides (Socket/Plug))

<table>
<thead>
<tr>
<th>Cable length (L)</th>
</tr>
</thead>
</table>
| 005 | 500 mm  
| 010 | 1000 mm  
| 020 | 2000 mm  
| 030 | 3000 mm  
| 050 | 5000 mm  
| 100 | 10000 mm  

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
</table>
| Cable O.D. | ø7.7 mm  
| Conductor nominal cross section |  
| Data (Pair) | 0.5 mm²/AWG20  
| Drain | 0.34 mm²/AWG22  
| Wire O.D. (Including insulator) | 2.55 mm  
| Min. bending radius (Fixed) | 77 mm  

### Item Specifications

- **Cable O.D.:** ø7.7 mm  
- **Conductor nominal cross section:**  
  - Data (Pair): 0.5 mm²/AWG20  
  - Drain: 0.34 mm²/AWG22  
- **Wire O.D. (Including insulator):** 2.55 mm  
- **Min. bending radius (Fixed):** 77 mm  

---

**EX260 Series**  
**Accessories**
**Communication Cable**

For DeviceNet™

**PCA-1557633**  
(Socket)

**PCA-1557646**  
(Plug)

---

**Made to Order**

Cable length 10000 mm  p. 22

---

**EX9-AC 005 DN-SSPS**  
(With connector on both sides (Socket/Plug))

- **Cable length (L)**
  - 005  500 mm
  - 010  1000 mm
  - 020  2000 mm
  - 030  3000 mm
  - 050  5000 mm
  - 100  10000 mm

---

**Item**  
<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
</tr>
<tr>
<td>Conductor nominal cross section</td>
</tr>
<tr>
<td>Wire O.D. (Including insulator)</td>
</tr>
<tr>
<td>Min. bending radius (Fixed)</td>
</tr>
</tbody>
</table>

---

**EX9-AC 005 DN-SAPA**  
(With angled connector on both sides (Socket/Plug))

- **Cable length (L)**
  - 005  500 mm
  - 010  1000 mm
  - 020  2000 mm
  - 030  3000 mm
  - 050  5000 mm
  - 100  10000 mm

---

**Item**  
<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
</tr>
<tr>
<td>Conductor nominal cross section</td>
</tr>
<tr>
<td>Wire O.D. (Including insulator)</td>
</tr>
<tr>
<td>Min. bending radius (Fixed)</td>
</tr>
</tbody>
</table>
**EX260 Series**

### Communication Cable

**For PROFIBUS DP**

**PCA-1557688** (Socket)

**PCA-1557691** (Plug)

---

**For EtherCAT**  **For PROFINET**  **For EtherNet/IP™**  **For Ethernet POWERLINK**

**EX9-AC 020 EN-PSRJ** (Plug/RJ-45 connector)

---

**PCA-1446566** (Plug)

---

**Item Specifications**

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>Ø7.8 mm</td>
</tr>
<tr>
<td>Conductor nominal cross section</td>
<td>0.34 mm²/AWG22</td>
</tr>
<tr>
<td>Wire O.D. (including insulator)</td>
<td>2.55 mm</td>
</tr>
<tr>
<td>Min. bending radius (Fixed)</td>
<td>78 mm</td>
</tr>
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</table>

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**Item Specifications**

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
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</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>Ø6.4 mm</td>
</tr>
<tr>
<td>Conductor nominal cross section</td>
<td>0.14 mm²/AWG26</td>
</tr>
<tr>
<td>Wire O.D. (including insulator)</td>
<td>0.98 mm</td>
</tr>
<tr>
<td>Min. bending radius (Fixed)</td>
<td>26 mm</td>
</tr>
</tbody>
</table>

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**Item Specifications**

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>Ø6.5 mm</td>
</tr>
<tr>
<td>Conductor nominal cross section</td>
<td>0.34 mm²/AWG22</td>
</tr>
<tr>
<td>Wire O.D. (including insulator)</td>
<td>1.55 mm</td>
</tr>
<tr>
<td>Min. bending radius (Fixed)</td>
<td>19.5 mm</td>
</tr>
</tbody>
</table>
EX9-AC 005 EN-PSPS (With connector on both sides (Plug/Plug))

- **Cable length (L)**
  - 005 500 mm
  - 010 1000 mm
  - 020 2000 mm
  - 030 3000 mm
  - 050 5000 mm
  - 100 10000 mm

EX9-AC 005 EN-PAPA (With angled connector on both sides (Plug/Plug))

- **Cable length (L)**
  - 005 500 mm
  - 010 1000 mm
  - 020 2000 mm
  - 030 3000 mm
  - 050 5000 mm
  - 100 10000 mm

---

### Item Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>ø6.5 mm</td>
</tr>
<tr>
<td>Conductor nominal cross section</td>
<td>0.34 mm²/AWG22</td>
</tr>
<tr>
<td>Wire O.D. (Including insulator)</td>
<td>1.55 mm</td>
</tr>
<tr>
<td>Min. bending radius (Fixed)</td>
<td>19.5 mm</td>
</tr>
</tbody>
</table>

---

**For EtherCAT | For PROFINET | For EtherNet/IP™ | For Ethernet POWERLINK**
EX260 Series

1. Communication Cable

For IO-Link

Example of Connection

Port class B
IO-Link master (Commercially available)

Communication cable

Port class A
IO-Link master (Commercially available)

Communication cable

Y branch connector

Communication cable

Port class B
SI unit

Terminal block wiring type

Port class A
IO-Link master (Commercially available)

Communication cable

Communication cable

Port class B
SI unit

1. Communication Cable

EX9-AC 005-SSPS (With connector on both sides (Socket/Plug))

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>005 500 mm</td>
<td>Cable O.D. ø6 mm</td>
</tr>
<tr>
<td>010 1000 mm</td>
<td>Conductor nominal cross section 0.3 mm²/AWG22</td>
</tr>
<tr>
<td>020 2000 mm</td>
<td>Wire O.D. (Including conductor) 1.5 mm</td>
</tr>
<tr>
<td>030 3000 mm</td>
<td>Min. bending radius (Fixed) 40 mm</td>
</tr>
<tr>
<td>050 5000 mm</td>
<td></td>
</tr>
<tr>
<td>100 10000 mm</td>
<td></td>
</tr>
</tbody>
</table>

EX9-AC 005-SAPA (With connector on both sides (Socket/Plug))

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>005 500 mm</td>
<td>Cable O.D. ø6 mm</td>
</tr>
<tr>
<td>010 1000 mm</td>
<td>Conductor nominal cross section 0.3 mm²/AWG22</td>
</tr>
<tr>
<td>020 2000 mm</td>
<td>Wire O.D. (Including conductor) 1.5 mm</td>
</tr>
<tr>
<td>030 3000 mm</td>
<td>Min. bending radius (Fixed) 40 mm</td>
</tr>
<tr>
<td>050 5000 mm</td>
<td></td>
</tr>
<tr>
<td>100 10000 mm</td>
<td></td>
</tr>
</tbody>
</table>
Communication Cable

For IO-Link

Y branch connector

This connector is used to supply power to the valve manifold by branching the IO-Link communication cable in cases where a port class A IO-Link master is used.

EX9-ACY02-S

Solenoid valve power supply cable side pin arrangement when using a branch connector

1 — Unused
2 SV24 V For solenoid valve
3 — Unused
4 — Unused
5 SV0 V 0 V for solenoid valve

Communication cable

EX500-AP 050 - S

Connector specification

Straight connector type

Socket connector pin arrangement A-coded (Normal key)

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>ø6 mm</td>
</tr>
<tr>
<td>Conductor nominal cross section</td>
<td>0.3 mm²/AWG22</td>
</tr>
<tr>
<td>Wire O.D. (Including insulator)</td>
<td>1.5 mm</td>
</tr>
<tr>
<td>Min. bending radius (Fixed)</td>
<td>40 mm</td>
</tr>
</tbody>
</table>

Angled connector type

Socket connector pin arrangement A-coded (Normal key)

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>ø6 mm</td>
</tr>
<tr>
<td>Conductor nominal cross section</td>
<td>0.3 mm²/AWG22</td>
</tr>
<tr>
<td>Wire O.D. (Including insulator)</td>
<td>1.5 mm</td>
</tr>
<tr>
<td>Min. bending radius (Fixed)</td>
<td>40 mm</td>
</tr>
</tbody>
</table>

Made to Order

Cable length 10000 mm  p. 23

PCA- 1401804

Cable length (L)

| 1401804 | 1500 mm |
| 1401805 | 3000 mm |
| 1401806 | 5000 mm |

Solenoid valve power supply cable side pin arrangement when using a branch connector

1 — Unused
2 SV24 V For solenoid valve
3 — Unused
4 — Unused
5 SV0 V 0 V for solenoid valve

Connections (IO-Link)

1 When used as an IO-Link communication cable
2 When used as a solenoid valve power supply cable

Connections (IO-Link)

1 When used as an IO-Link communication cable
2 When used as a solenoid valve power supply cable
EX260 Series

Field-wireable Communication Connector

Plug

**For CC-Link**  **For DeviceNet™**  
PCA-1075526  PCA-1075528

![A-coded (Normal key)](image)

= 60

ø17.5

Width across flats 16

### Applicable Cable

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>4.0 to 8.0 mm</td>
</tr>
<tr>
<td>Wire gauge (Stranded wire cross section)</td>
<td>0.14 to 0.75 mm²/AWG26 to 18 (Solid cable/Flexible cable) 0.08 to 0.5 mm²/AWG28 to 20 (With ferrule)</td>
</tr>
</tbody>
</table>

- The table above shows the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

**For PROFIBUS DP**

PCA-1075530

![B-coded (Reverse key)](image)

= 60

ø17.5

Width across flats 16

**For EtherCAT**  **For PROFINET**  **For EtherNet/IP™**  **For Ethernet POWERLINK**

PCA-1446553

![D-coded](image)

= 61

ø17.75

Width across flats 13

### Applicable Cable

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>4.0 to 8.0 mm</td>
</tr>
<tr>
<td>Wire gauge (Stranded wire cross section)</td>
<td>0.14 to 0.75 mm²/AWG26 to 18 (Solid cable/Flexible cable) 0.08 to 0.5 mm²/AWG28 to 20 (With ferrule)</td>
</tr>
</tbody>
</table>

Socket

**For CC-Link**  **For DeviceNet™**  
PCA-1075527  PCA-1075529

![A-coded (Normal key)](image)

= 58

ø17.5

Width across flats 16

### Applicable Cable

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>4.0 to 8.0 mm</td>
</tr>
<tr>
<td>Wire gauge (Stranded wire cross section)</td>
<td>0.14 to 0.75 mm²/AWG26 to 18 (Solid cable/Flexible cable) 0.08 to 0.5 mm²/AWG28 to 20 (With ferrule)</td>
</tr>
</tbody>
</table>

**For PROFIBUS DP**

PCA-1075531

![B-coded (Reverse key)](image)

= 58

ø17.5

Width across flats 16

### Applicable Cable

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>4.0 to 8.0 mm</td>
</tr>
<tr>
<td>Wire gauge (Stranded wire cross section)</td>
<td>0.14 to 0.75 mm²/AWG26 to 18 (Solid cable/Flexible cable) 0.08 to 0.5 mm²/AWG28 to 20 (With ferrule)</td>
</tr>
</tbody>
</table>
Power Supply Cable (For SI unit)

For PROFINET
For DeviceNet™
For EtherCAT
For PROFINET
For EtherNet/IP™
For Ethernet POWERLINK

**EX500-AP 050 - S**

Cable length (L)  
- 010 1000 mm
- 050 5000 mm

**Connector specification**
- S Straight
- A Angled

**Straight connector type**

- Socket connector pin arrangement
  - A-coded

**Angled connector type**

- Socket connector pin arrangement
  - A-coded

### Item Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>ø6 mm</td>
</tr>
<tr>
<td>Conductor nominal cross section</td>
<td>0.3 mm²/AWG22</td>
</tr>
<tr>
<td>Wire O.D. (Including insulator)</td>
<td>1.5 mm</td>
</tr>
<tr>
<td>Min. bending radius (Fixed)</td>
<td>40 mm</td>
</tr>
</tbody>
</table>

**Terminals**

**Core wire color**
- Brown: 24 VDC ±10%/–5% (Solenoid valve power supply)
- White: 0 V (Solenoid valve power supply)
- Blue: 24 VDC ±10% (Power supply for control)
- Black: 0 V (Power supply for control)
- Gray: Not connected

**Connections**

- (PROFIBUS DP/EtherCAT/PROFINET/Ethernet POWERLINK)

Made to Order

- Cable length 10000 mm
- p. 23

---

**PCA-1401804**

**Cable length (L)**
- 1401804 1500 mm
- 1401805 3000 mm
- 1401806 5000 mm

**Socket connector pin arrangement**
- A-coded

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>ø5 mm</td>
</tr>
<tr>
<td>Conductor nominal cross section</td>
<td>0.34 mm²/AWG22</td>
</tr>
<tr>
<td>Wire O.D. (Including insulator)</td>
<td>1.27 mm</td>
</tr>
<tr>
<td>Min. bending radius (Fixed)</td>
<td>21.7 mm</td>
</tr>
</tbody>
</table>

**Terminals**

**Core wire color**
- Brown: Not connected
- White: 24 VDC ±10%/–5% (Solenoid valve power supply)
- Blue: Not connected
- Black: 0 V (Solenoid valve power supply)
- Gray: Not connected

**Connections**

- (DeviceNet™, EtherNet/IP™)

---

**Accessories**

- EX260 Series

---

* For DeviceNet™
* For EtherNet/IP™

---

SMC
EX260 Series

Power Supply Cable (For SI unit/For power block)

For CC-Link  For Power block

Straight connector type

EX9-AC 050 - 1

- Cable length (L)
  010 1000 mm
  030 3000 mm
  050 5000 mm

Socket connector pin arrangement
B-coded

Item Specifications

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>Ø6.6 mm</td>
</tr>
<tr>
<td>Conductor nominal cross section</td>
<td>0.3 mm²/AWG22</td>
</tr>
<tr>
<td>Wire O.D. (including insulator)</td>
<td>1.65 mm</td>
</tr>
<tr>
<td>Min. bending radius (Fixed)</td>
<td>40 mm</td>
</tr>
</tbody>
</table>

Made to Order

Cable length 10000 mm p. 23

PCA- 1401807

Cable length (L)

1401807 1500 mm
1401808 3000 mm
1401809 5000 mm

Socket connector pin arrangement
B-coded

Item Specifications

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>Ø5 mm</td>
</tr>
<tr>
<td>Conductor nominal cross section</td>
<td>0.34 mm²/AWG22</td>
</tr>
<tr>
<td>Wire O.D. (including insulator)</td>
<td>1.27 mm</td>
</tr>
<tr>
<td>Min. bending radius (Fixed)</td>
<td>21.7 mm</td>
</tr>
</tbody>
</table>

Seal Cap (10 pcs.)

Use this on ports that are not being used for communication connector (M12 connector socket).
Use of this seal cap maintains the integrity of the IP67 enclosure.

† Tighten the seal cap with the prescribed tightening torque. (For M12: 0.1 N·m)

EX9-AW TS

Connector specification

TS For M12 connector socket (10 pcs.)
You are requested to connect it to an SI unit and a valve manifold.

For detailed specifications, refer to the operation manual that can be downloaded from SMC website, https://www.smcworld.com

Output devices other than valve manifold can be operated.

By using the power block and output block for high watt load, operation up to 0.5 A/point can be performed.

Possible to mount the output block and power block additionally between the SI unit and the solenoid valve (The surplus I/O points are used).

2 point outputs per output block (M12 connector)

### Output Block

**EX9-OE T 1**

- **Output specification**
  1. Source/PNP (Negative common)
  2. Sink/NPN (Positive common)

- **Power supply type**
  
  - **T**: Internal power supply method (for low-wattage load)
  - **P**: Integrated power supply method (for high-wattage load)

  * 1 Required to connect with a power block

#### Dimensions/Parts Description

**EX9-OE**

Position indicator LED

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

#### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>EX9-OET1</th>
<th>EX9-OET2</th>
<th>EX9-OEP1</th>
<th>EX9-OEP2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal current consumption</td>
<td>40 mA or less</td>
<td>40 mA or less</td>
<td>40 mA or less</td>
<td>40 mA or less</td>
</tr>
<tr>
<td>Output type</td>
<td>Source/PNP (Negative common)</td>
<td>Sink/NPN (Positive common)</td>
<td>Source/PNP (Negative common)</td>
<td>Sink/NPN (Positive common)</td>
</tr>
<tr>
<td>Number of outputs</td>
<td>2 outputs</td>
<td>2 outputs</td>
<td>2 outputs</td>
<td>2 outputs</td>
</tr>
<tr>
<td>Power supply method</td>
<td>Internal power supply method</td>
<td>Integrated power supply method</td>
<td>Power block supplied from EX9-PE1</td>
<td>Power block supplied from EX9-PE1</td>
</tr>
<tr>
<td>Output device supply voltage</td>
<td>24 VDC</td>
<td>24 VDC</td>
<td>24 VDC</td>
<td>24 VDC</td>
</tr>
<tr>
<td>Output device supply current</td>
<td>Max. 42 mA/point (1.0 W/point)</td>
<td>Max. 42 mA/point (1.0 W/point)</td>
<td>Max. 0.5 A/point (12 W/point)</td>
<td>Max. 0.5 A/point (12 W/point)</td>
</tr>
<tr>
<td>Environmental resistance</td>
<td>IP67</td>
<td>IP67</td>
<td>IP67</td>
<td>IP67</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>−10 to 50°C</td>
<td>−10 to 50°C</td>
<td>−10 to 50°C</td>
<td>−10 to 50°C</td>
</tr>
<tr>
<td>Operating humidity range</td>
<td>35 to 85%RH (No condensation)</td>
<td>35 to 85%RH (No condensation)</td>
<td>35 to 85%RH (No condensation)</td>
<td>35 to 85%RH (No condensation)</td>
</tr>
<tr>
<td>Standards</td>
<td>CE marking (EMC directive/RoHS directive), UL (CSA)</td>
<td>CE marking (EMC directive/RoHS directive), UL (CSA)</td>
<td>CE marking (EMC directive/RoHS directive), UL (CSA)</td>
<td>CE marking (EMC directive/RoHS directive), UL (CSA)</td>
</tr>
<tr>
<td>Weight</td>
<td>120 g</td>
<td>120 g</td>
<td>120 g</td>
<td>120 g</td>
</tr>
</tbody>
</table>

---

### Power Block

**EX9-PE1**

- **Position indicator LED**

- **Power supply connector** (unused)

- **Power supply input connector** (M12, 5 pins, plug, B-coded)

#### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>EX9-PE1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection block</td>
<td>Output block for high wattage load</td>
</tr>
<tr>
<td>Connection block stations</td>
<td>Output block: Max. 8 stations</td>
</tr>
<tr>
<td>Power supply to output and internal control</td>
<td>Power supply voltage</td>
</tr>
<tr>
<td></td>
<td>Internal current consumption</td>
</tr>
<tr>
<td>Supply current</td>
<td>Max. 3.1 A*1</td>
</tr>
<tr>
<td>Environmental resistance</td>
<td>Enclosure</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>Operating temperature range</td>
</tr>
<tr>
<td>Operating humidity range</td>
<td>Operating humidity range</td>
</tr>
<tr>
<td>Standards</td>
<td>CE marking (EMC directive/RoHS directive), UL (CSA)</td>
</tr>
<tr>
<td>Weight</td>
<td>120 g</td>
</tr>
<tr>
<td>Enclosed parts</td>
<td>Seal cap (for M12 connector)</td>
</tr>
</tbody>
</table>

---

*1 When using with 3.0 to 3.1 A, the ambient temperature should not exceed 40°C, and do not bundle the cable.
1 Connector for Output Block Wiring

Field-wireable connector for connecting an output device to an output block

**PCA-1557743**

- **A-coded**
  - 1
  - 2
  - 3
  - 4

- **Plug pin arrangement**

<table>
<thead>
<tr>
<th>Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown: Not connected</td>
</tr>
<tr>
<td>Blue: 0 V (^1), Not connected</td>
</tr>
</tbody>
</table>

**Applicable Cable**

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>3.5 to 6.0 mm</td>
</tr>
<tr>
<td>Wire gauge (Stranded wire cross section)</td>
<td>0.14 to 0.34 mm(^2)/AWG26 to 22</td>
</tr>
<tr>
<td>Core wire diameter (including insulating material)</td>
<td>0.7 to 1.3 mm</td>
</tr>
</tbody>
</table>

**PCA-1557756**

- **A-coded**
  - 1
  - 2
  - 3
  - 4

- **Plug pin arrangement**

<table>
<thead>
<tr>
<th>Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown: Not connected</td>
</tr>
<tr>
<td>Blue: 0 V (^1), Not connected</td>
</tr>
</tbody>
</table>

**Applicable Cable**

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable O.D.</td>
<td>4.0 to 6.0 mm</td>
</tr>
<tr>
<td>Wire gauge (Stranded wire cross section)</td>
<td>0.34 to 0.75 mm(^2)/AWG22 to 18</td>
</tr>
<tr>
<td>Core wire diameter (including insulating material)</td>
<td>1.3 to 2.5 mm</td>
</tr>
</tbody>
</table>

Refer to page 19 for the power supply cable for power block.

2 End Plate

Use when an output block is being used and a valve manifold is not connected.

**EX9-EA03**

3 End Plate

4 Bracket Plate/DIN Rail Mounting Bracket

A reinforcing brace used to mount an output block or power block onto an SI unit. To prevent connection failure between products due to deflection, use this bracket plate whenever an output block or power block is mounted.

**EX9-BP1**

- **2 x M4 Mounting hole**

**EX9-BD1**

- **2 x M4 Mounting hole**

**Accessory**

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D0med cap nut (M4)</td>
<td>1</td>
</tr>
<tr>
<td>Round head combination screw (M4 x 8)</td>
<td>1</td>
</tr>
<tr>
<td>Round head combination screw (M4 x 10)</td>
<td>1</td>
</tr>
</tbody>
</table>

*Example of use*

- **End plate**
- **Bracket plate**
- **DIN rail mounting bracket**

21
**EX260 Series**

**Made to Order**

Please contact SMC for detailed specifications and lead times.

**SI Unit**

Prepare the SI unit and valve manifold (without SI unit) separately, and combine them before use.

**EtherNet/IP™ Web server function compatible**

**EX260-SEN1-X194**

- Web server compatible: Can conduct a solenoid valve operation test (ON/OFF), check communication state, set QuickConnect™, etc.
- Applicable to the power supply taken from Rockwell Automation’s safe output module with pulse test function
- Compliant with QuickConnect™ class A specifications
- The gateway address is set to 192.168.1.001 when the IP address is set by the rotary switch.
- Dimensions are the same as those of the standard type.

**Communication Cable**

With connector on one side (Socket)

Cable length: 10000 mm

**For CC-Link**

EX9-AC100MJ-X12

- Applicable protocol
  - CC-Link
  - DeviceNet™

**Item** | **Specifications**
---|---
Cable O.D. | ø7.7 mm
Conductor nominal cross section | Power pair 0.34 mm²/AWG22
Data pair 0.25 mm²/AWG24
Wire O.D. (including insulator) | Power pair 1.4 mm
Data pair 2.05 mm
Min. bending radius (Fixed) | 77 mm

**For DeviceNet™**

- Applicable protocol
  - CC-Link
  - DeviceNet™

**Item** | **Specifications**
---|---
Cable O.D. | ø6.7 mm
Conductor nominal cross section | Power pair 0.34 mm²/AWG22
Data pair 0.25 mm²/AWG24
Wire O.D. (including insulator) | Power pair 1.4 mm
Data pair 2.05 mm
Min. bending radius (Fixed) | 67 mm

**Web server screen (Example)**

Prepare the SI unit and valve manifold (without SI unit) separately, and combine them before use.
EX260 Series

Power Supply Cable

1. With connector on one side (Socket)
   Cable length: 10000 mm
   - For CC-Link
   - For Power block
   EX9-AC100-1-X1

   **Socket connector pin arrangement**
   B-coded (Reverse key)

   **Connections**
   - Terminal no.
   - Core wire color
     - Brown: 24 VDC +10%/–5% (Solenoid valve power supply)
     - White: 0 V (Solenoid valve power supply)
     - Blue: 24 VDC±10% (Power supply for control)
     - Black: 0 V (Power supply for control)
     - Gray: Not connected

   **Item Specifications**
   - Cable O.D.: ø6.6 mm
   - Conductor nominal cross section: 0.3 mm²/AWG22
   - Wire O.D. (Including insulator): 1.65 mm
   - Min. bending radius (Fixed): 40 mm

2. With connector on one side (Socket)
   Cable length: 10000 mm
   - For PROFIBUS DP
   - For DeviceNet™
   - For EtherCAT
   - For PROFINET
   - For EtherCAT
   - For Ethernet POWERLINK
   - For IO-Link

   EX500-AP100- S-X1

   **Connector specification**
   - S: Straight
   - A: Angled

   **Straight connector type**
   - Socket connector pin arrangement
     - A-coded

   **Connections (PROFIBUS DP/EtherCAT/PROFINET/Ethernet POWERLINK)**
   - Terminal no.
   - Core wire color
     - Brown: Not connected
     - 24 VDC±10% (Power supply for control)
     - Blue: Not connected
     - White: 24 VDC+10%/–5% (Solenoid valve power supply)

   **Item Specifications**
   - Cable O.D.: ø6 mm
   - Conductor nominal cross section: 0.3 mm²/AWG22
   - Wire O.D. (Including insulator): 1.5 mm
   - Min. bending radius (Fixed): 40 mm

   **Angled connector type**
   - Socket connector pin arrangement
     - A-coded

   **Connections (DeviceNet™, EtherNet/IP™)**
   - Terminal no.
   - Core wire color
     - Brown: Not connected
     - 24 VDC+10%/–5% (Solenoid valve power supply)
     - Blue: Not connected
     - White: 24 VDC±10% (Power supply for control)

   **Item Specifications**
   - Cable O.D.: ø6 mm
   - Conductor nominal cross section: 0.3 mm²/AWG22
   - Wire O.D. (Including insulator): 1.5 mm
   - Min. bending radius (Fixed): 40 mm

   **Connections (IO-Link)**
   - Terminal no.
   - Core wire color
     - Brown: Not connected
     - 24 VDC±10% (Solenoid valve power supply)
     - Blue: Not connected
     - White: 24 VDC+10%/–5% (Power supply for control)

   **Item Specifications**
   - Cable O.D.: ø6 mm
   - Conductor nominal cross section: 0.3 mm²/AWG22
   - Wire O.D. (Including insulator): 1.5 mm
   - Min. bending radius (Fixed): 40 mm

   **For IO-Link**
   - EX9-AC100-1-X1
   - EX500-AP100- S-X1

   **For Ethernet POWERLINK**
   - EX9-AC100-1-X1

   **For PROFINET**
   - EX9-AC100-1-X1

   **For EtherCAT**
   - EX9-AC100-1-X1

   **For DeviceNet™**
   - EX9-AC100-1-X1
**EX260 Series**

Specific Product Precautions

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For fieldbus system precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: https://www.smcworld.com

---

**Wiring**

**Caution**

1. Select connectors that are ø16 or less if mounting valve manifolds directly using field-wireable connectors for SI unit power supply wiring.

Using large diameter connectors causes interference with the mounting surface.

The following cables with connectors are recommended.

- For EX260-SPRm/-SDNm/-SECM/-SPNm/-SENm/-SPLm
  - <Cable with connector>
  - EX500-APm
  - PCA-1401804/-1401805/-1401806

- For EX260-SMJm
  - <Cable with connector>
  - EX9-ACm
  - PCA-1401807/-1401808/-1401809

---

**Adjustment / Operation**

**Caution**

1. For details on programming and address setting, refer to the manual from the PLC manufacturer.

The content of programming related to protocol is designed by the manufacturer of the PLC used.

2. For the EX260-SPNm, the side of the SI unit may become hot.

It may cause burns.

---

**Operating Environment**

**Caution**

1. Select the proper type of enclosure according to the operating environment.

IP67 is achieved when the following conditions are met.

1) Provide appropriate wiring between all units using electrical wiring cables, communication connectors and cables with M12 connectors.

2) Appropriately mount each unit and valve manifold.

3) Be sure to mount a seal cap on any unused connectors.

If using in an environment that is exposed to water splashes, please take measures such as using a cover.

When the enclosure is IP40, do not use in an operating environment or atmosphere where it may come in contact with corrosive gas, chemical agents, seawater, water, or water vapor.

When connected to the EX260-SPR5/6/7/8, manifold enclosure is IP40.

---

**Trademark**

DeviceNet™ is a trademark of ODVA.

EtherNet/IP™ is a trademark of ODVA.

EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

Modbus® is a registered trademark of Schneider Electric, licensed to the Modbus Organization, Inc.

QuickConnect™ is a trademark of ODVA.
Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)1), and other safety regulations.

Caution: Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

Warning: Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

Danger: Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

## Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.
   Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.
   The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.
   1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
   2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
   3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.
   1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
   2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
   3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
   4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

## Caution

1. The product is provided for use in manufacturing industries.
   The product herein described is basically provided for peaceful use in manufacturing industries. If considering the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.

## Limited warranty and Disclaimer

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”. Read and accept them before using the product.

### Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.2) Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.

2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.

3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

   > Vacuum pads are excluded from this 1 year warranty. A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

## Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.

2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

### Caution

SMC products are not intended for use as instruments for legal metrology.
Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country. Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

## Revision History

<table>
<thead>
<tr>
<th>Edition</th>
<th>Revision Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>- EtherNet/IP™ has been added to applicable Fieldbus protocols.</td>
</tr>
<tr>
<td>C</td>
<td>- The IO-Link compatible EX260-SIL1 has been added.</td>
</tr>
<tr>
<td></td>
<td>- Accessories and made-to-order specifications have been added.</td>
</tr>
<tr>
<td></td>
<td>- “How to Order Manifold” and “Dimensions” pages have been deleted.</td>
</tr>
<tr>
<td></td>
<td>- Number of pages has been decreased from 52 to 28.</td>
</tr>
</tbody>
</table>
Fieldbus System EX260 Series
SI Unit

LAN cable connectable RJ45 communication connectors

- Communication protocol: EtherNet/IP™
- Number of outputs: 32

Trademark
EtherNet/IP™ is a trademark of ODVA.
QuickConnect™ is a trademark of ODVA.

Applicable Valve Series

<table>
<thead>
<tr>
<th>Series</th>
<th>Flow rate characteristics (4/2 → 5/3)</th>
<th>Max. number of solenoids</th>
<th>Power consumption [W]</th>
<th>Applicable cylinder size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C [dm³/(s·bar)]</td>
<td>b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JSY Series*²</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JSY1000</td>
<td>0.91</td>
<td>0.48</td>
<td>32</td>
<td>0.2 (With power-saving circuit)</td>
</tr>
<tr>
<td>JSY3000</td>
<td>2.77</td>
<td>0.27</td>
<td>0.4 (Standard)</td>
<td>ø50</td>
</tr>
<tr>
<td>JSY5000</td>
<td>6.59</td>
<td>0.22</td>
<td>0.1 (With power-saving circuit)</td>
<td>ø80</td>
</tr>
<tr>
<td>SY Series</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SY3000</td>
<td>1.6</td>
<td>0.19</td>
<td>32</td>
<td>0.35 (Standard)</td>
</tr>
<tr>
<td>SY5000</td>
<td>3.6</td>
<td>0.17</td>
<td>0.1 (With power-saving circuit)</td>
<td>ø63</td>
</tr>
<tr>
<td>SY7000</td>
<td>5.9</td>
<td>0.20</td>
<td></td>
<td>ø80</td>
</tr>
<tr>
<td>VQC Series*²</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQC1000</td>
<td>1.0</td>
<td>0.30</td>
<td>24</td>
<td>0.4 (Standard)</td>
</tr>
<tr>
<td>VQC2000</td>
<td>3.2</td>
<td>0.30</td>
<td>0.95 (Standard)</td>
<td>ø63</td>
</tr>
<tr>
<td>VQC4000</td>
<td>7.3</td>
<td>0.38</td>
<td>0.4 (Low-wattage type)</td>
<td>ø160</td>
</tr>
<tr>
<td>VQC5000</td>
<td>17</td>
<td>0.31</td>
<td></td>
<td>ø180</td>
</tr>
</tbody>
</table>

*²: The assembly of JSY and VQC series valves should be requested separately by the customer. Specify “without SI unit” and “positive common” or “non-polar” for the valve manifold specifications.

*1: CAT5 or higher
* Enclosure: IP20
Daisy-chain wiring of communication cables and power supply cables is possible.

Compatible Topologies

<table>
<thead>
<tr>
<th>Ring type</th>
<th>Star type</th>
<th>Linear type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLC</td>
<td>PLC</td>
<td>PLC</td>
</tr>
<tr>
<td>Switching hub (Commercially available)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DLR compatible</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Both air and electric systems can be constructed with RJ45 communication cables.
Fieldbus System EX260 Series
SI Unit EX260-SEN2-X205

How to Order SI Units

**EX260 – S EN2 – X205**

Communication protocol

- EtherNet/IP™
- EN

Output specification

- 32 outputs, NPN (Positive common)/Sink

**Connector specification**
- X205
- Communication connector: RJ45
- Power connector: Spring type connector

Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Protocol</strong></td>
<td>EtherNet/IP™ Volume 1 (Edition 3.25)</td>
</tr>
<tr>
<td></td>
<td>Volume 2 (Edition 1.23)</td>
</tr>
<tr>
<td><strong>Transmission medium</strong></td>
<td>Standard Ethernet cable (CAT5 or higher)</td>
</tr>
<tr>
<td></td>
<td>(100BASE-TX)</td>
</tr>
<tr>
<td><strong>Transmission speed</strong></td>
<td>100 Mbps/10 Mbps (Automatic negotiation)</td>
</tr>
<tr>
<td><strong>Transmission method</strong></td>
<td>Full duplex/Half duplex (Automatic negotiation)</td>
</tr>
<tr>
<td><strong>Device information</strong></td>
<td>Vendor ID: 7 (SMC Corp.)</td>
</tr>
<tr>
<td></td>
<td>Device type: 27 (Pneumatic Valve)</td>
</tr>
<tr>
<td><strong>Applicable function</strong></td>
<td>QuickConnect™ DLR</td>
</tr>
<tr>
<td><strong>EDS file</strong></td>
<td>ex260_sen2_X205_24_v*.eds</td>
</tr>
</tbody>
</table>

**Output**

- Number of outputs: 32
- Output type: Sink/NPN (Positive common)
- Connected load: Solenoid valve with surge voltage suppressor of 24 VDC and 1.5 W or less (manufactured by SMC)
- Power supply for solenoid valve: 22.8 to 26.4 VDC, 2.0 A or less, according to the solenoid valve station specification
- Residual voltage: 0.4 VDC or less
- Power supply for control: 21.6 to 26.4 VDC, 0.1 A or less
- Enclosure: IP20 (with manifold assembled)
- Weight: 200 g or less (including accessories)

**EtherNet/IP™ communication connector**

- BUS IN: RJ45 8 pins, socket
- BUS OUT: RJ45 8 pins, socket

**Accessory**

- Hexagon socket head cap screw (XS x 30): 2
- RJ45 cap: 1
- Power connector: 1

**Power connector PWR: 5 pins, socket**

- Wire gauge (Solid cable/Flexible cable): 0.2 to 1.5 mm²/AWG24 to 16

**Applicable wire for power supply connector**

<table>
<thead>
<tr>
<th>No.</th>
<th>Designation</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FE</td>
<td>Grounding</td>
</tr>
<tr>
<td>2</td>
<td>SV0V</td>
<td>0 V for solenoid valve</td>
</tr>
<tr>
<td>3</td>
<td>SV24V</td>
<td>+24 V for control unit</td>
</tr>
</tbody>
</table>

**LED Indicator**

<table>
<thead>
<tr>
<th>LED</th>
<th>LED Status</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>Power is not being supplied or the IP address is not set.</td>
<td></td>
</tr>
<tr>
<td>ON</td>
<td>Ethernet/IP™ communication established</td>
<td></td>
</tr>
<tr>
<td>ON</td>
<td>Ethernet/IP™ communication not established</td>
<td></td>
</tr>
<tr>
<td>OFF</td>
<td>IP duplicated</td>
<td></td>
</tr>
<tr>
<td>OFF</td>
<td>Power is not being supplied.</td>
<td></td>
</tr>
<tr>
<td>ON</td>
<td>Operating normally</td>
<td></td>
</tr>
<tr>
<td>ON</td>
<td>Setting error</td>
<td></td>
</tr>
<tr>
<td>OFF</td>
<td>Recoverable error</td>
<td></td>
</tr>
<tr>
<td>ON</td>
<td>Unrecoverable error</td>
<td></td>
</tr>
<tr>
<td>OFF</td>
<td>BUS IN side: No link, No activity</td>
<td></td>
</tr>
<tr>
<td>ON</td>
<td>BUS IN side: Link, No activity</td>
<td></td>
</tr>
<tr>
<td>ON</td>
<td>BUS IN side: Link, Activity</td>
<td></td>
</tr>
<tr>
<td>OFF</td>
<td>BUS OUT side: No link, No activity</td>
<td></td>
</tr>
<tr>
<td>ON</td>
<td>BUS OUT side: Link, No activity</td>
<td></td>
</tr>
<tr>
<td>ON</td>
<td>BUS OUT side: Link, Activity</td>
<td></td>
</tr>
<tr>
<td>OFF</td>
<td>Power is being supplied to the valve or is outside the tolerance range (19 V or less).</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions

- The dimensions when combined with the valve manifold are the same as the dimensions of the valve manifold with a standard EX260 series unit mounted.
- For the JSY and VQC series, order the valve manifold separately.
  - Specify “without SI unit” and “positive common” or “non-polar” for the valve manifold specifications.

Caution

- RoHS
Safety Instructions

Be sure to read the “Handling Precautions for SMC Products” (M-E03-3) and “Operation Manual” before use.