Fieldbus System
(For Input/Output)

Compatible with 3 types of connector

AIDA\(^1\) specifications compliant

Push Pull connectors
One-touch removal/mounting requires fewer work-hours

<table>
<thead>
<tr>
<th>SCRJ connectors</th>
<th>RJ45 connectors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

General-purpose connectors

Communication connector: M12
Power supply connector: 7/8 inch

Compatible with new functions of PROFI\(^*\)NET\(^\circ\) (V2.3)

- PROFInergy
- Shared Device
- NET Load Class III
- MRPD

Connectable valves

JSY Series
SY Series
VQC Series

Compact, Lightweight

- Height: 40 mm reduction
- Weight: 53.5% reduction

New 465 g  Existing model: 1000 g

EX245 Series

FW (firmware) update function
Simultaneous writing is possible from network connection.

Web server function
Status check and valve ON/OFF are possible on the web browser.

1 Abbreviation of the Automation Initiative of German (Deutschland) Automobile Manufacturers

RoHS
Compatible with PROFIenergy, the energy-saving function

Generally, the switching off of the facilities in factories consumes a lot of time to restart them. PROFIenergy enables PROFINET communication to continue while saving energy by minimizing the time for restarting. When the commands for PROFIenergy energy-saving mode are sent from the I/O controller (PLC) to the I/O device (SI unit), the information of time for pausing is also sent (such as lunch breaks, nighttime, weekends, holidays). The SMC SI unit does not require time for restarting. However, for the connected I/O equipment, such as pressure switch, flow switch, auto switch, valves, three types of energy-saving modes are available for customers to choose from depending on their application.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Output (Valve/Digital)</th>
<th>Input device (Pressure switch, flow switch, auto switch, etc.)</th>
<th>Input data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shut down/Clear value mode</td>
<td>OFF</td>
<td>OFF (Power supply)</td>
<td>OFF</td>
</tr>
<tr>
<td>Shut down/Hold last value mode</td>
<td>Hold</td>
<td>OFF (Power supply)</td>
<td>Hold</td>
</tr>
<tr>
<td>PROCEED mode</td>
<td>Hold</td>
<td>Hold</td>
<td>Hold</td>
</tr>
</tbody>
</table>

Shared Device function

I/O module connected to an SI unit can be controlled by multiple I/O controllers (PLC).

- Information can be shared with up to 3 controllers in addition to the control PLC.
- The cost of the hardware, cables, and installation space can be reduced.

* Shared Device function enables an I/O module connected to the I/O device to be controlled by multiple I/O controllers (PLC). Control status can be shared among other I/O controllers. As the function is realized on one PROFINET line, the cost for hardware, cables, and installation space can be reduced.
**MRP/MRPD function**

**MRP (Media Redundancy Protocol) function**

Even if a communication cable is disconnected or damaged at any location, communication can be continued. Furthermore, it is possible to identify the disconnection point, and the network disconnection time can be made within 200 ms.  

* To use the MRP function, the PLC should be able to support the MRP function.

**MRPD (Media Redundancy for Planned Duplication)**

It is possible to duplicate routes (Redundant) with a ring topology configured with PROFINET IRT communication. Communication reconnection time is faster than the MRP function, so communication can be continued without recovery time.

**NET Load Class III compatible**

Passed and certified under the highest network load (Class III) specified by PROFINET.

**Built-in web server function and FW (firmware) update possible**

All products are accessible from the PC.  
- FW update  
- Status check  
- Forced output, etc.

**Dual communication and dual power connectors**

- 2 power connectors and 2 communication connectors are mounted, making daisy-chain connection possible.  
- An external branch connector is not necessary. Reduced wiring space  
- Loop through current between power connectors supports up to 16 A¹ max.

¹ Maximum allowable current for 7/8 inch power supply connector is 10A. Loop through current between connectors is 6 A max.

---

To power supply

Power supply cable

Communication cable

PLC

Connection example

EX245  
EX245  
EX245  

Switching hub

Client  
Client  
Client  
Client  

Normal flow of data

Data flow when the communication cable is disconnected

Client  
Client  
Client  
Client  

Redundancy manager

Success

Disconnected location
## Fast Start Up function

For the Fast Start Up function, time from power ON to communication connection is approx. 10 s or less.

In the case of a tool changer, it takes about 10 seconds for communication to be connected in some products after the power to the device installed on the tool is turned ON. For products which support the Fast Start Up function, communication can be operational even faster.

* To use the Fast Start Up function, the PLC should be able to support the Fast Start Up function.

### Fiber-optic cable maintenance alarm

This feature continuously monitors the received light intensity from the fiber-optic cable and reports it to the PLC. Any loss of intensity is an indicator of damage to the cable so may give a warning before communication is lost. This allows preventative maintenance and so avoids unplanned shutdowns.

### Modules can be combined flexibly.

- Number of valves, digital inputs/outputs
  - Solenoid valve: Max. 32 valves
  - Digital input: Max. 128 inputs
  - Digital output: Max. 64 outputs
- I/O modules can be connected and removed one by one.
- Up to 8 modules can be connected in any order.

### Connectable Valve Series

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IP65</td>
<td>JSY3000</td>
<td>C [dm³/(s·bar)] b</td>
<td>32</td>
<td>0.4 (Standard)</td>
<td>ø50</td>
</tr>
<tr>
<td></td>
<td>JSY5000</td>
<td>2.77 0.27</td>
<td></td>
<td>0.1 (With power-saving circuit)</td>
<td>ø80</td>
</tr>
<tr>
<td>IP65</td>
<td>SY3000</td>
<td>1.6 0.19</td>
<td>32</td>
<td>0.35 (Standard)</td>
<td>ø50</td>
</tr>
<tr>
<td></td>
<td>SY5000</td>
<td>3.6 0.17</td>
<td></td>
<td>0.1 (With power-saving circuit)</td>
<td>ø63</td>
</tr>
<tr>
<td>IP65</td>
<td>VQC2000</td>
<td>3.2 0.30</td>
<td>24</td>
<td>0.4 (Standard)</td>
<td>ø63</td>
</tr>
<tr>
<td></td>
<td>VQC4000</td>
<td>7.3 0.38</td>
<td></td>
<td>0.95 (Standard)</td>
<td>ø160</td>
</tr>
</tbody>
</table>
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Fieldbus System
For Input/Output
EX245 Series

Construction

How to Order

SI Unit
EX245 – SPN 1A

Connector type

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Communication connector</th>
<th>Power supply connector</th>
</tr>
</thead>
</table>

Digital Input Module
EX245 – DX1

Digital output module specification
DX1 Digital input (16 inputs)

Digital Output Module
EX245 – DY1

Digital output module specification
DY1 Digital output (8 outputs)

End Plate
EX245 – EA2 – 1

Bracket
1 General-purpose
2 None
3 For JSY/SY
4 For VQC4000
5 For VQC2000

Refer to the Web Catalog for manifold valve part numbers. Bracket 3 to 5 correspond to the mounting hole pitch of each manifold valve.
## Specifications

### Common Specifications for All Units/Modules

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature range</td>
<td>Operating: −10 to 50°C, Stored: −20 to 60°C (No condensation)</td>
</tr>
<tr>
<td>Operating humidity range</td>
<td>Operating, Stored: 35 to 85% RH (No condensation)</td>
</tr>
<tr>
<td>Withstand voltage</td>
<td>500 VAC for 1 minute between external terminals and FE</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>500 VDC, 10 MΩ or more between external terminals and FE</td>
</tr>
<tr>
<td>Enclosure</td>
<td>IP65 (Manifold assembly, With seal cap)</td>
</tr>
<tr>
<td>Standards</td>
<td>CE marking (EMC directive/RoHS directive)</td>
</tr>
</tbody>
</table>

### SI Unit Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>EX245-SPN1A</th>
<th>EX245-SPN2A</th>
<th>EX245-SPN3A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protocol</td>
<td>PROFINET</td>
<td>PROFINET IO</td>
<td></td>
</tr>
<tr>
<td>Communication speed</td>
<td>100 Mbps full duplex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configuration file</td>
<td>GSD file</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Applicable function

- MRP function
- MRPD function
- Fast Start Up function
- Shared Device function
- PROFInet function
- Web server function
- FW update function
- Conformance Class C
- NET Load Class II
- Fiber-optic cable maintenance alarm

### Electrical

<table>
<thead>
<tr>
<th>Internal current consumption (US1)</th>
<th>500 mA or less</th>
<th>200 mA or less</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating voltage/Max. current</td>
<td>US1 24 VDC +20%, −15%/8 A</td>
<td>US2 24 VDC +20%, −15%/4 A</td>
</tr>
<tr>
<td>Source/PNP (Negative common)</td>
<td>16 A</td>
<td>6 A</td>
</tr>
</tbody>
</table>

### Output

| Number of outputs | 32 outputs |
| Load              | Solenoid valve with surge voltage suppressor of 24 VDC, 1 W or less (SMC) |
| Power supply      | 24 VDC, 2 A |

### Protection

- Short-circuit protection

### General

| Max. number of modules | 8 |
| Max. number of digital inputs | 128 |
| Max. number of digital outputs | 64 |
| Weight                | 465 g 540 g |

*1 The configuration file can be downloaded from the SMC website, https://www.smcworld.com

### Digital Input Module

<table>
<thead>
<tr>
<th>Model</th>
<th>EX245-DX1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input type</td>
<td>PNP</td>
</tr>
<tr>
<td>Input connector</td>
<td>M12 (5-pin) socket*1</td>
</tr>
<tr>
<td>Number of inputs</td>
<td>16 inputs</td>
</tr>
<tr>
<td>Supplied voltage</td>
<td>24 VDC</td>
</tr>
<tr>
<td>Max. supplied current</td>
<td>0.5 A/Connector, 2 A/Module</td>
</tr>
<tr>
<td>Protection</td>
<td>Short-circuit protection</td>
</tr>
<tr>
<td>Input current (at 24 VDC)</td>
<td>Typ. 4.5 mA</td>
</tr>
<tr>
<td>ON voltage</td>
<td>11 to 30 V</td>
</tr>
<tr>
<td>OFF voltage</td>
<td>−3 to 5 V</td>
</tr>
<tr>
<td>Internal current consumption</td>
<td>50 mA or less</td>
</tr>
<tr>
<td>Weight</td>
<td>280 g</td>
</tr>
</tbody>
</table>

*1 An M12 (4-pin) connector can also be connected.

### Digital Output Module

<table>
<thead>
<tr>
<th>Model</th>
<th>EX245-DY1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output type</td>
<td>PNP</td>
</tr>
<tr>
<td>Output connector</td>
<td>M12 (5-pin) socket*1</td>
</tr>
<tr>
<td>Number of outputs</td>
<td>8 outputs</td>
</tr>
<tr>
<td>Supplied voltage</td>
<td>24 VDC</td>
</tr>
<tr>
<td>Max. load current</td>
<td>0.5 A/Output, 2 A/Module</td>
</tr>
<tr>
<td>Protection</td>
<td>Short-circuit protection</td>
</tr>
<tr>
<td>Current consumption</td>
<td>50 mA or less</td>
</tr>
<tr>
<td>Weight</td>
<td>280 g</td>
</tr>
</tbody>
</table>

*1 An M12 (4-pin) connector can also be connected.

### End Plate

<table>
<thead>
<tr>
<th>Model</th>
<th>EX245-EA2-1</th>
<th>EX245-EA2-2</th>
<th>EX245-EA2-3</th>
<th>EX245-EA2-4</th>
<th>EX245-EA2-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Weight</td>
<td>120 g</td>
<td>80 g</td>
<td>120 g</td>
<td>150 g</td>
<td>120 g</td>
</tr>
<tr>
<td>Note</td>
<td>General-purpose</td>
<td>Mounting hole for JSY/SY</td>
<td>Mounting hole for VQC4000</td>
<td>Mounting hole for VQC2000</td>
<td></td>
</tr>
</tbody>
</table>

*1 An M12 (4-pin) connector can also be connected.
EX245 Series

Dimensions/Parts Description

**SI Unit**

<table>
<thead>
<tr>
<th>EX245-SPN1A/2A</th>
<th>LED indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>EX245-SPN3A</td>
<td>LED indicator</td>
</tr>
</tbody>
</table>

**EX245-SPN1A/2A**

- 25 x 17
- PROFINET connection port
- Push Pull connector
- Power supply connector
- EX245-SPN1A: SCRJ
- EX245-SPN2A: RJ45

**EX245-SPN3A**

- 24 x 18
- PROFINET connection port
- M12 connector (4-pin, Socket, D-coded)
- Power supply connector
- 7/8 inch connector (5-pin, Socket)

**Digital Input Module**

**EX245-DX1**

- 8 x M12 connector (5-pin, Socket)
- LED indicator (ON/OFF of the input device)

**Digital Output Module**

**EX245-DY1**

- 4 x M12 connector (5-pin, Socket)
- LED indicator (ON/OFF of the output device)
Dimensions/Parts Description

End Plate

EX245-EA2-1

EX245-EA2-2

EX245-EA2-3 (For JSY/SY)

EX245-EA2-4 (For VQC4000)

EX245-EA2-5 (For VQC2000)
EX245 Series

Assembly Examples

Manifold valve
SI unit
Digital input module
Digital output module
End plate

Refer to the Web Catalog for order numbers.

EX245-SPN1A
EX245-DX1
EX245-DY1
EX245-EA2-3

The modules and manifold valve are not assembled at the time of shipment. After assembling the SI unit and manifold valve, assemble the modules.

- Width across flats: 2.5 mm
- Tightening torque:
  - JSY: 0.75 to 0.85 N·m
  - SY: 0.75 to 0.85 N·m
  - VQC: 0.5 to 0.7 N·m

*1 Tightening tool is not included. It should be provided by the customer.
*2 Joint and modular adapter are shipped together with the product.
EX245 Series
Accessories

1. Seal Cap (10 pcs.)
Be sure to mount a seal cap on any unused I/O connectors. Otherwise, the specified enclosure cannot be maintained.

- EX9-AWTS
  For M12 (10 pcs.)

- EX245-AWC
  For communication connectors (10 pcs.)

- EX245-AWP
  For power supply connectors (10 pcs.)

Seal cap for communication connector and power supply connector are included when EX245-SPN1A/2A is shipped (2 caps for each unit).

2. Marker (1 sheet, 88 pcs.)
The signal name of I/O device and each module name can be entered and mounted on each module.

- EX600-ZT1

3. Joint Pack
EX245-ZJP

Joint
Modular adapter

Included when EX245-DX1/DY1, EA2- are shipped.

4. 7/8 Inch Connector and Related Parts
- Power supply cable (7/8 inch connector)
  PCA-1558810  Straight 2 m
  PCA-1558823  Straight 6 m

- Power supply field-wireable connector (7/8 inch)
  [Compatible with AWG22-16]
  PCA-1578078  Plug
  PCA-1578081  Socket
EX245 Series

Communication Cable/Connector

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

<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-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

<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>

PCA-1446566 (Plug)

- Cable O.D.                | ø6.5 mm        |
- Conductor nominal cross section | AWG22         |
- Wire O.D. (Including insulator) | 1.55 mm       |
- Min. bending radius (Fixed)   | 45.5 mm        |
Communication Cable/Connector

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

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>010</td>
<td>1000 mm</td>
</tr>
<tr>
<td>020</td>
<td>2000 mm</td>
</tr>
<tr>
<td>030</td>
<td>3000 mm</td>
</tr>
<tr>
<td>050</td>
<td>5000 mm</td>
</tr>
<tr>
<td>100</td>
<td>10000 mm</td>
</tr>
</tbody>
</table>

Field-wireable Communication Connector

PCA-1446553

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 0.34 mm²/AWG26 to 22</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.
I/O Cable with Connector, I/O Connector

<table>
<thead>
<tr>
<th>Name</th>
<th>Use</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable with connector</td>
<td>For sensor</td>
<td>PCA-1557769</td>
<td>Cable with M12 connector (4 pins/3 m)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PCA-1557772</td>
<td>Cable with M8 connector (3 pins/3 m)</td>
</tr>
<tr>
<td>Field-wireable connector</td>
<td>For sensor</td>
<td>PCA-1557730</td>
<td>Field-wireable connector (M8/3 pins/Plug/Piercecon® connection)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PCA-1557743</td>
<td>Field-wireable connector (M12/4 pins/Plug/QUICKON-ONE connection/SPEEDCON)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PCA-1557756</td>
<td></td>
</tr>
<tr>
<td>Y connector</td>
<td>For sensor</td>
<td>PCA-1557785</td>
<td>Y connector (2 x M12 (5 pins)-M12 (5 pins)/SPEEDCON)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PCA-1557798</td>
<td>Y connector (2 x M8 (3 pins)-M12 (4 pins)/SPEEDCON)</td>
</tr>
</tbody>
</table>

* When using the Y connector, connect it to the connector on the I/O module through the sensor cable with the M12 connector (PCA-1557769).
EX245 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 “Operation Manual” on the SMC website: https://www.smcworld.com

Operating Environment

⚠️ Caution

1. Select the proper type of enclosure according to the operating environment.
   IP65 is achieved when the following conditions are met.
   1) Provide appropriate wiring of the electrical wiring cables, communication connectors, and cables with M12 connectors.
   2) Suitable mounting of the SI unit, each module, and the manifold valve
   3) Be sure to mount a seal cap on any unused connectors.
   If using in an environment where it may be exposed to water splash, please take measures such as using a cover.
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.

### Safety Instructions

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

### Caution

<table>
<thead>
<tr>
<th>Caution</th>
<th>Warning</th>
<th>Danger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.</td>
<td>Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.</td>
<td>Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.</td>
</tr>
</tbody>
</table>

### Safety Instructions

#### 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 runway 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 using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.

If anything is unclear, contact your nearest sales branch.

### Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”.

#### 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.

-²Vacuum 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 product due to the use of the 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.

### Note

-¹ISO 4414: Pneumatic fluid power – General rules relating to systems.
-ISO 4413: Hydraulic fluid power – General rules relating to systems.
-IEC 60204-1: Safety of machinery — Electrical equipment of machines.
-(Part 1: General requirements)
-ISO 10218-1: Manipulating industrial robots – Safety, etc.

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1) Vacuum pads are excluded from this 1 year warranty.
2) 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 product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

-- End of Extracted Text --

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1) Vacuum pads are excluded from this 1 year warranty.
2) 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 product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.