

Wireless System



Noise resistance

Uses the 2.4 GHz ISM frequency band
Frequency hopping: Every 2 ms (Fastest)

Communication cables not required

Reduced wiring work, space, and cost
Minimized disconnection risk

Communication distance/speed, Response time*1

| | Communication distance | Communication speed | Response time |
|-------------------------|------------------------|---------------------|---------------|
| Compact Type EXW1 | 100 m | 1 Mbps | 2 ms |
| | | 250 kbps | 5 ms |
| Modular Type EX600-W | 10 m | 250 kbps | 5 ms |

*1 For the EXW1 construction, it depends on the operating environment.

New **IO-Link** has been added to the compact type EXW1 Series.

Compact Type EXW1 Series p. 13

Compatible protocols

EtherCAT CC-Link **New** **IO-Link**

Compact and lightweight

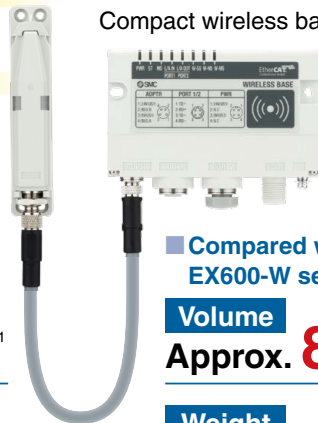
■ Compared with the EX600-W series (base)

Volume
Approx. **74%** reduction*1

Weight
Approx. **70%** reduction*1

*1 The EtherCAT base includes a wireless adapter (body + installation plate).

Compact wireless base



■ Compared with the EX600-W series (remote)

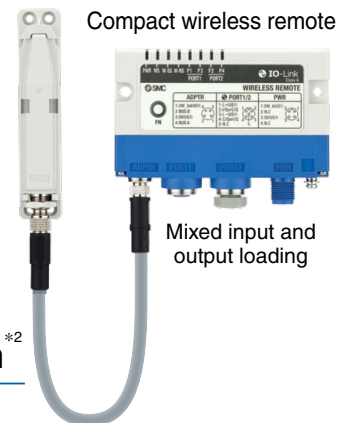
Volume
Approx. **81%** reduction*2

Weight
Approx. **79%** reduction*2

*2 For the existing remote, M12 connector/8 digital outputs specification

Communication distance: 100 m

Compact wireless remote



Mixed input and output loading

Modular Type EX600-W Series p. 36

Compatible protocols

EtherNet/IP PROFINET

Modular connection is possible.

- Up to 9 stations can be connected to the digital/analog unit.
- Connector type: M12/M8, D-sub, Spring type terminal block



Communication distance: 10 m



For countries/regions in which wireless is supported

This product cannot be used in countries/regions where wireless is not supported. Refer to page 54 for details on countries/regions in which the product can be used.

EXW1/EX600-W Series



CAT.E02-28F

Compact EXW1

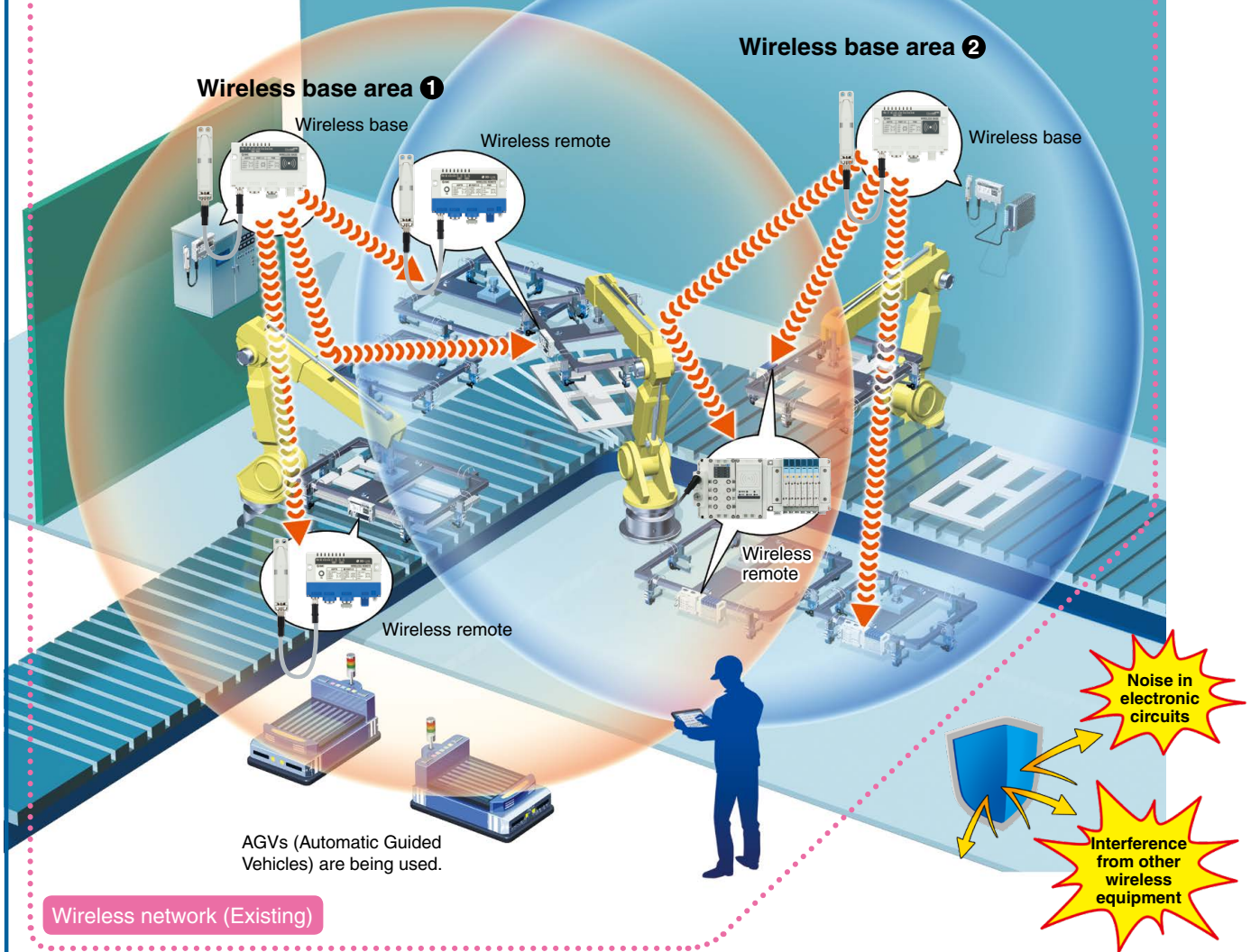
Modular EX600-W

Provides communication stability in FA environments

- Even if multiple wireless bases are in use in the same communication area, each wireless base is able to effectively communicate with the remotes they are paired with. Each wireless base is able to identify its wireless remotes by their P.I.D.
- * P.I.D.: Product I.D.

Stable communication is possible.

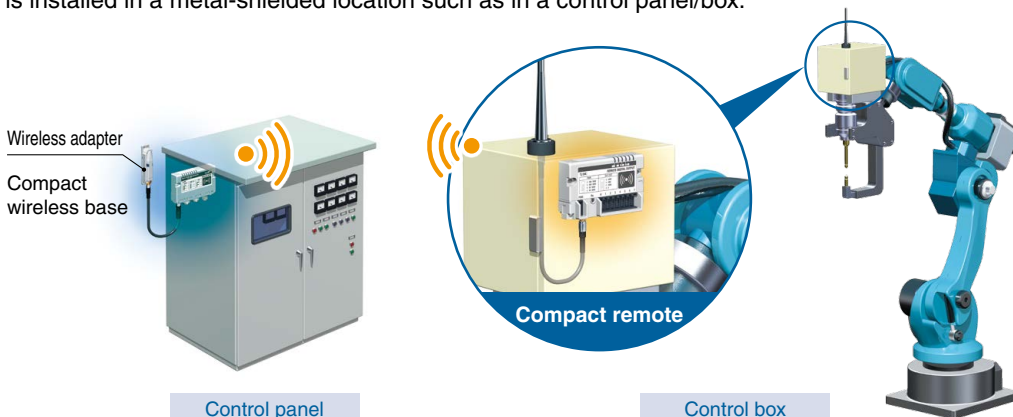
- Communication is possible in environments with various forms of propagation (transmission, reflection, etc.).
- Communication is also possible within the same area as existing wireless networks such as wireless LANs and AGVs.



Antenna support

Compact EXW1

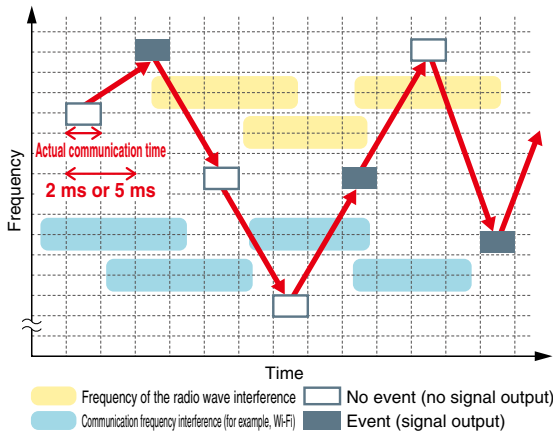
Communication is possible with a wireless adapter or external antenna even when the wireless base/remote is installed in a metal-shielded location such as in a control panel/box.



Frequency hopping/Event communication system

Compact EXW1

Modular EX600-W



Frequency hopping

A stable wireless environment is established using an original protocol which is not affected by interference. Interference from other wireless equipment is reduced.

Frequency hopping cycle
2 ms*1
or
5 ms

Event communication system

*1 For the EXW1 only

Wireless communication is performed only when there is a variation in the information, thereby suppressing the frequency of radio wave output in wireless communication and reducing interference with other wireless devices.

F.C.S. (Frequency channel select) function supported

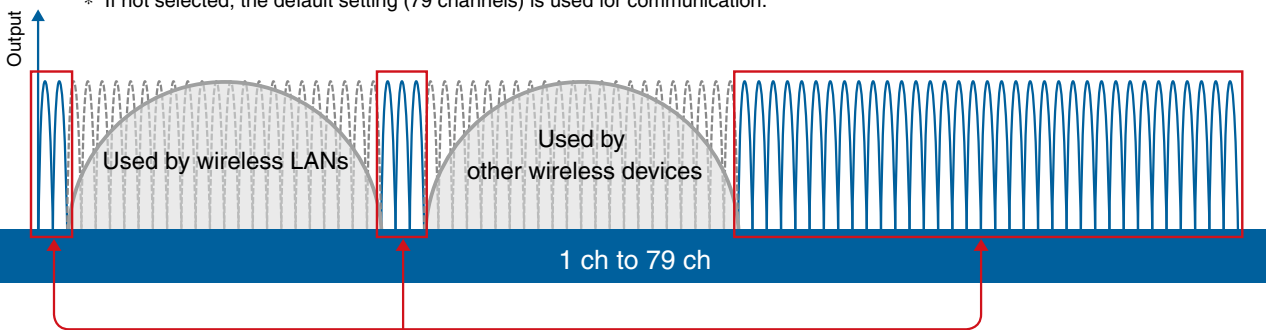
Compact EXW1

This is a function that allows for the selection of the frequency channel to be hopped to via frequency hopping. When the frequency used by wireless LANs, AGVs, or other wireless devices is known, selecting a different frequency channel will allow for hopping only to the selected frequency channel, thereby reducing communication collisions with other wireless devices and stabilizing communication.

* The number of selectable frequency channels varies depending on the country of use.

| Symbol | Number of selectable frequency channels | Applicable countries |
|--------|---|---|
| E | Min. 5/Max. 79 channels | Radio Law certified countries other than the U.S., Canada, South Korea, Brazil, Taiwan, Argentina, and Mexico |
| N | Min. 15/Max. 79 channels | Radio Law certified countries including the U.S., Canada, South Korea, Brazil, Taiwan, Argentina, and Mexico |

* If not selected, the default setting (79 channels) is used for communication.



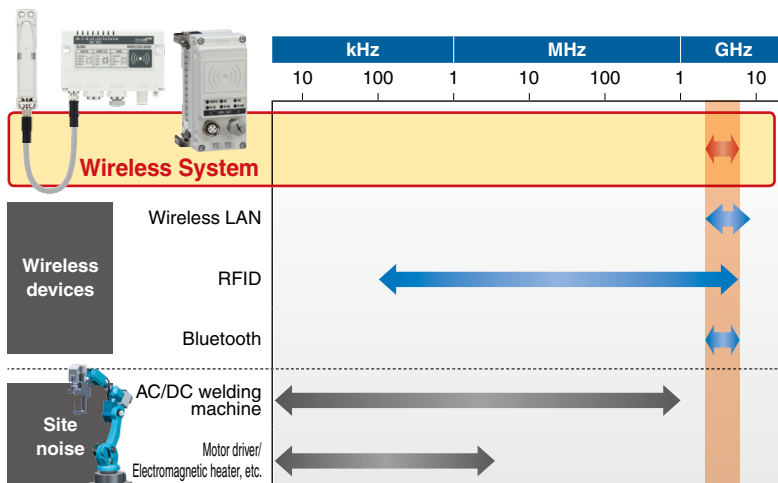
Hopping/communicating with the frequency channel within the selected red frame

Frequency band used

Compact EXW1

Modular EX600-W

Uses the 2.4 GHz ISM frequency band



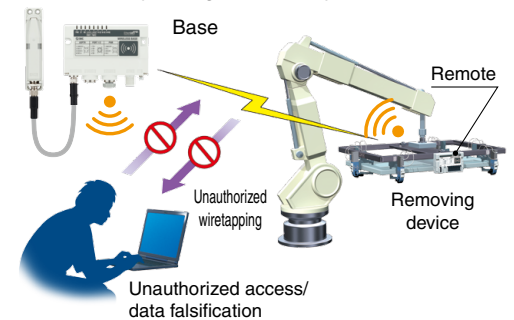
* ISM (Industrial, Scientific, and Medical) radio bands: Frequency bands allocated for industrial, scientific, and medical applications

High security using encryption

Compact EXW1

Modular EX600-W

Unauthorized access from outside is prevented by using data encryption.



Remote high-speed connection

Compact EXW1

Modular EX600-W

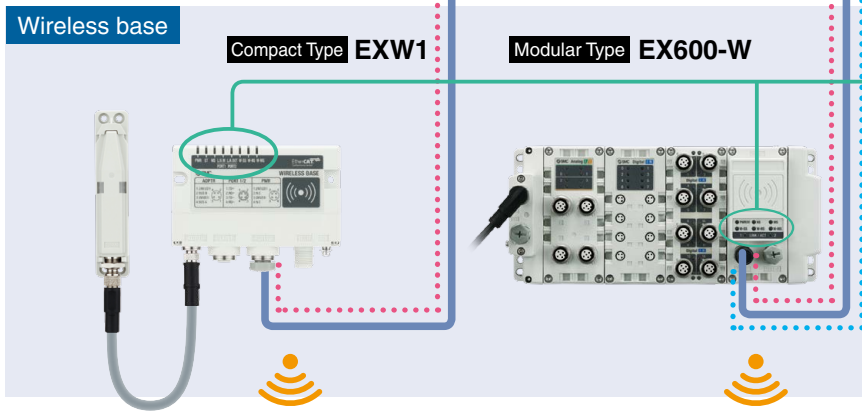
To start of communication: Min. 250 ms

* Depends on the communication environment

Product diagnosis

Compact EXW1 Modular EX600-W

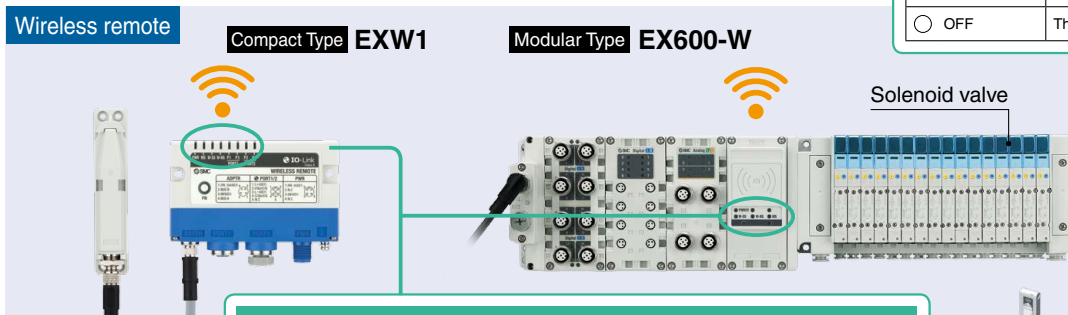
Diagnostic signals, LEDs on the base/remote, Web function, and setting software (IO Configurator) can be used for product diagnostics.



LED display for bases

The LED display can be used to identify the installation location and communication status according to the received signal strength level.

| W-SS (Radio wave receiving intensity (For communication from remote to base)) | |
|---|--|
| Green LED is ON. | The received power level of all remotes is 3. |
| Green LED flashes. (1 Hz) | There are connected remotes with a received power level of 2. |
| Green LED flashes. (2 Hz) | There are connected remotes with a received power level of 1. |
| Red LED flashes. | All the remotes that support protocol V.1.0 are not connected. |
| Orange LED flashes. | All the remotes that support protocol V.2.0 are not connected. |
| OFF | The remote module is not registered. |



LED display for remotes

The LED display can be used to identify the installation location and communication status according to the received signal strength level.

| W-SS (Radio wave receiving intensity (For communication from base to remote)) | | | |
|---|--------------------------------|---------------------|---|
| Green LED is ON. | The received power level is 3. | Red LED flashes. | The base that supports protocol V.1.0 is not connected. |
| Green LED flashes. (1 Hz) | The received power level is 2. | Orange LED flashes. | The base that supports protocol V.2.0 is not connected. |
| Green LED flashes. (2 Hz) | The received power level is 1. | OFF | The base module is not registered. |

PC + Setting software
Setting software (IO Configurator)

Diagnostic signal

The connection status of the wireless system can be judged by the PLC during operation by the diagnostic signal.

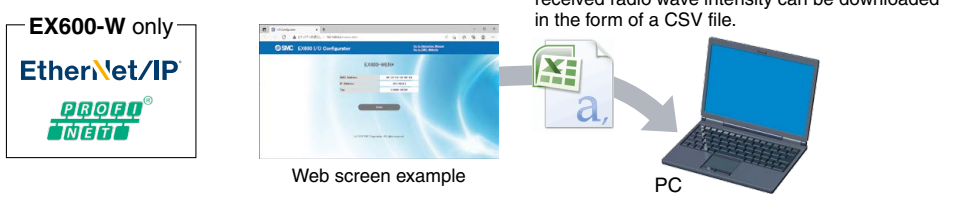
<Diagnostic signal output conditions>

- When an error occurs in the wireless system (base or remote)
- When communication from the remote cannot be received

Web function

By connecting the base and PC, you can set up the product/wireless communication and check the communication status on the web screen. Log data of the number of wireless communication retries and of the received signal strength can be generated from the web screen and downloaded in a CSV file. The wireless environment and installation location can be optimized by checking the number of retries and the received radio wave intensity.

* Refer to the logging function on page 4.



The log files showing the number of retries or the received radio wave intensity can be downloaded in the form of a CSV file.

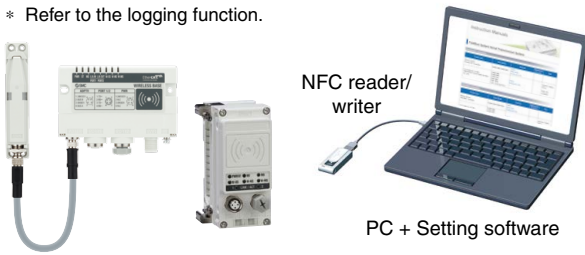
Product diagnosis

Compact EXW1 Modular EX600-W

Setting software (IO Configurator)

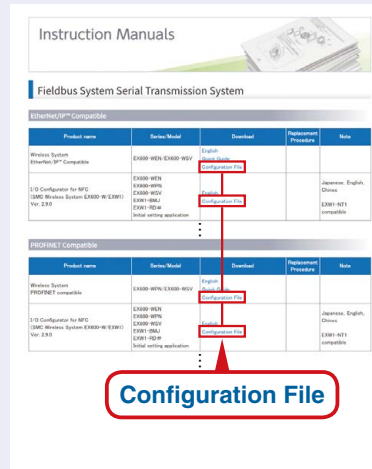
The NFC reader/writer can be used with the setting software to perform various checks and setting without contact. (NFC: Near Field Communication)

- Base communication configuration
 - Setting of the I/O points for the system, base, and remote
 - Pairing of the base and remote
 - I/O monitoring
 - Monitoring of diagnostic data
- * Refer to the logging function.

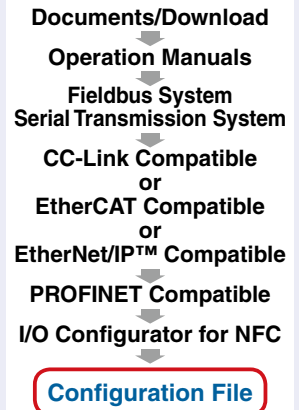


Setting software

Download the setting software from the "configuration file."



From the SMC website



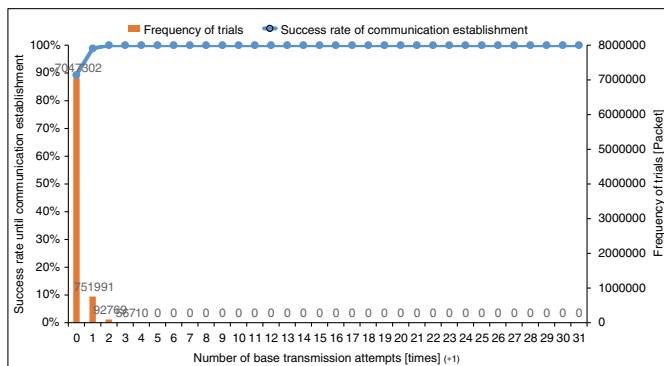
Logging function

Compact EXW1 Modular EX600-W

The following information is saved in the internal memory of the product. It can be downloaded and visualized from the web function or the setting software (IO Configurator).

Number of retries

The number of retries (communication attempts) can be checked.

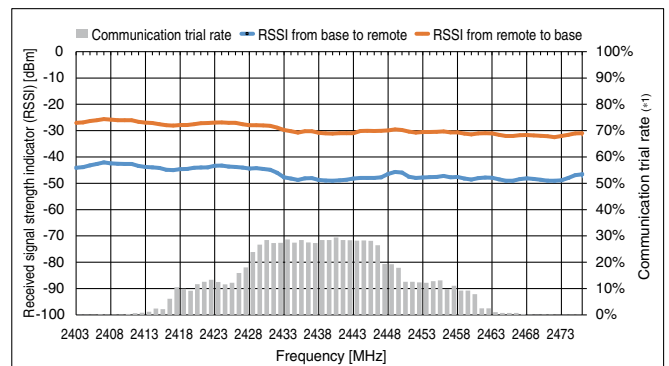


Graph 1. Communication response characteristics

Received signal strength indicator

The communication trial rate and received signal strength indicator (RSSI) can be checked for every frequency channel.

Number of retries, Received signal strength indicator, Operation status



Graph 2. Received signal strength indicator and communication trial rate characteristics with respect to frequency

Operation status

Error details, time information (timestamp), and remote numbers can be checked.

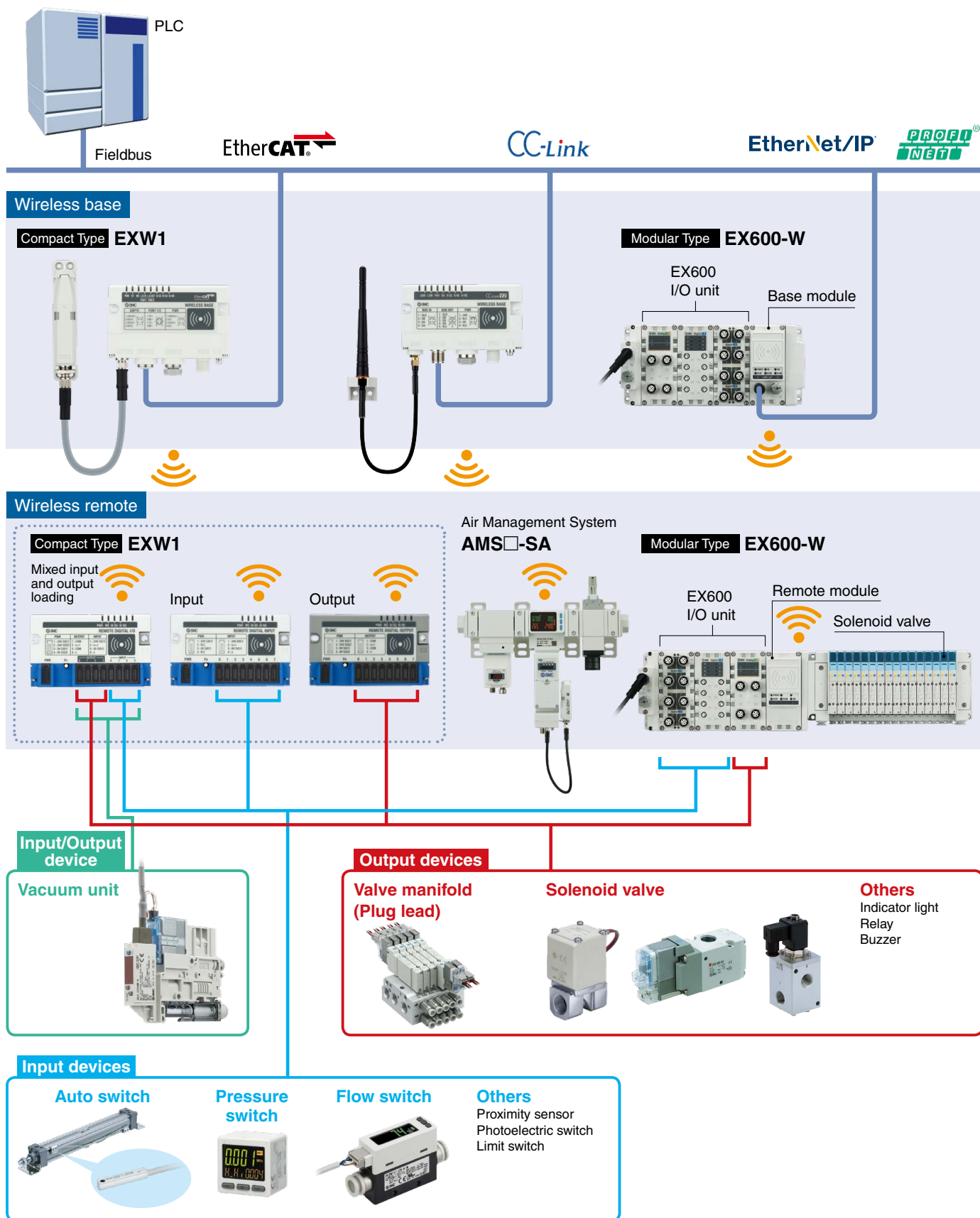
* Up to 30 pieces can be displayed.

| Information | | | | | |
|---|-----|-----------------|------|---------|------------|
| I/O monitor | | | | | |
| Properties | | | | | |
| Event | | | | | |
| Wireless | | | | | |
| <div style="display: flex; justify-content: space-around;"> ALL CLEAR Export Refresh </div> <div style="display: flex; justify-content: center; margin-top: 5px;"> Power on R/W detected </div> | | | | | |
| Timestamp | WCh | TAG | Unit | Channel | Status |
| 2020/12/28 10:26:25 | 5 | EX600-WSV1 | 3 | 5 | 0x00000001 |
| 2020/12/26 8:00:00 | 3 | LINE4-S5-R-HAND | 1 | 2 | 0x00000002 |
| 2020/12/24 5:33:35 | 2 | LINE4-S5-L-HAND | 1 | 2 | 0x00000002 |
| 2020/12/22 3:07:10 | 3 | LINE4-S5-R-HAND | 1 | 4 | 0x00000003 |
| 2020/12/20 0:40:45 | 1 | LINE4-S2-R-HAND | 1 | 4 | 0x00000004 |
| 2020/12/17 22:14:20 | 5 | EX600-WSV1 | 3 | 5 | 0x00000005 |
| 2020/12/15 19:47:55 | 4 | LINE4-S3-R-HAND | 3 | 5 | 0x00000006 |
| | | | | | |
| | | | | | |
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| | | | | | |
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| | | | | | |

The compact EXW1 and the modular EX600-W can be mixed.*1

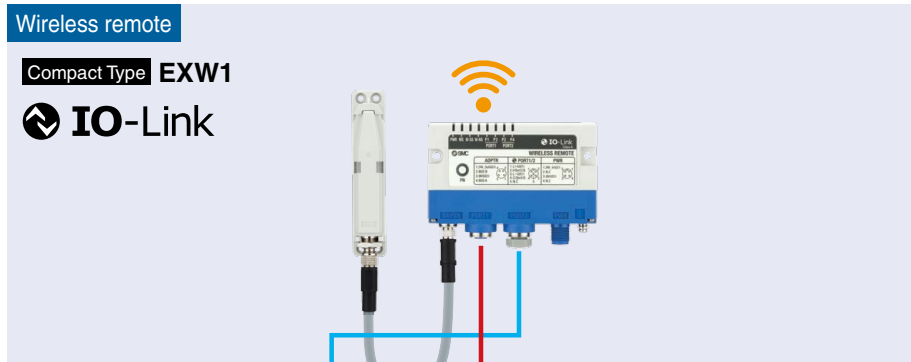
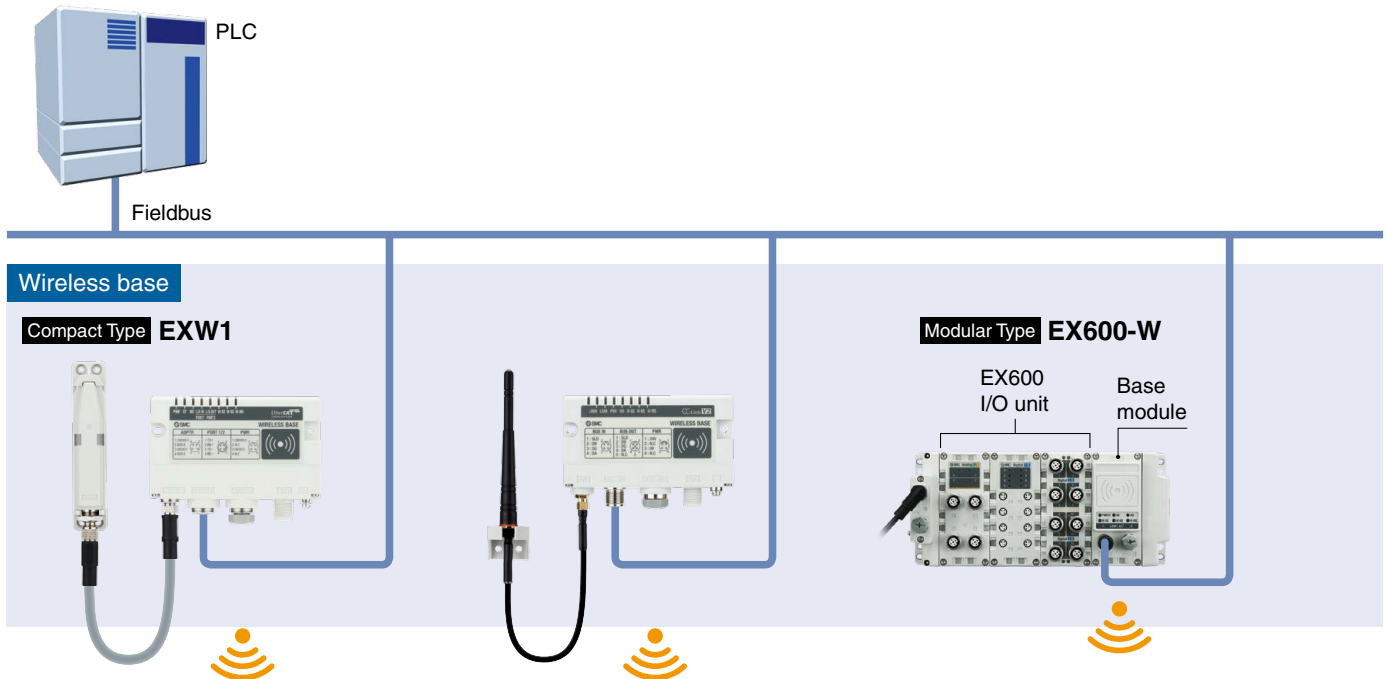
*1 When they are mixed, the communication speed/response time is limited to the EX600-W's specifications. (Refer to the system configuration examples.)

System Examples

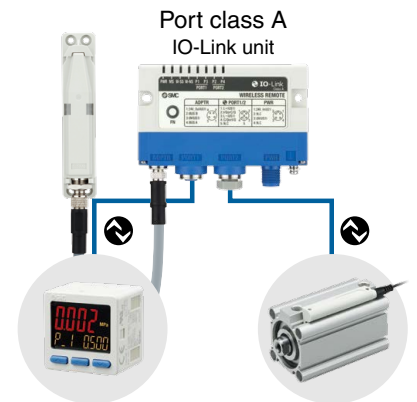


Configuration Examples for the Compact Type EXW1 Series IO-Link Specification

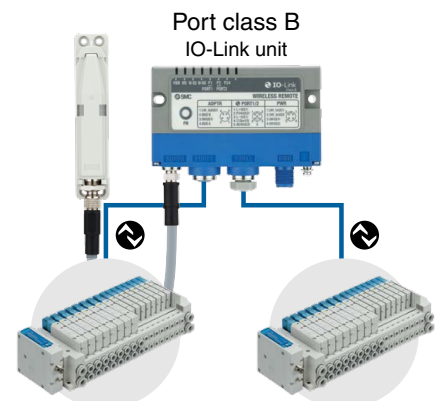
System Examples



Supports both port class A and port class B



For connecting IO-Link sensors
Pressure sensors, flow sensors,
actuator position sensors,
electro-pneumatic regulators, etc.



For connecting IO-Link compatible
SI units (for valve driving)

Input devices (IO-Link compatible)

Actuator position sensor

Pressure switch

Flow switch

Others

Proximity sensor
Photoelectric switch
Limit switch

Output devices (IO-Link compatible)

SI unit for valve

Electro-pneumatic regulator
Electronic vacuum regulator

Step motor controller

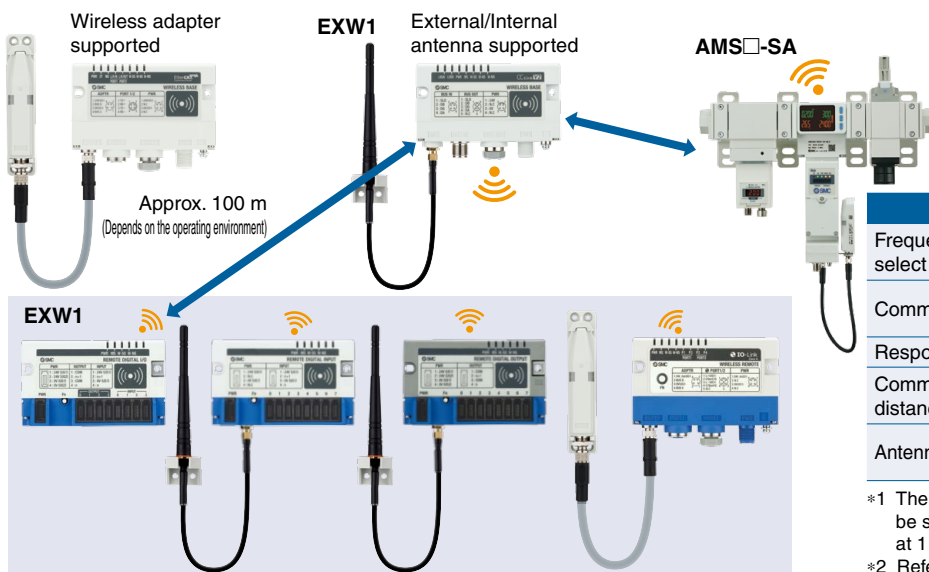
Others

Indicator light
Relay
Buzzer

System Configuration Examples

Compact Type Configuration example when using the EXW1 series base ①

(When the remote configuration is for the EXW1 series or air management hub only)



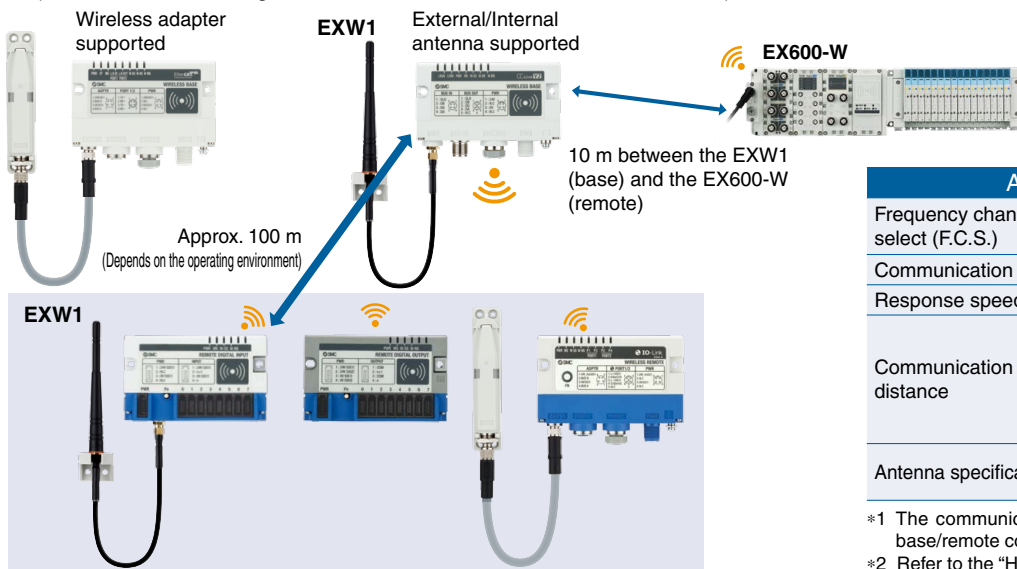
| Applicable functions | |
|-----------------------------------|--|
| Frequency channel select (F.C.S.) | Applicable |
| Communication speed | Select from 1 Mbps or 250 kbps.*1 |
| Response speed | Select from 2 ms or 5 ms.*1 |
| Communication distance | Approx. 100 m (Depends on the operating environment) |
| Antenna specification*2 | Wireless adapter and External/Internal antenna supported |

*1 The communication speed and response speed cannot be selected for the Air Management Hub. They are fixed at 1 Mbps and 2 ms, respectively.

*2 Refer to the "How to Order" section.

Compact Type Configuration example when using the EXW1 series base ②

(When the remote configuration is for the EX600-W and the EXW1 series)

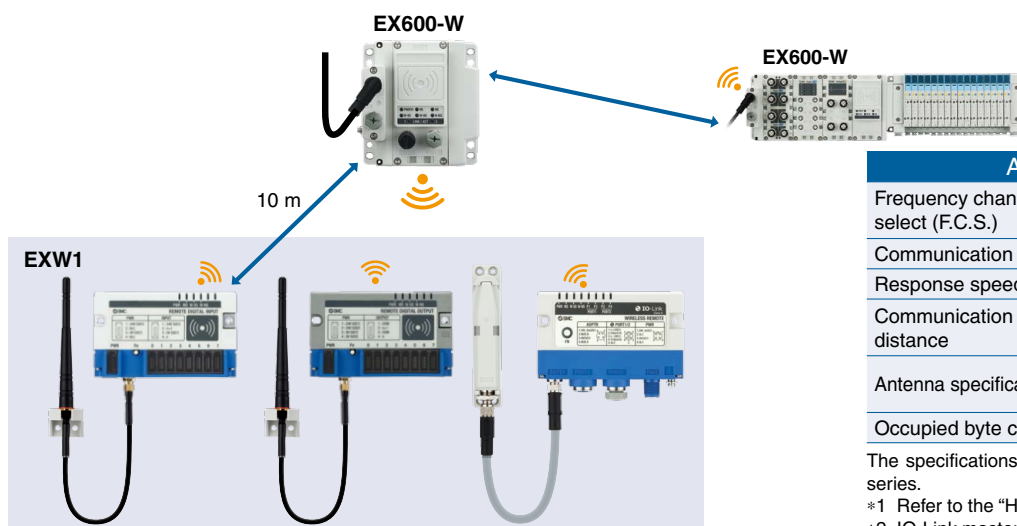


| Applicable functions | |
|-----------------------------------|--|
| Frequency channel select (F.C.S.) | Not applicable |
| Communication speed | 250 kbps |
| Response speed | 5 ms |
| Communication distance | Approx. 100 m between the EXW1 base and remote (Depends on the operating environment) 10 m*1 between the EXW1 (base) and the EX600-W (remote) |
| Antenna specification*2 | Wireless adapter and External/Internal antenna supported |

*1 The communication distance varies depending on the base/remote combination.

*2 Refer to the "How to Order" section.

Modular Type Configuration example when using the EX600-W series base



| Applicable functions | |
|-----------------------------------|-------------------------------------|
| Frequency channel select (F.C.S.) | Not applicable |
| Communication speed | 250 kbps |
| Response speed | 5 ms |
| Communication distance | 10 m |
| Antenna specification*1 | External/Internal antenna supported |
| Occupied byte count*2 | 16 bytes each for input/output |

The specifications are the same as those of the EX600-W series.

*1 Refer to the "How to Order" section.

*2 IO-Link master only

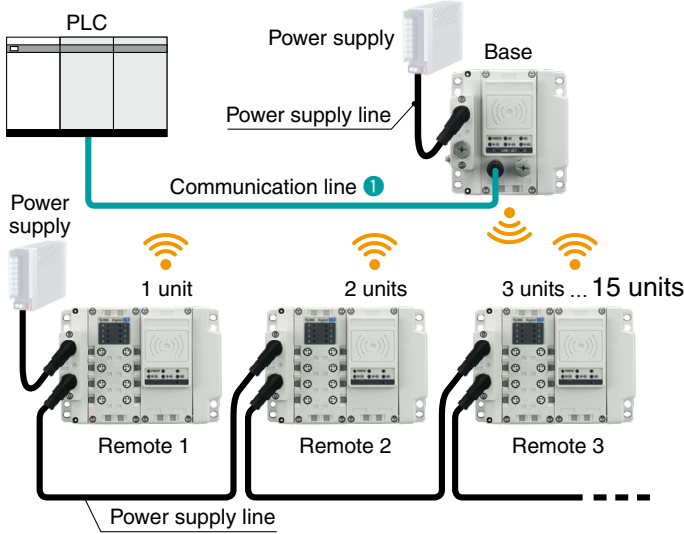
Wiring material cost and installation time can be reduced.*1

Compact EXW1

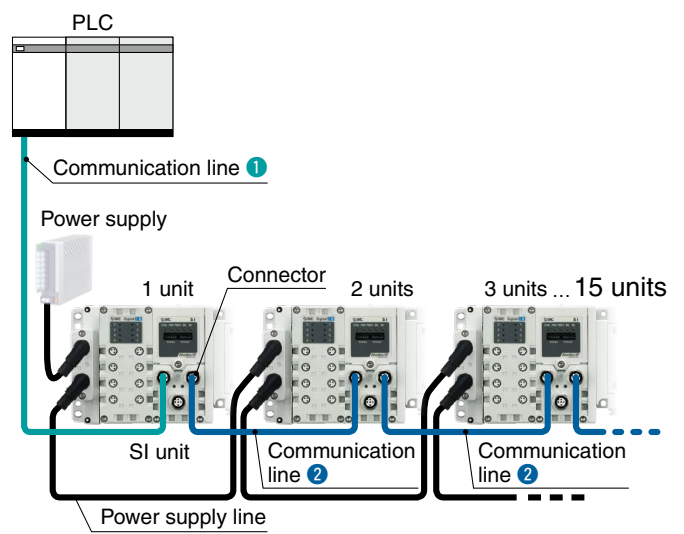
Modular EX600-W

*1 For the EX600-W modular type

Wireless System



Existing (Wired) System



SI unit: Comparison when 15 units are connected

| | Number of communication devices | Communication line | | Communication connectors required |
|-------------------------|---------------------------------|----------------------------------|--------------------------------------|-----------------------------------|
| | | ① | ② | |
| Wireless system | Base: 1 unit Remote: 15 units | 1 line (Connector at one end) | — | 1 location |
| Existing (Wired) system | SI unit: 15 units | 1 line (Connector at one end) | 14 lines (Connector at both ends) | 29 locations |

Interchangeability maintained

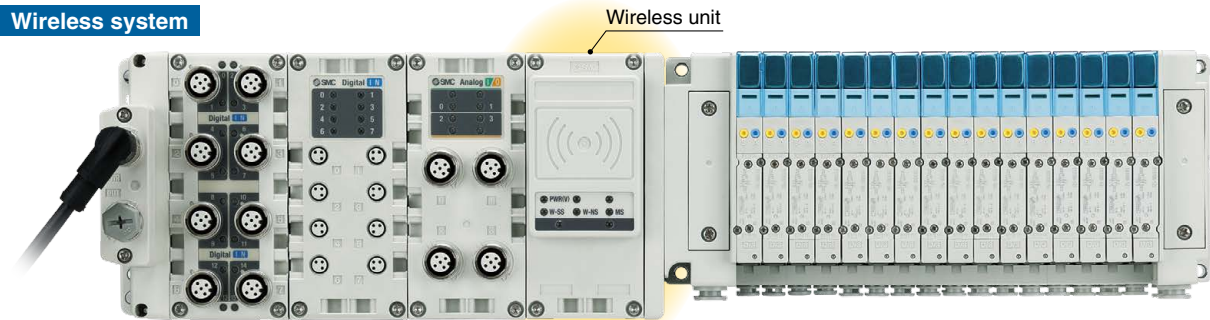
Modular EX600-W

Connection interchangeability between EX600 series SI units is maintained.

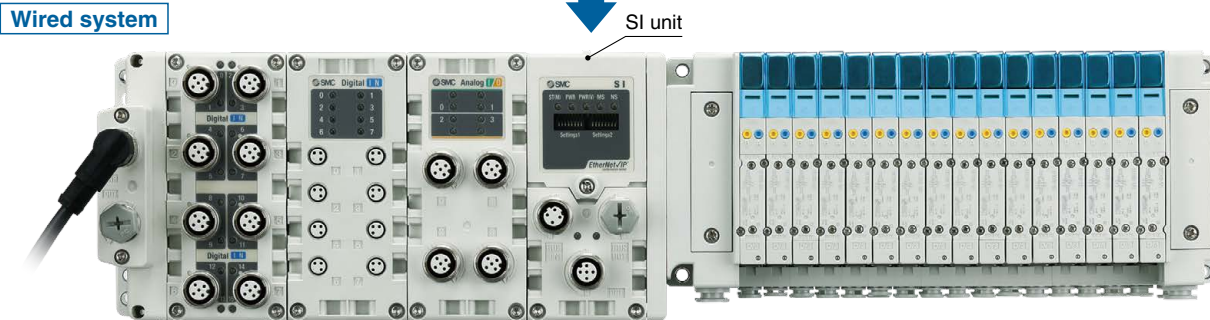
The replacement of wireless and wired systems is possible.

* The max. I/O points of the base/remote module is limited to 128 points.

Wireless system



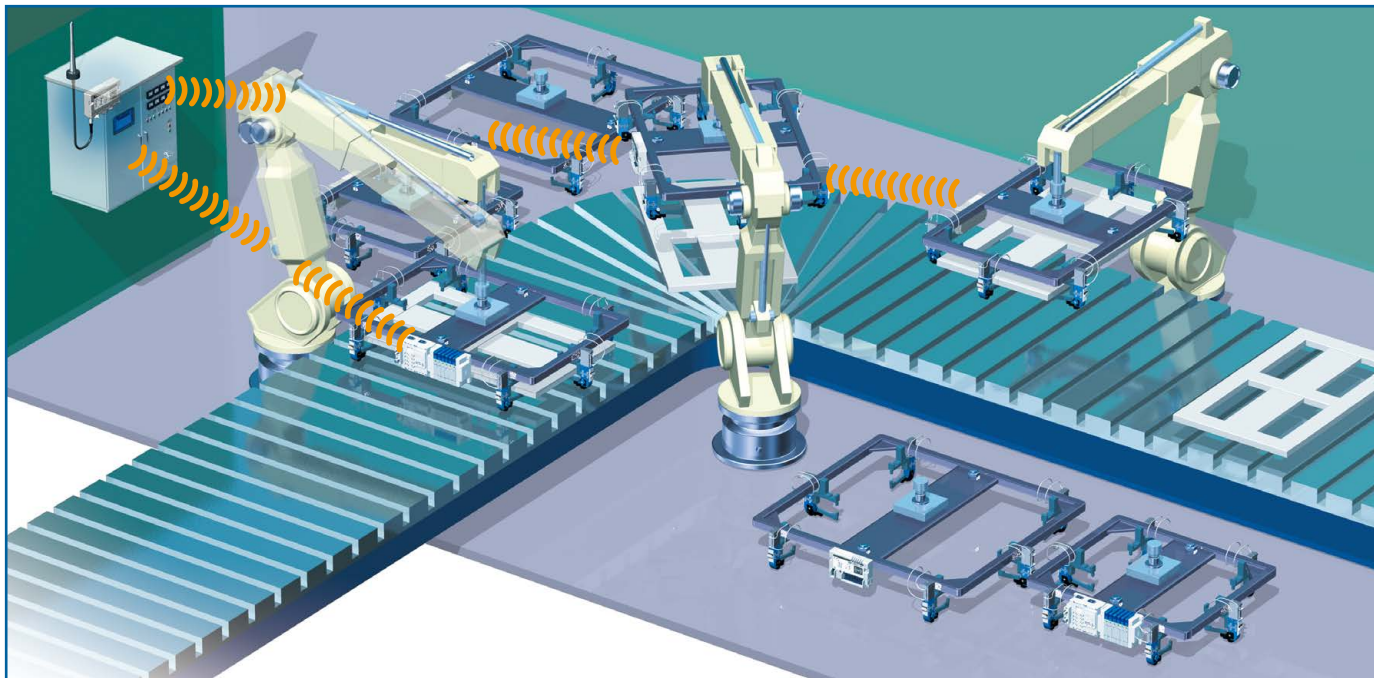
Wired system



Application Examples

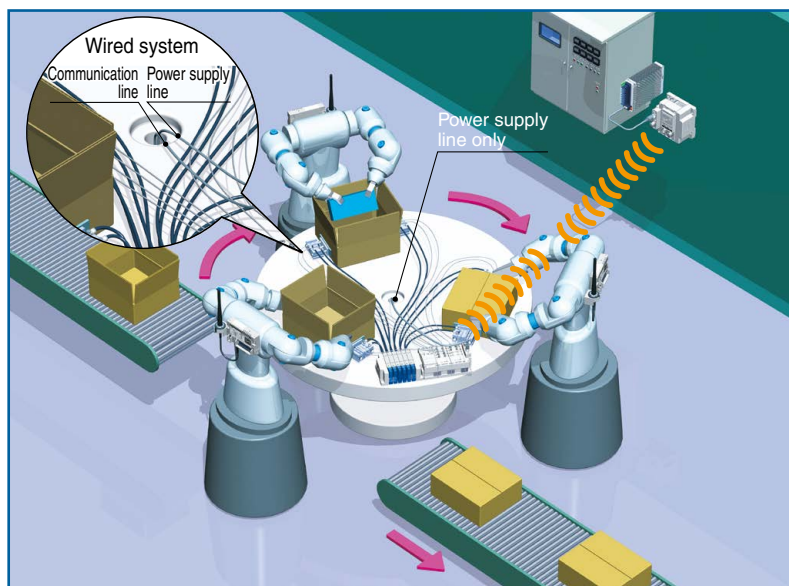
For tool changing

- A communication cable is not necessary for moving parts.
- Minimized disconnection risk
- Shorter time for establishing communication (startup time)



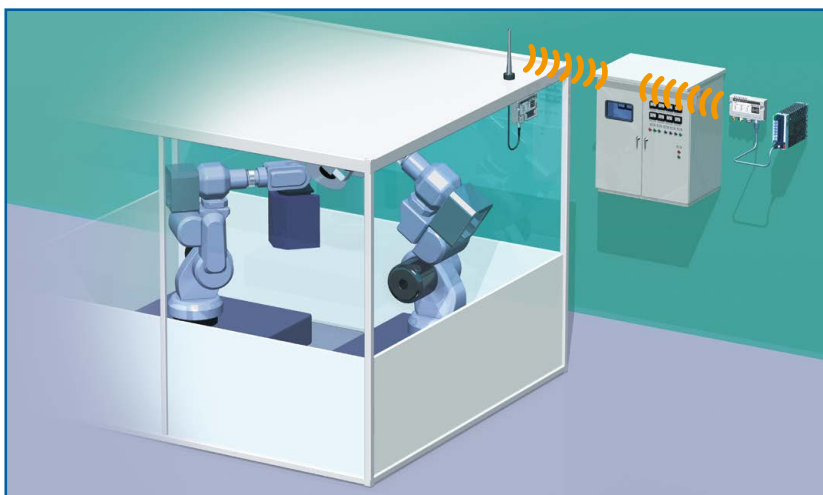
For rotary tables

- Minimized disconnection risk
- Smaller diameter communication cable/tubing



For the blocking of radio waves

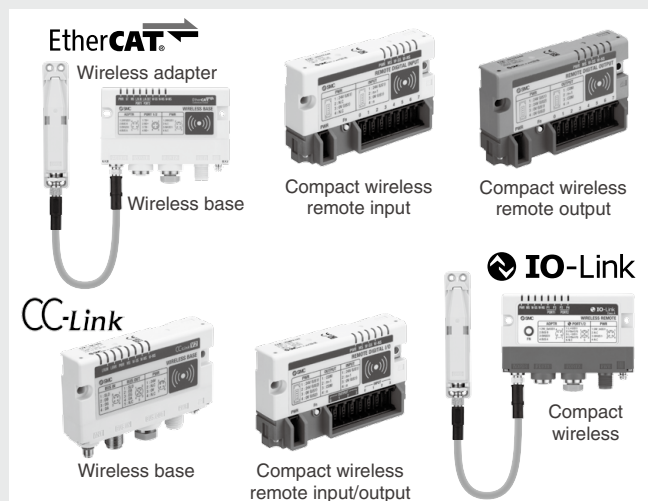
Communication is possible by placing the external antenna outside the control panel when the unit is installed in a metal box, etc.



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Compact Type *EXW1 Series*



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<CC-Link>

| | |
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<IO-Link>

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<IO-Link>

| | |
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Dimensions/Parts Description

<EtherCAT>

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<CC-Link>

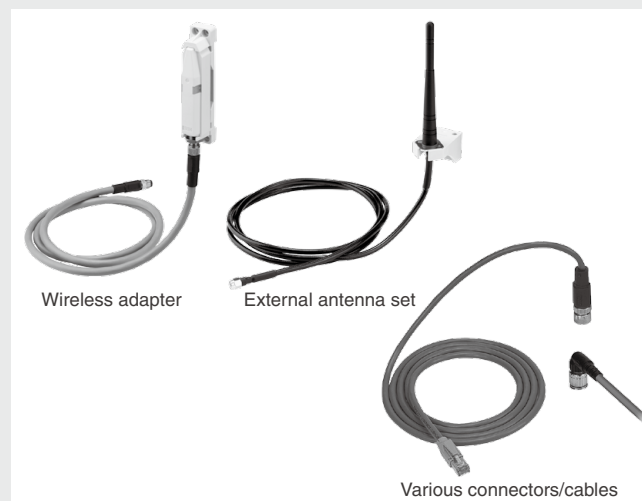
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<IO-Link>

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Accessories/Made to Order

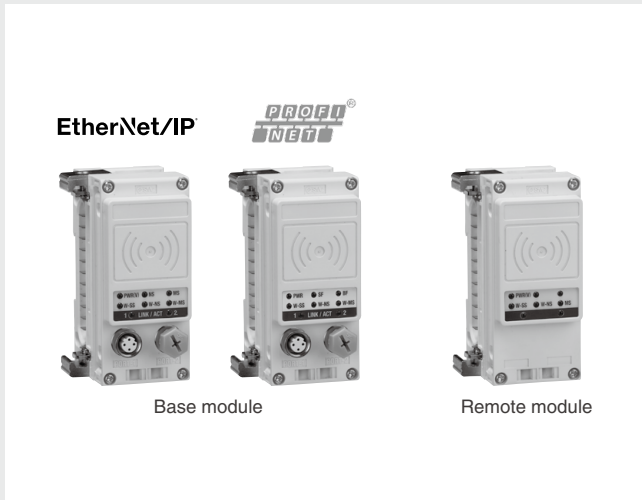


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Made to Order

| | |
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Modular Type *EX600-W Series*



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Specifications

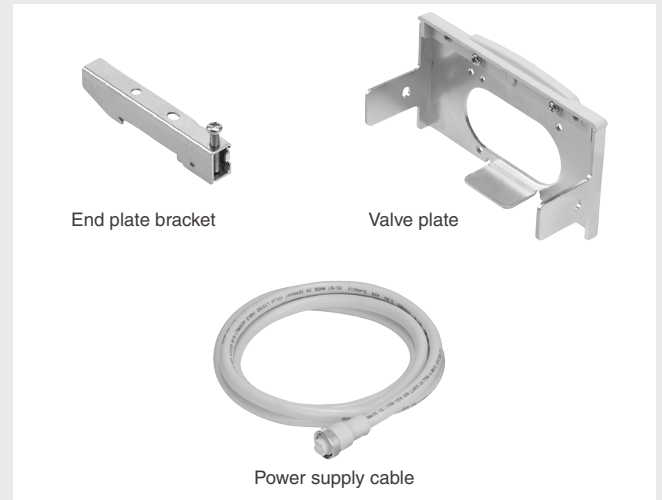
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EXW1 Series

Accessories

Made to Order

EX600-W Series

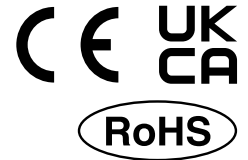
Accessories

Technical Data

Country-specific Radio Law Compliance Table

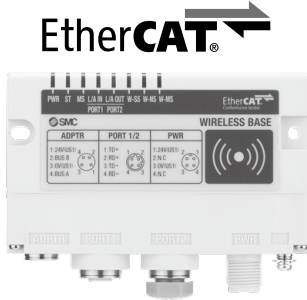
Specific Product Precautions

Wireless System Compact Type **EXW1 Series**



How to Order

Compact Wireless Base (EtherCAT)



EXW1 - BECAC

Compact wireless

Base

Communication protocol

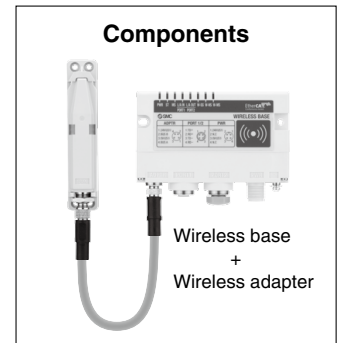
Antenna specification for wireless communication*1

| Symbol | Protocol |
|--------|----------|
| EC | EtherCAT |

| Symbol | Antenna specification |
|--------|-----------------------|
| C | Wireless adapter |

Connector

| Symbol | Connector interface |
|--------|---------------------|
| A | M12 |



*1 The EtherCAT compatible wireless base is a wireless system base used in combination with a wireless adapter. When using this product, order the wireless adapter and wireless adapter cable separately.

Wireless Adapter



EXW1 - A1 1 N

Compact wireless

Wireless adapter

Frequency channel selection

| Symbol | Applicable model |
|--------|--|
| 1 | EXW1-BECAC Air Management Hub (EXA1-□) |

| Symbol | Number of selectable frequency channels | Applicable countries |
|--------|---|---|
| E | Min. 5/Max. 79 channels | Radio Law certified countries other than the U.S., Canada, South Korea, Brazil, Taiwan, Argentina, and Mexico |
| N | Min. 15/Max. 79 channels | Radio Law certified countries including the U.S., Canada, South Korea, Brazil, Taiwan, Argentina, and Mexico |

* A dedicated cable is required to connect the wireless base and wireless adapter. When using this product, order the wireless adapter cable separately. An installation plate (EXW1-AB4) is included as an accessory.

* Select this according to the country of use.

* Applicable countries differ depending on the part number. Before purchasing, refer to the "Country-specific Radio Law Compliance Table" on page 54.

Wireless Adapter Cable

With connector on both sides
(Socket/Plug)



EXW1 - AC1 - X1 [Cable length: 300 mm]

* Select a secondary battery compatible cable from below.

• Secondary battery compatible

EXW1 - AC001 - SAPU [Cable length: 100 mm]

EXW1 - AC030 - SSPS [Cable length: 2950 mm]

* This cable is required to connect the wireless base and wireless adapter.

How to Order

Compact Wireless Base (CC-Link)



EXW1 - B M J A B E

Communication protocol

| Symbol | Protocol |
|-----------|----------|
| MJ | CC-Link |

Connector

| Symbol | Connector interface |
|----------|---------------------|
| A | M12 |

Frequency channel selection

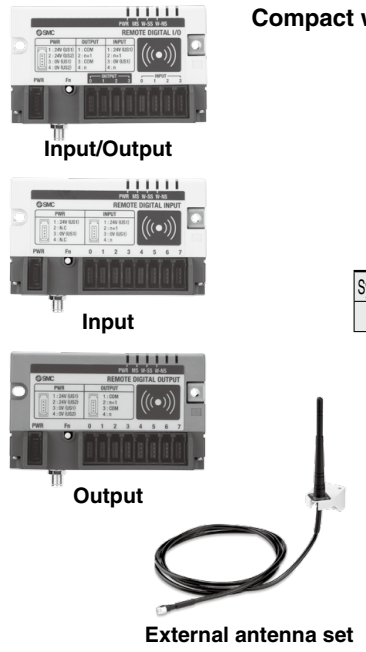
| Symbol | Number of selectable frequency channels | Applicable countries |
|----------|---|---|
| E | Min. 5/Max. 79 channels | Radio Law certified countries other than the U.S., Canada, South Korea, Brazil, Taiwan, Argentina, and Mexico |
| N | Min. 15/Max. 79 channels | Radio Law certified countries including the U.S., Canada, South Korea, Brazil, Taiwan, Argentina, and Mexico |

- * Select this according to the country of use.
- * Applicable countries differ depending on the part number. Before purchasing, refer to the "Country-specific Radio Law Compliance Table" on page 54.

Antenna specification for wireless communication

| Symbol | Antenna specification*5 |
|-----------------|-------------------------|
| A *6 | Internal antenna |
| B *7, *8 | External antenna |

Compact Wireless Remote



EXW1 - R D M P E3 B E

Type

| Symbol | Description |
|----------|-------------|
| D | Digital |

Type

| Symbol | Description |
|----------|--------------|
| X | Input |
| Y | Output |
| M | Input/Output |

Polarity

| Symbol | Description |
|-------------|-------------|
| P *1 | PNP |
| N *2 | NPN |

Frequency channel selection

| Symbol | Number of selectable frequency channels | Applicable countries |
|----------|---|---|
| E | Min. 5/Max. 79 channels | Radio Law certified countries other than the U.S., Canada, South Korea, Brazil, Taiwan, Argentina, and Mexico |
| N | Min. 15/Max. 79 channels | Radio Law certified countries including the U.S., Canada, South Korea, Brazil, Taiwan, Argentina, and Mexico |

- * Select this according to the country of use.
- * Applicable countries differ depending on the part number. Before purchasing, refer to the "Country-specific Radio Law Compliance Table" on page 54.

Antenna specification for wireless communication

| Symbol | Antenna specification*5 |
|-----------------|-------------------------|
| A *6 | Internal antenna |
| B *7, *8 | External antenna |

Connector and number of points/ports

| Symbol | Description | |
|--------------|-------------|------------------------------------|
| | Connector | Number of points/ports |
| E3 *3 | e-CON | Input: 8 inputs/ Output: 8 outputs |
| E4 *4 | e-CON | 16 points |

- *1 Can be selected with type "M"
- *2 Available for all types
- *3 Can be selected with type "M"
- *4 Can be selected with types "X" and "Y"
- *5 The antenna specification selected cannot be changed after purchase.
- *6 The external antenna set cannot be used for the internal antenna specification.
- *7 An external antenna set is included with the external antenna specification.
- *8 It is not possible to use the external antenna set without connecting it with the external antenna specification.

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data


Country-specific Radio Law Compliance Table

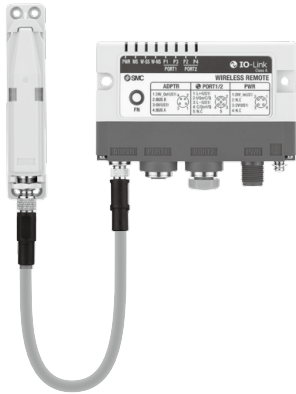
Specific Product Precautions

EXW1 Series

How to Order

Compact Wireless Remote (IO-Link)

 IO-Link



EXW1 - R L A P A8 C

Wireless remote

Type

| Symbol | Description |
|--------|----------------|
| L | IO-Link master |

Type

| Symbol | Description |
|--------|-------------|
| A | Class A |
| B | Class B |

Antenna specification for wireless communication

| Symbol | Connector interface |
|--------|---------------------|
| C | Wireless adapter |

Connector and ports

| Symbol | Connector/Ports |
|--------|-----------------|
| A8*1 | M12/4-port |
| A7*2 | M12/2-port |

*1 Can be selected with type "Class A"

*2 Can be selected with type "Class B"

Polarity

| Symbol | Description |
|--------|-------------|
| P | PNP |

NFC Reader/Writer

EXW1 - NT1

- * Order a fixing bracket.
- * A USB cable (3 m) is also included.

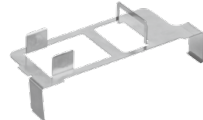



Fixing bracket (Option)

When optional parts are required, order with the part number below.

EXW1-AB 2

Variations

| Symbol | Description | Appearance | |
|--------|--------------|--|---|
| | | Single unit | Product mounting view |
| 2 | For the EXW1 |  |  |

Specifications: Wireless Communication, Wireless Adapter, Compact Wireless Base

Wireless Communication Specifications

| Item | Specifications |
|---|--|
| Protocol | SMC original protocol (SMC encryption) |
| Between compact EXW1 remote | V.2.0 or V.1.0 (Selectable) |
| Between modular EX600-W remote | V.1.0 |
| Radio wave type (spread) | Frequency Hopping Spread Spectrum (FHSS) |
| Frequency | 2.4 GHz (2403 to 2481 MHz) |
| Number of frequency channels | 5 to 79 ch or 15 to 79 ch (Refer to page 2.) |
| Frequency channel selection | Applicable (Refer to page 2.) |
| Channel bandwidth | 1.0 MHz |
| Communication speed | V.2.0 1 Mbps |
| | V.1.0 250 kbps |
| Communication distance | Approx. 100 m (Depends on the operating environment) |
| Countries in which Radio Law certified | Refer to page 54 for the latest information regarding in which countries the product is certified. |
| Number of connected wireless remotes*1 | Max. 127 units (15/31/63/127 units) |

*1 The number of connected units varies depending on the product.

Wireless Adapter Specifications (EXW1-A11□)

Electrical Specifications

| Item | Specifications |
|---|----------------|
| US1 (for control) power supply voltage range | 24 VDC ±10% |
| Internal current consumption | 50 mA or less |

General Specifications

| Item | Specifications |
|-----------------------------|--|
| Enclosure | IP67 |
| Vibration resistance | EN 61131-2 compliant 5 ≤ f < 8.4 Hz 3.5 mm 8.4 ≤ f < 150 Hz 9.8 m/s ² |
| Impact resistance | EN 61131-2 compliant, 147 m/s ² , 11 ms |
| Standards | CE/UKCA marking |
| Weight | 40 g (Body), 20 g (Installation plate) |

* Air bubbles may be visible on the exterior of the product, but this does not affect the product's performance.

Compact Wireless Base Specifications (EXW1-BECAC)

EtherCAT Communication Specifications

| Item | Specifications |
|---|---|
| Protocol | EtherCAT(Conformance Test Record V.2.3.0) |
| Communication speed | 100 Mbps |
| Occupation area (Number of inputs/outputs) | Max. 11784 inputs/11784 outputs (1473 bytes/1473 bytes) |
| Configuration file | ESI (XML file)*1 |
| Configuration | Online*2 |

*1 The configuration file can be downloaded from the SMC website.

*2 The control component (PLC etc..) should be supported an online configuration.

Electrical Specifications

| Item | Specifications |
|---|----------------|
| US1 (for control) power supply voltage range | 24 VDC ±10% |
| Internal current consumption | 150 mA or less |

General Specifications

| Item | Specifications |
|-----------------------------|--|
| Enclosure | IP67 |
| Vibration resistance | EN 61131-2 compliant 5 ≤ f < 8.4 Hz 3.5 mm 8.4 ≤ f < 150 Hz 9.8 m/s ² |
| Impact resistance | EN 61131-2 compliant, 147 m/s ² , 11 ms |
| Standards | CE/UKCA marking |
| Weight | 150 g |

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-Specific Radio Law Compliance Table

Specific Product Precautions

EXW1 Series

Specifications: Compact Wireless Base

Compact Wireless Base Specifications (EXW1-BMJA□)

CC-Link Communication Specifications

| Item | Specifications |
|--|---|
| Protocol | CC-Link (Ver. 1.10, Ver. 2.00) |
| Station type | Remote device station |
| Device type | Wireless equipment (Code 0x4B) |
| Station number | 1 to 64 |
| Communication speed | 156/625 kbps 2.5/5/10 Mbps |
| Configuration file | CSP+ file*1 |
| Occupation area (Number of inputs/outputs) | Max. (896 inputs/896 outputs) |
| Max. number of occupied stations | 4 stations |
| Supported functions | Cyclic transmission Extended cyclic transmission (Only when Ver. 2.00 is specified) Longer cable between stations |

*1 The configuration file can be downloaded from the SMC website.

Electrical Specifications

| Item | Specifications |
|--|------------------|
| US1 (for control) power supply voltage range | 24 VDC \pm 10% |
| Internal current consumption | 100 mA or less |

General Specifications

| Item | Specifications |
|----------------------|--|
| Enclosure | IP67 |
| Vibration resistance | EN 61131-2 compliant $5 \leq f < 8.4$ Hz 3.5 mm $8.4 \leq f < 150$ Hz 9.8 m/s ² |
| Impact resistance | EN 61131-2 compliant, 147 m/s ² , 11 ms |
| Standards | CE/UKCA marking |
| Weight | 150 g (Body), 100 g (External antenna set) |

Specifications: Compact Wireless Remote (EXW1-RD□)

Communication Specifications (Common)

| Item | Specifications |
|--|--|
| Protocol | SMC original protocol (SMC encryption) |
| Between compact EXW1 bases | V.2.0 or V.1.0 (Selectable) |
| Between modular EX600-W bases | V.1.0 |
| Radio wave type (spread) | Frequency Hopping Spread Spectrum (FHSS) |
| Frequency | 2.4 GHz (2403 to 2481 MHz) |
| Number of frequency channels | 5 to 79 ch or 15 to 79 ch (Refer to page 2.) |
| Frequency channel selection | Applicable (Refer to page 2.) |
| Channel bandwidth | 1.0 MHz |
| Communication speed | V.2.0 1 Mbps V.1.0 250 kbps |
| Communication distance | Approx. 100 m (Depends on the operating environment) |
| Countries in which Radio Law certified | Refer to page 54 for the latest information regarding in which countries the product is certified. |

Electrical Specifications (Input/Output Type)

| Item | Specifications | | |
|--|--|-------------------------------|--|
| | EXW1-RDMPE3□□ | EXW1-RDMNE3□□ | |
| US1 (for control/input) power supply voltage range | 24 VDC ±10% | | |
| US2 (for output) power supply voltage range | 24 VDC ±10% | | |
| Internal current consumption | 100 mA or less | | |
| Isolation | Yes (between US1 and US2) | | |
| Input | Number of points | 8 points (2 points/connector) | |
| | Type | PNP (-COM) NPN (+COM) | |
| | Max. sensor supply current | 0.3 A/connector, 1 A/unit | |
| | ON current | Typ. 5 mA | |
| | OFF current | 2 mA or less | |
| | ON voltage | 11 V or more | |
| | OFF voltage | 5 V or less | |
| Over current protection/detection function | Applicable | | |
| Output | Number of points | 8 points (2 points/connector) | |
| | Type | PNP (-COM) NPN (+COM) | |
| | Max. output current | 0.3 A/point, 2 A/unit | |
| | Over current protection/detection function | Applicable | |

Electrical Specifications (Input Type)

| Item | Specifications | | |
|--|----------------------------|--------------------------------|--|
| US1 (for control/input) power supply voltage range | 24 VDC ±10% | | |
| Internal current consumption | 100 mA or less | | |
| Input | Number of points | 16 points (2 points/connector) | |
| | Type | NPN (+COM) | |
| | Max. sensor supply current | 0.3 A/connector, 2 A/unit | |
| | ON current | Typ. 5 mA | |
| | OFF current | 2 mA or less | |
| | ON voltage | 11 V or more | |
| | OFF voltage | 5 V or less | |
| Over current protection/detection function | Applicable | | |

Electrical Specifications (Output Type)

| Item | Specifications | | |
|--|--|--------------------------------|--|
| US1 (for control/input) power supply voltage range | 24 VDC ±10% | | |
| US2 (for output) power supply voltage range | 24 VDC ±10% | | |
| Internal current consumption | 100 mA or less | | |
| Isolation | Yes (between US1 and US2) | | |
| Output | Number of points | 16 points (2 points/connector) | |
| | Type | NPN (+COM) | |
| | Max. output current | 0.3 A/point, 2 A/unit | |
| | Over current protection/detection function | Applicable | |

General Specifications (Common)

| Item | Specifications |
|----------------------|--|
| Connector type | e-CON (4-pin, Socket) |
| Enclosure | IP20 |
| Standards | CE/UKCA marking |
| Vibration resistance | EN 61131-2 compliant |
| | 5 ≤ f < 8.4 Hz 3.5 mm 8.4 ≤ f < 150 Hz 9.8 m/s ² |
| Impact resistance | EN 61131-2 compliant, 147 m/s ² , 11 ms |
| Weight | 130 g (Body), 100 g (External antenna set) |

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-Specific Radio Law Compliance Table

Specific Product Precautions

EXW1 Series

Specifications: Compact Wireless Remote (EXW1-RL□) IO-Link

Communication Specifications (Common)

| Item | Specifications |
|--|--|
| Protocol | SMC original protocol (SMC encryption) |
| Between compact EXW1 bases | V.2.0 or V.1.0 (Selectable) |
| Between modular EX600-W bases | V.1.0 |
| Radio wave type (spread) | Frequency Hopping Spread Spectrum (FHSS) |
| Frequency | 2.4 GHz (2403 to 2481 MHz) |
| Number of frequency channels | 5 to 79 ch or 15 to 79 ch (Refer to page 2.) |
| Frequency channel selection | Applicable (Refer to page 2.) |
| Channel bandwidth | 1.0 MHz |
| Communication speed | V.2.0 1 Mbps V.1.0 250 kbps |
| Communication distance | Approx. 100 m (Depends on the operating environment) |
| Countries in which Radio Law certified | Refer to page 54 for the latest information regarding in which countries the product is certified. |

IO-Link Specifications

| Item | Specifications | |
|-------------------------|---|--------------------------------|
| Model | EXW1-RLAPA8C | EXW1-RLBPA7C |
| IO-Link port class | Class A | Class B |
| Communication speed | COM1 (4.8 kbps) COM2 (38.4 kbps) COM3 (230.4 kbps) Changes automatically according to the connected device | |
| IO-Link version | Ver.1.1 | |
| Number of IO-Link ports | Max. 4 (32 bytes/IO-Link port) | Max. 2 (32 bytes/IO-Link port) |

Electrical Specifications

| Item | Specifications | |
|--|--|--|
| Model | EXW1-RLAPA8C | EXW1-RLBPA7C |
| US1 power supply voltage range (for control) | 24 VDC $\pm 10\%$ | |
| US2 power supply voltage range (for driving) | — | 24 VDC $\pm 10\%$ |
| Current consumption | 100 mA or less | |
| Device power supply (L+) | 0.5 A/Connector (1 A/Unit) | 0.3 A/Connector (0.6 A/Unit) |
| External power supply (P24) | — | 1.6 A/Connector (2 A/Unit) (Supplied from the power supply for US2) |
| Input | PNP | |
| Pin no. | 2 | 4 |
| Input type | PNP | |
| Protection | Short-circuit protection | |
| Rated input current | Typ. 2.5 mA | Typ. 5.8 mA |
| ON voltage | 13 V or more | |
| OFF voltage | 8 V or less | |
| Output | PNP | |
| Pin no. | 2, 4 | 4 |
| Output type | PNP | |
| Max. load current (C/Q line) | 0.25 A/1 output (Supplied from the power supply for US1) | |
| Protection | Short-circuit protection | |

General

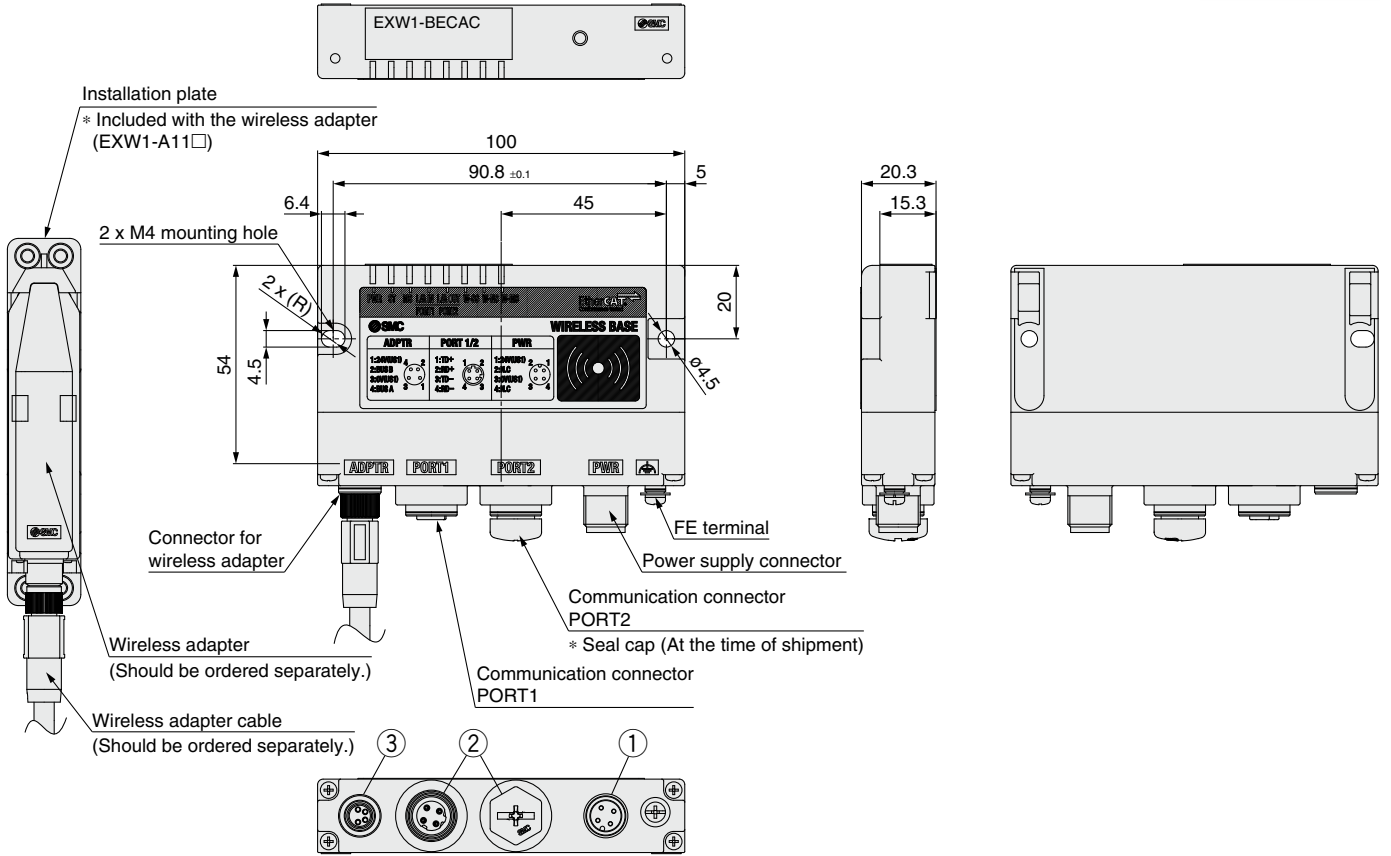
| Item | Specifications |
|--|---|
| Enclosure | IP67 |
| Ambient temperature | Operating: -10°C to $+50^{\circ}\text{C}$ Storage/Shipping: -20°C to $+60^{\circ}\text{C}$ |
| Vibration resistance (Conforming to EN61131-2) | $5 \leq f < 8.4$ Hz 3.5 mm $8.4 \leq f \leq 150$ Hz 9.8 m/s ² |
| Impact (Conforming to EN61131-2) | 147 m/s ² , 11 ms |
| Mounting | M4, 2 locations |
| Ambient humidity | 35% to 85% RH (No condensation) |
| Standards | CE/UKCA marking, UL (CSA) |
| Weight | 150 g |

Dimensions/Parts Description



Compact Wireless Base

EXW1-BECAC



① Power supply connector

| No. | Signal | M12, 4-pin, plug A-coded | |
|-----|--------|-----------------------------|---|
| | | 2 | 1 |
| 1 | 24 V | | |
| 2 | N.C. | | |
| 3 | 0 V | | |
| 4 | N.C. | | |

② EtherCAT communication connector

| No. | Signal | M12, 4-pin, D-coded, socket |
|-----|--------|-----------------------------|
| 1 | TD+ | 1 |
| 2 | RD+ | 2 |
| 3 | TD- | 3 |
| 4 | RD- | 4 |

③ Connector for wireless adapter

| No. | Signal | M8, 4-pin, socket |
|-----|----------------|-------------------|
| 1 | 24 V (US1) | 4 |
| 2 | Internal BUS B | 2 |
| 3 | 0 V (US1) | 3 |
| 4 | Internal BUS A | 1 |

* The compact wireless base (EtherCAT) is a wireless system base used in combination with a wireless adapter that has wireless communication capabilities. When using this product, it is necessary to order the wireless adapter and wireless adapter cable separately.

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-Specific Radio Law Compliance Table

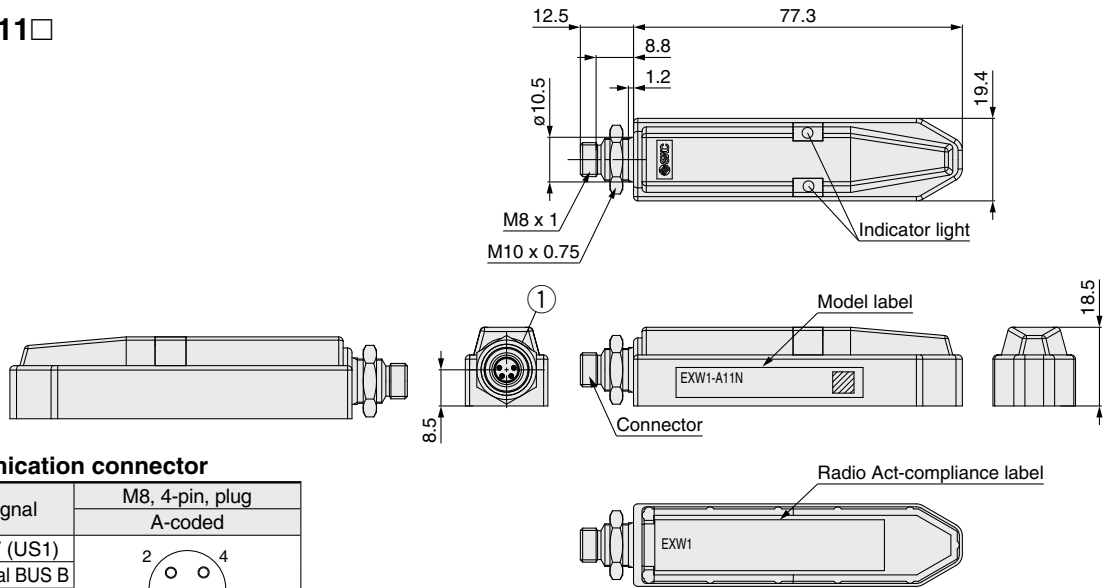
Specific Product Precautions

EXW1 Series

Dimensions/Parts Description

Wireless Adapter

EXW1-A11□



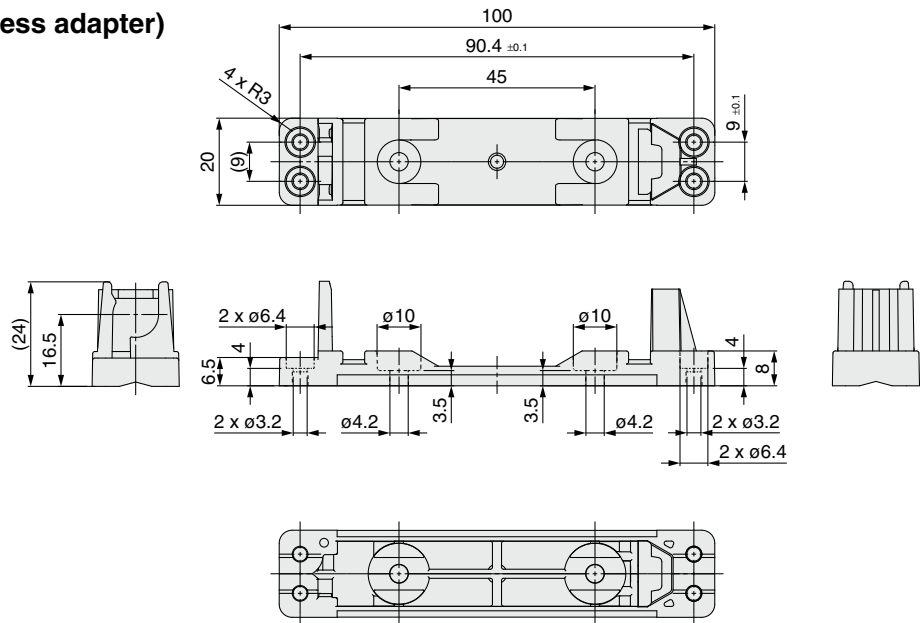
① Communication connector

| No. | Signal | M8, 4-pin, plug A-coded |
|-----|----------------|----------------------------|
| 1 | 24 V (US1) | |
| 2 | Internal BUS B | |
| 3 | 0 V (US1) | |
| 4 | Internal BUS A | |

Installation Plate

EXW1-AB4 (Option for wireless adapter)

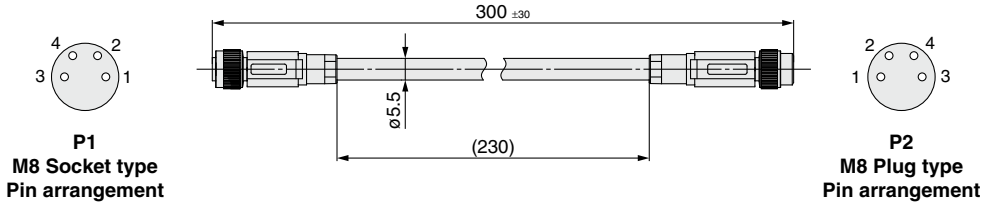
* Included with the EXW1-A11□



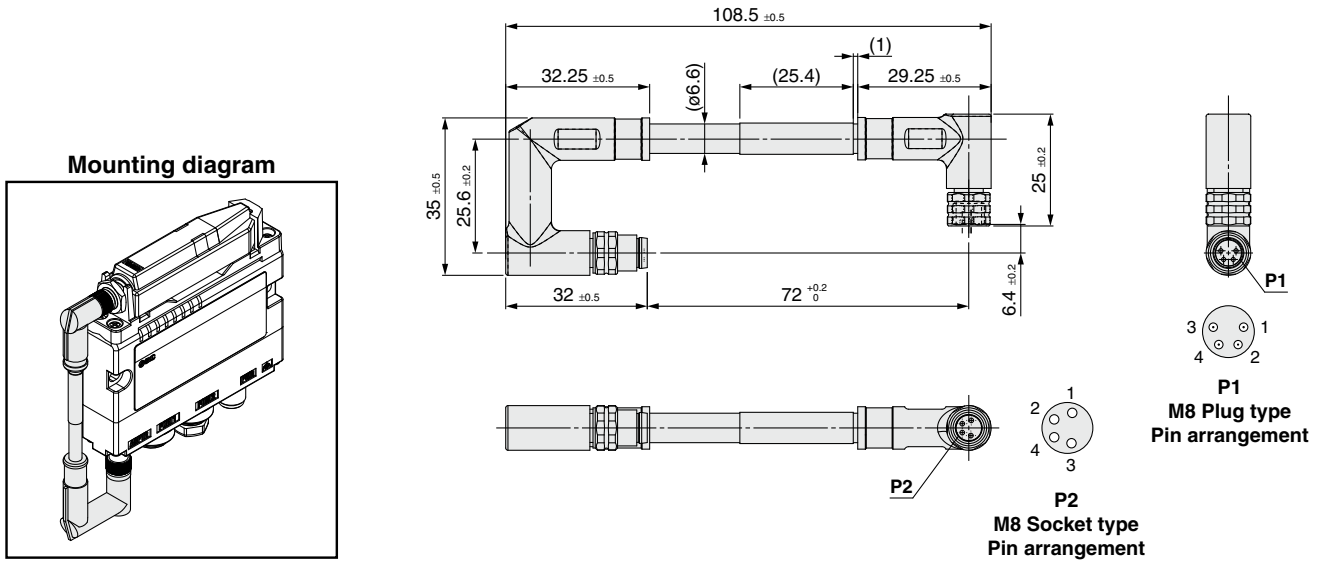
Dimensions/Parts Description

Wireless Adapter Cable

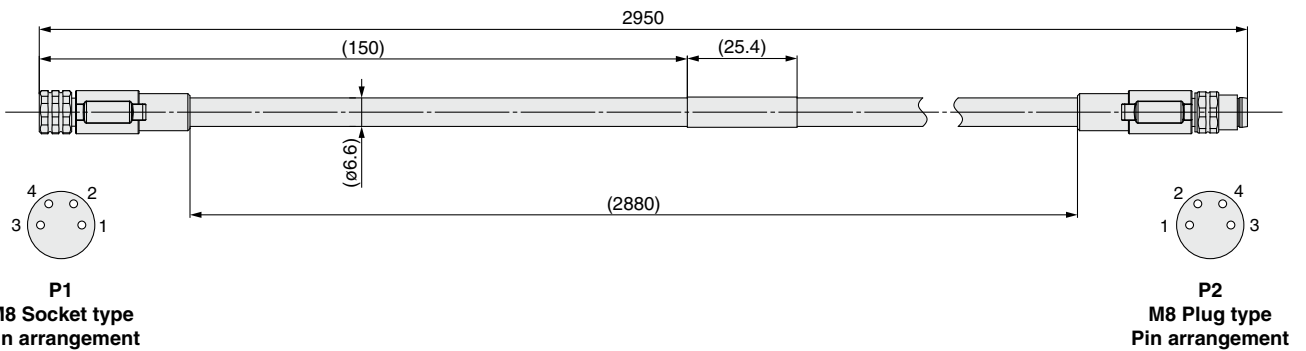
EXW1-AC1-X1



EXW1-AC001-SAPU



EXW1-AC030-SSPS



EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-Specific Radio Law Compliance Table

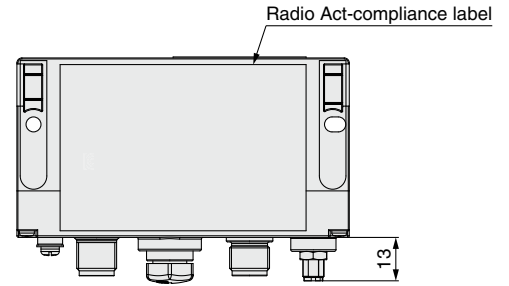
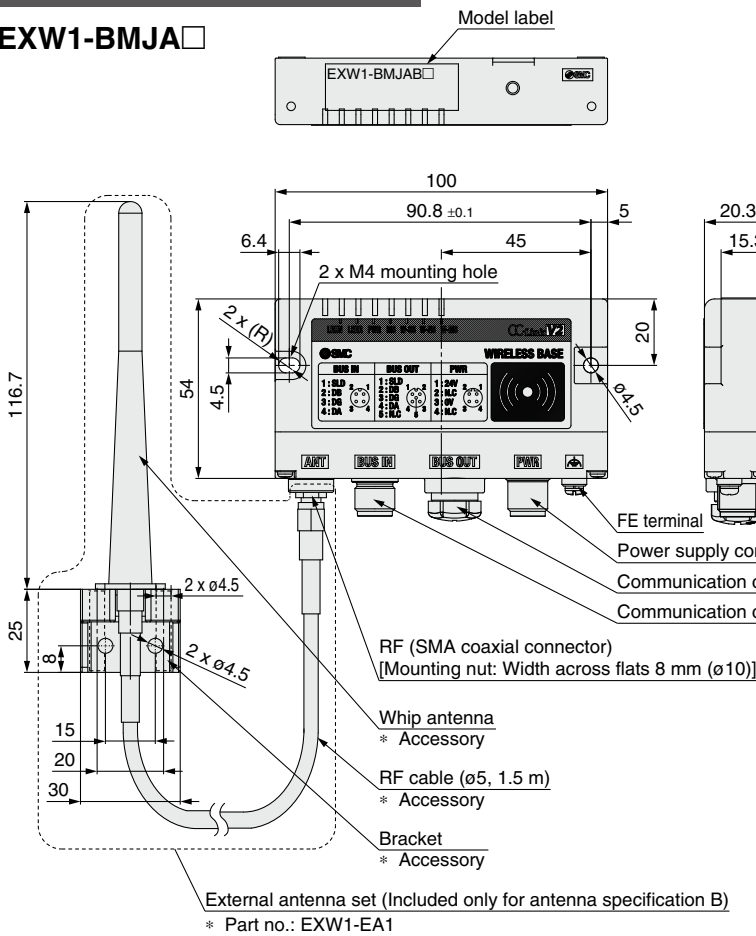
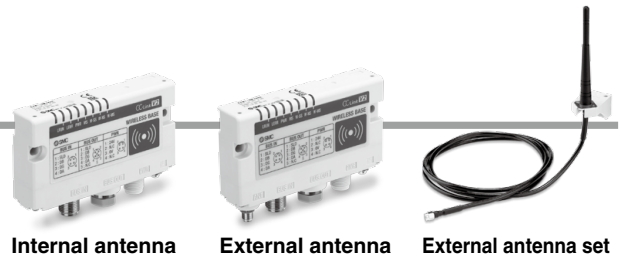
Specific Product Precautions

EXW1 Series

Dimensions/Parts Description

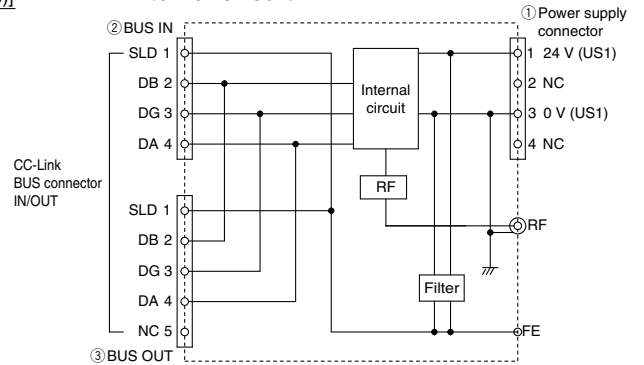
Compact Wireless Base

EXW1-BMJA□

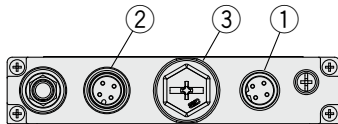


* The seal cap is attached when shipped.

Internal circuit



* The metal housing part of the RF (SMA coaxial connector) is connected to 0 V (US1).



① Power supply connector

| No. | Signal | M12, 4-pin, plug B-coded |
|-----|------------|-----------------------------|
| 1 | 24 V (US1) | |
| 2 | N.C. | |
| 3 | 0 V (US1) | |
| 4 | N.C. | |

②③ CC-Link BUS connector

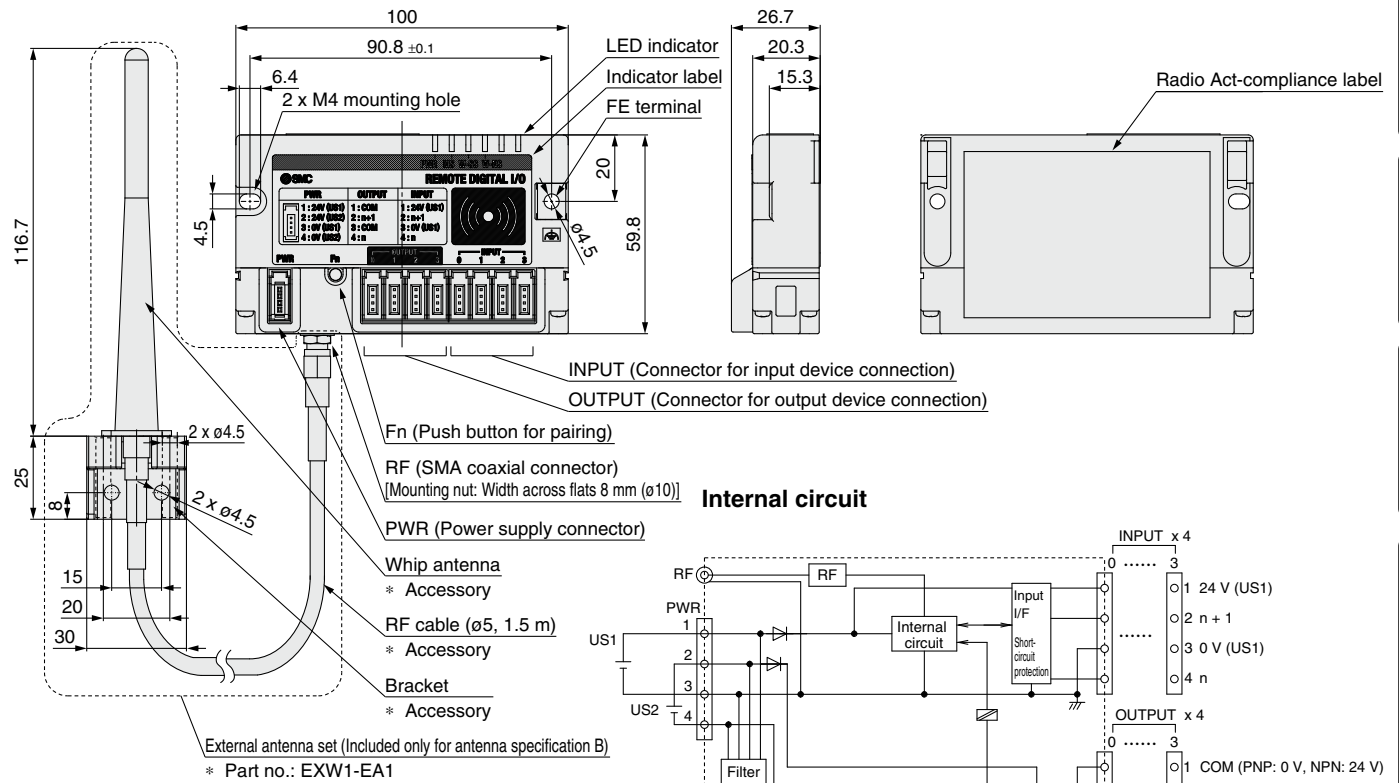
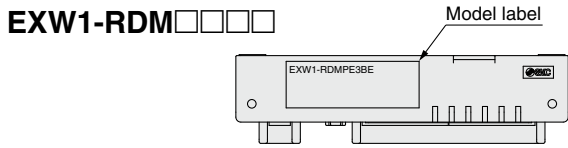
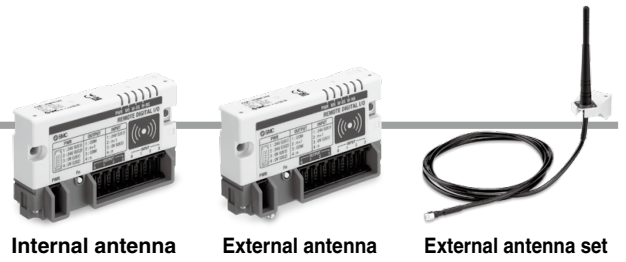
| No. | Signal | ② BUS IN |
|-----|--------|-----------------------------|
| | | M12, 4-pin, plug A-coded |
| 1 | SLD | |
| 2 | DB | |
| 3 | DG | |
| 4 | DA | |

| No. | Signal | ③ BUS OUT |
|-----|--------|-------------------------------|
| | | M12, 5-pin, socket A-coded |
| 1 | SLD | |
| 2 | DB | |
| 3 | DG | |
| 4 | DA | |
| 5 | N.C. | |

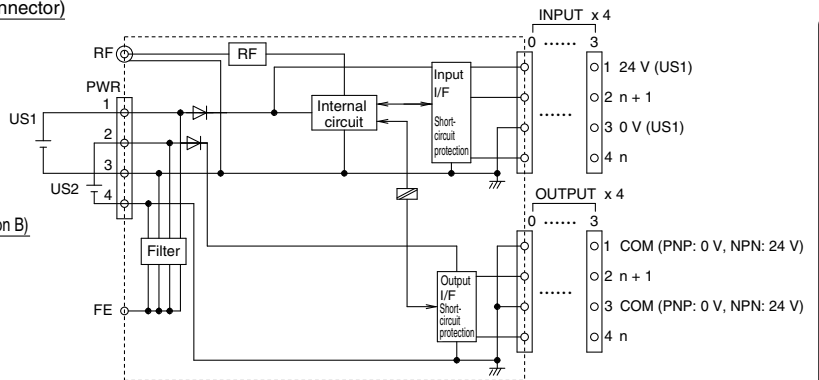
Dimensions/Parts Description

Compact Wireless Remote Input/Output

EXW1-RDM□□□□



Internal circuit



* The metal housing part of the RF (SMA coaxial connector) is connected to 0 V (US1).

PWR (Power supply connector)

| Pin no. | Description |
|---------|-------------|
| 1 | 24 V (US1) |
| 2 | 24 V (US2) |
| 3 | 0 V (US1) |
| 4 | 0 V (US2) |

INPUT (Connector for input device connection)

| Pin no. | Description |
|---------|-------------|
| 1 | 24 V (US1) |
| 2 | n + 1 |
| 3 | 0 V (US1) |
| 4 | n |

OUTPUT (Connector for output device connection, EXW1-RDMPE3□□)*1

| Pin no. | Description |
|---------|----------------|
| 1 | -COM (US2_0 V) |
| 2 | n + 1 |
| 3 | -COM (US2_0 V) |
| 4 | n |

OUTPUT (Connector for output device connection, EXW1-RDMNE3□□)*1

| Pin no. | Description |
|---------|-----------------|
| 1 | +COM (US2_24 V) |
| 2 | n + 1 |
| 3 | +COM (US2_24 V) |
| 4 | n |

*1 The specifications of pin numbers ① and ③ differ depending on the part number system.

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-Specific Radio Law Compliance Table

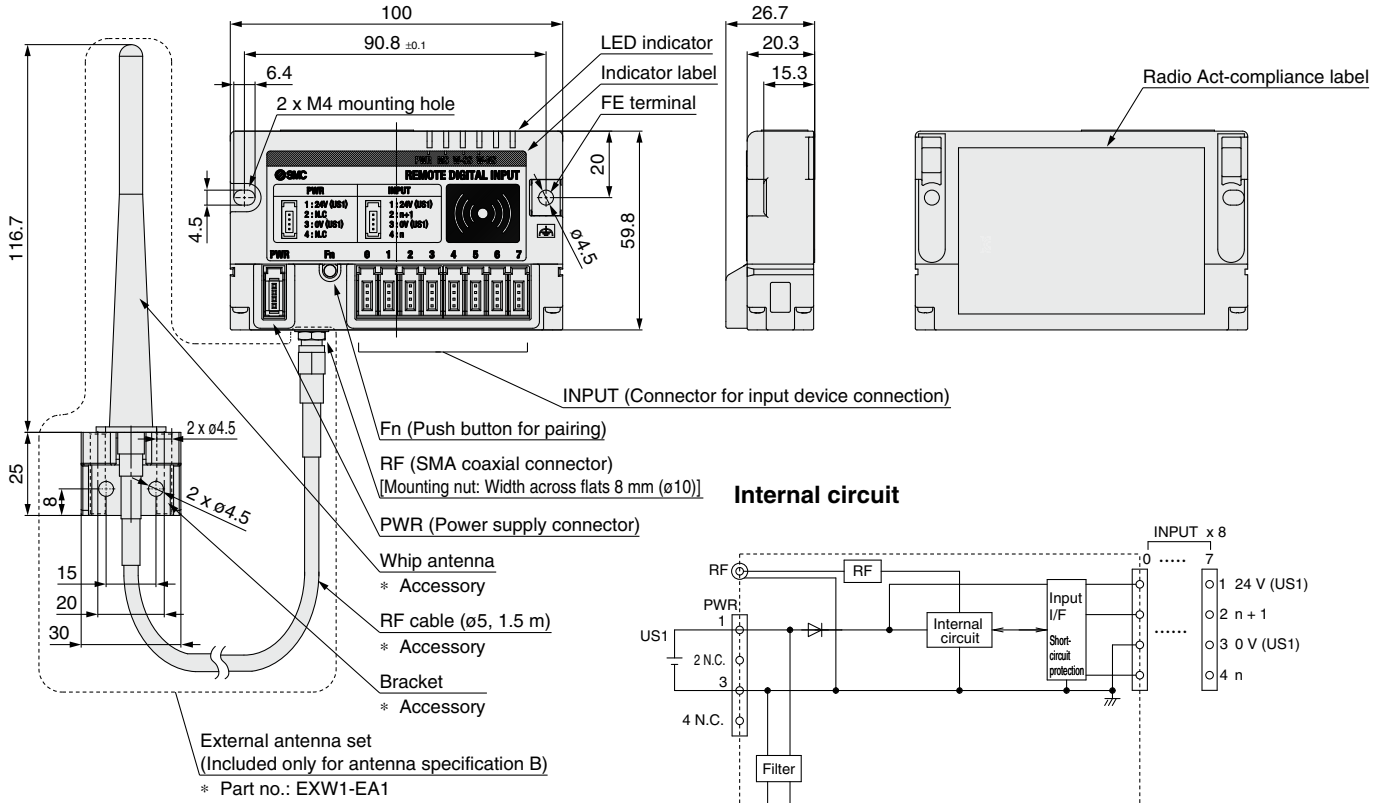
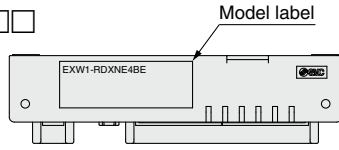
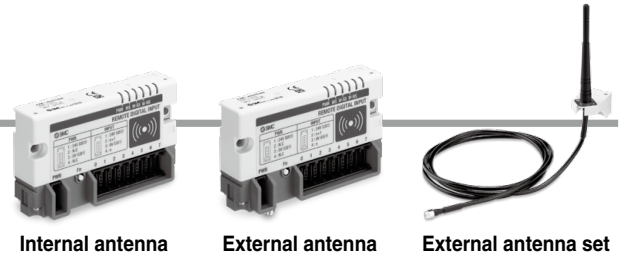
Specific Product Precautions

EXW1 Series

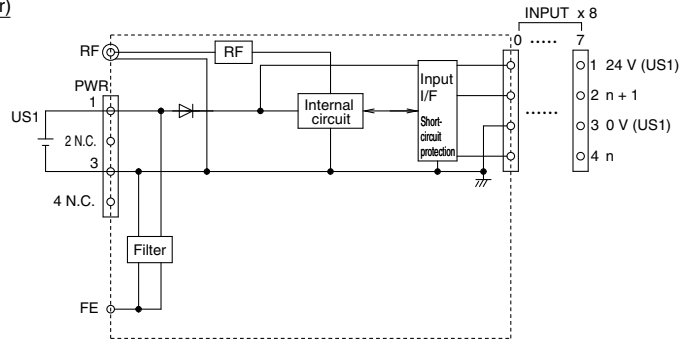
Dimensions/Parts Description

Compact Wireless Remote Input

EXW1-RDX□□□□



Internal circuit



* The metal housing part of the RF (SMA coaxial connector) is connected to 0 V (US1).

PWR (Power supply connector)

| Pin no. | Description |
|---------|-------------|
| 1 | 24 V (US1) |
| 2 | N.C. |
| 3 | 0 V (US1) |
| 4 | N.C. |

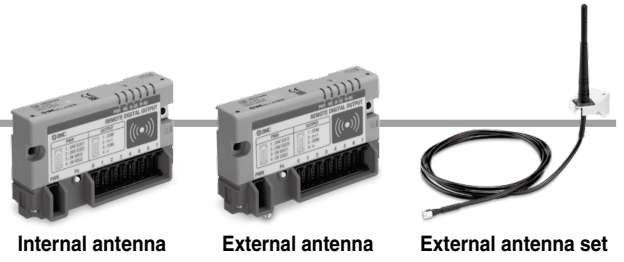
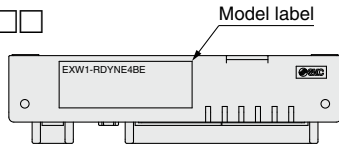
INPUT (Connector for input device connection)

| Pin no. | Description |
|---------|-------------|
| 1 | 24 V (US1) |
| 2 | n + 1 |
| 3 | 0 V (US1) |
| 4 | n |

Dimensions/Parts Description

Compact Wireless Remote Output

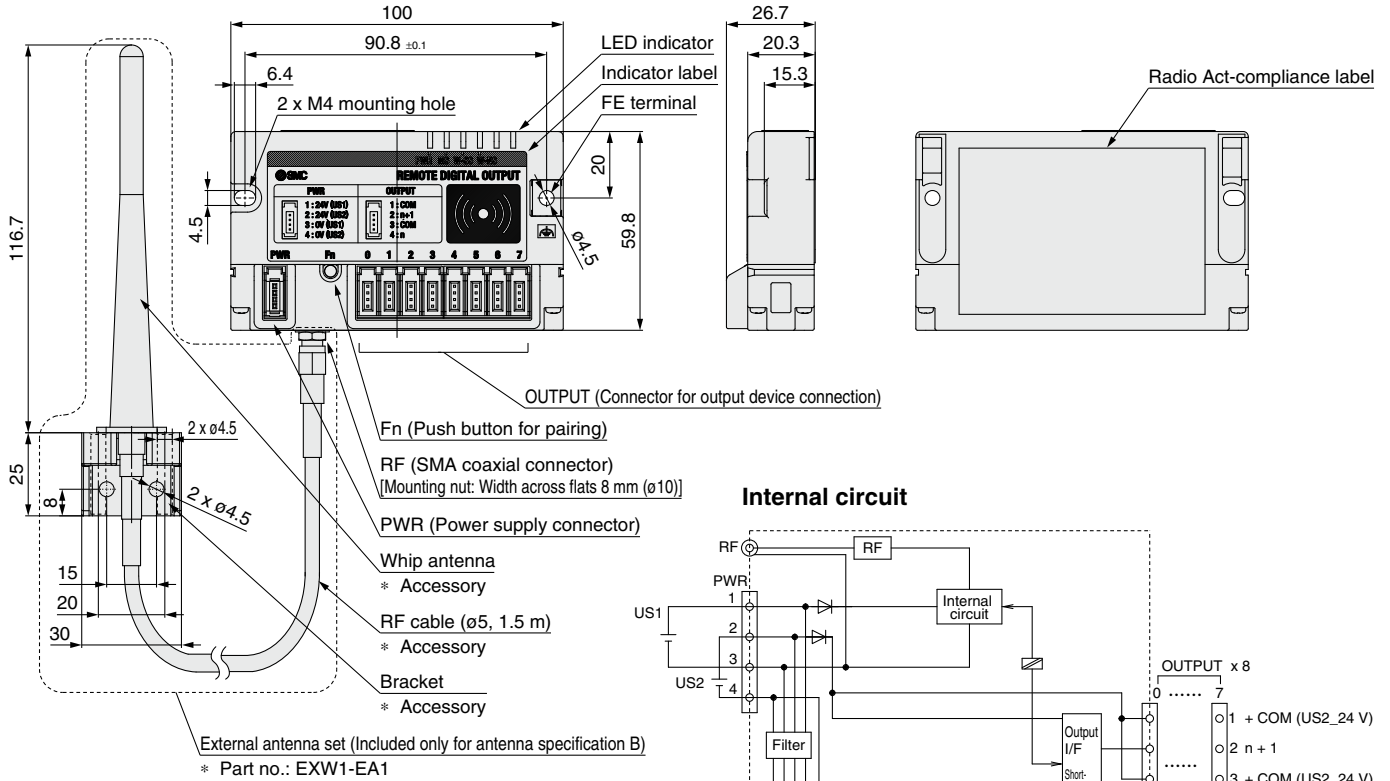
EXW1-RDY□□□□



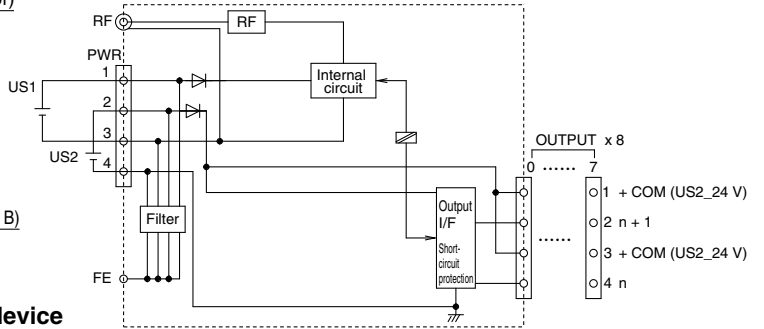
Internal antenna

External antenna

External antenna set



Internal circuit



* The metal housing part of the RF (SMA coaxial connector) is connected to 0 V (US1).

PWR (Power supply connector)

| Pin no. | Description |
|---------|-------------|
| 1 | 24 V (US1) |
| 2 | 24 V (US2) |
| 3 | 0 V (US1) |
| 4 | 0 V (US2) |

OUTPUT (Connector for output device connection)

| Pin no. | Description |
|---------|------------------|
| 1 | + COM (US2_24 V) |
| 2 | n + 1 |
| 3 | + COM (US2_24 V) |
| 4 | n |

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-Specific Radio Law Compliance Table

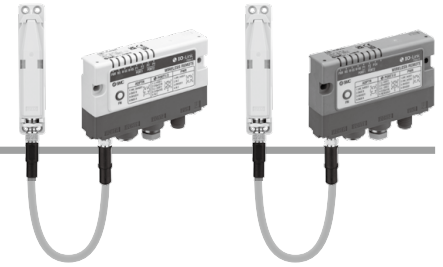
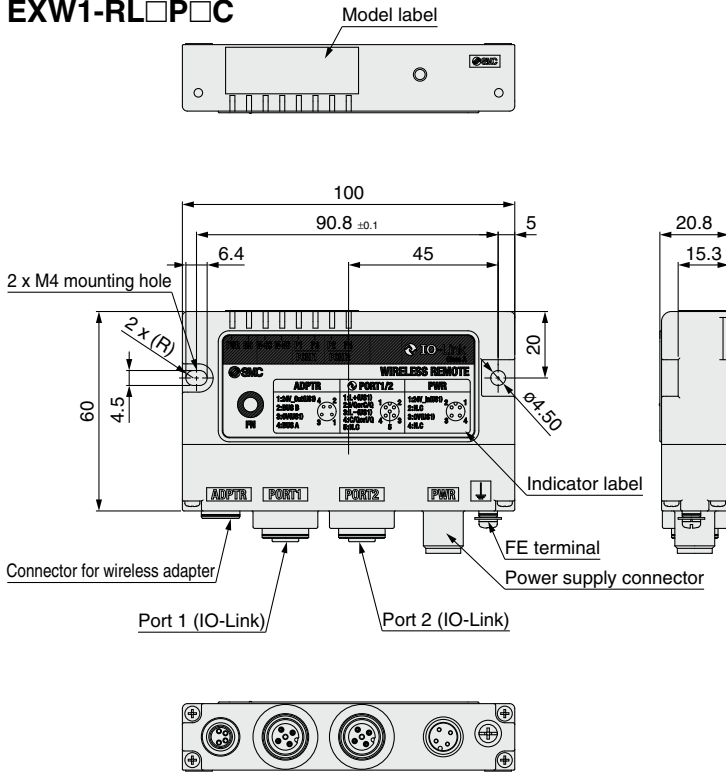
Specific Product Precautions

EXW1 Series

Dimensions/Parts Description

Compact Wireless Remote (IO-Link Master)

EXW1-RL□P□C



Connector for Wireless Adapter

| Pin no. | Description | M8, 4-pin, socket |
|---------|----------------|-------------------|
| 1 | 24 V (US1) | |
| 2 | Internal BUS B | |
| 3 | 0 V (US1) | |
| 4 | Internal BUS A | |

Port 1/2: EXW1-RLAPA8C (ClassA)

| Pin no. | Description | M12, 5-pin, A coding, socket |
|---------|--------------|------------------------------|
| 1 | L+ (US1)*1 | |
| 2 | I/Q or C/Q*2 | |
| 3 | L- (US1) | |
| 4 | C/Q or I/Q*2 | |
| 5 | Unused | |

*1 Do not input power.

*2 The functions of pins can be changed in the settings.

Port 1/2: EXW1-RLBPA7C (ClassB)

| Pin no. | Description | M12, 5-pin, A coding, socket |
|---------|--------------|------------------------------|
| 1 | L+ (US1)*1 | |
| 2 | P24 (US2)*1 | |
| 3 | L- (US1) | |
| 4 | C/Q or I/Q*2 | |
| 5 | N24 (US2) | |

*1 Do not input power.

*2 The functions of pins can be changed in the settings.

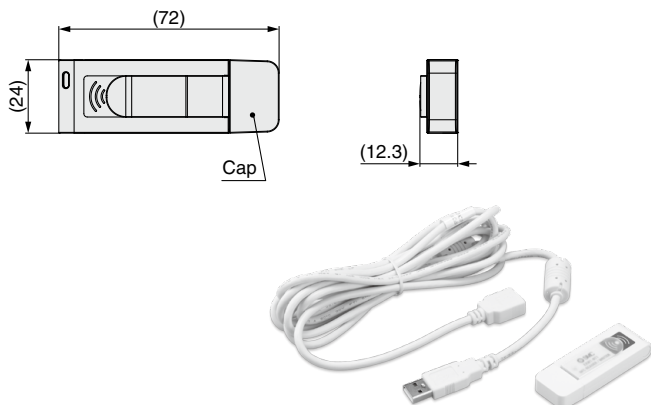
Power supply connector

| Pin no. | Description | M12, 4-pin, A coding, plug |
|---------|-----------------|----------------------------|
| 1 | 24 V_In (US1) | |
| 2 | 24 V_In (US2)*1 | |
| 3 | 0 V (US1) | |
| 4 | 0 V (US2)*1 | |

*1 EXW1-RLBPA7C (ClassB) only

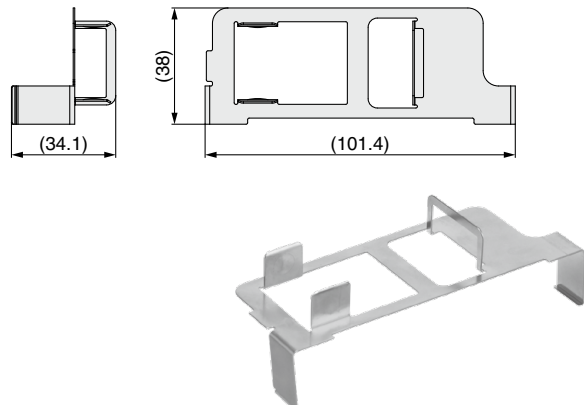
NFC Reader/Writer

EXW1-NT1



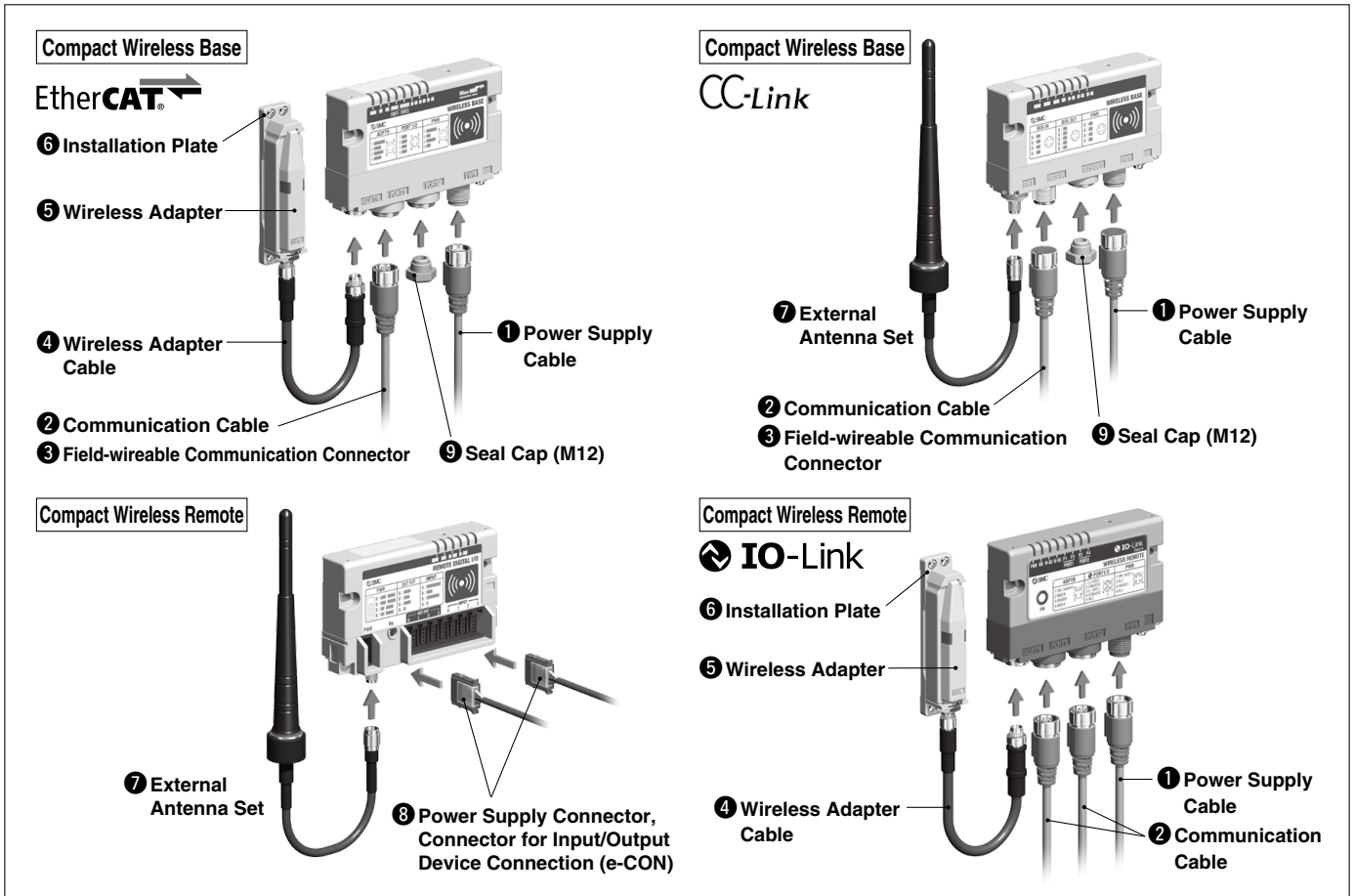
Fixing Bracket

EXW1-AB2 (Option, For EXW1)



EXW1 Series

Accessories (Optional Parts)



1 Power Supply Cable

For EtherCAT

EX500-AP 050 - S

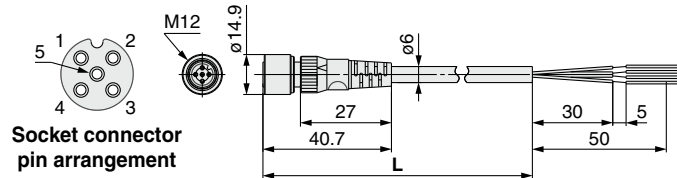
Cable length (L)

| | |
|-----|---------|
| 010 | 1000 mm |
| 050 | 5000 mm |

Connector specification

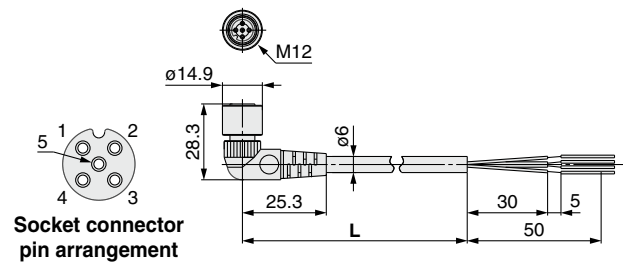
| | |
|---|----------|
| S | Straight |
| A | Angled |

Straight connector type

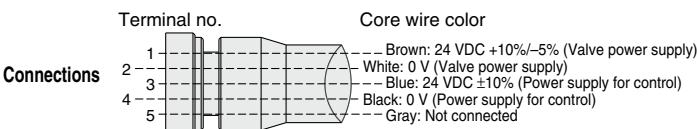


| Item | Specifications |
|---------------------------------|----------------------------|
| Cable O.D. | ø6 mm |
| Conductor nominal cross section | 0.3 mm ² /AWG22 |
| Wire O.D. (Including insulator) | 1.5 mm |
| Min. bending radius (Fixed) | 40 mm |

Angled connector type



| Item | Specifications |
|---------------------------------|----------------------------|
| Cable O.D. | ø6 mm |
| Conductor nominal cross section | 0.3 mm ² /AWG22 |
| Wire O.D. (Including insulator) | 1.5 mm |
| Min. bending radius (Fixed) | 40 mm |



EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

Specific Product Precautions

EXW1 Series

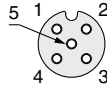
① Power Supply Cable

For EtherCAT

PCA-1401804

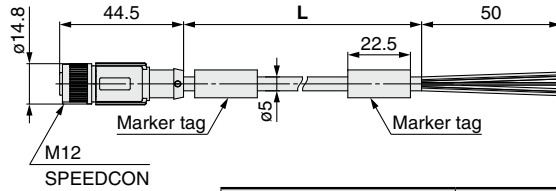
• Cable length (L)

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

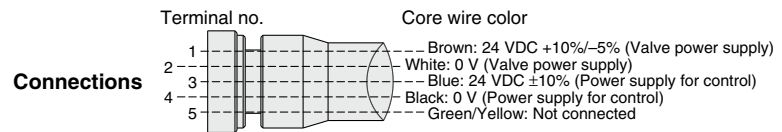


Socket connector pin arrangement

A-coded
(Normal key)



| Item | Specifications |
|---------------------------------|-----------------------------|
| Cable O.D. | ø5 mm |
| Conductor nominal cross section | 0.34 mm ² /AWG22 |
| Wire O.D. (Including insulator) | 1.27 mm |
| Min. bending radius (Fixed) | 21.7 mm |



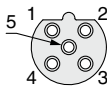
For CC-Link

Straight connector type

EX9-AC 050 - 1

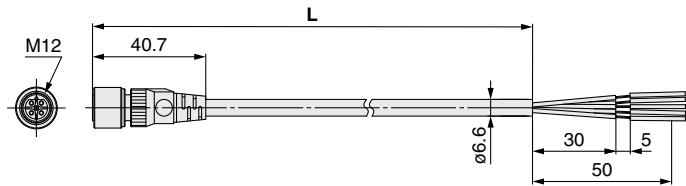
• Cable length (L)

| | |
|-----|---------|
| 010 | 1000 mm |
| 030 | 3000 mm |
| 050 | 5000 mm |

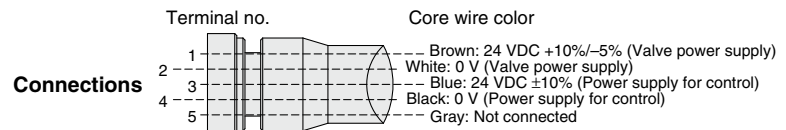


Socket connector pin arrangement

B-coded
(Reverse key)



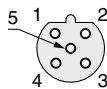
| Item | Specifications |
|---------------------------------|----------------------------|
| Cable O.D. | ø6.6 mm |
| Conductor nominal cross section | 0.3 mm ² /AWG22 |
| Wire O.D. (Including insulator) | 1.65 mm |
| Min. bending radius (Fixed) | 40 mm |



PCA-1401807

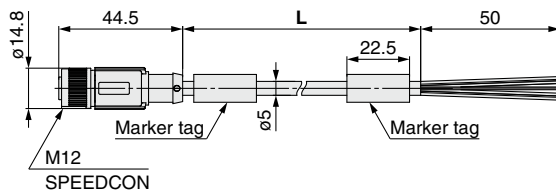
• Cable length (L)

| | |
|---------|---------|
| 1401807 | 1500 mm |
| 1401808 | 3000 mm |
| 1401809 | 5000 mm |

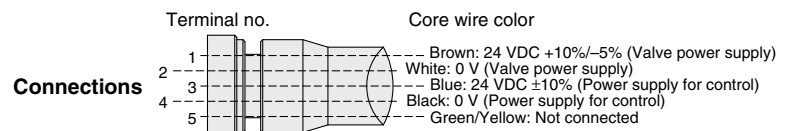


Socket connector pin arrangement

B-coded
(Reverse key)



| Item | Specifications |
|---------------------------------|-----------------------------|
| Cable O.D. | ø5 mm |
| Conductor nominal cross section | 0.34 mm ² /AWG22 |
| Wire O.D. (Including insulator) | 1.27 mm |
| Min. bending radius (Fixed) | 21.7 mm |



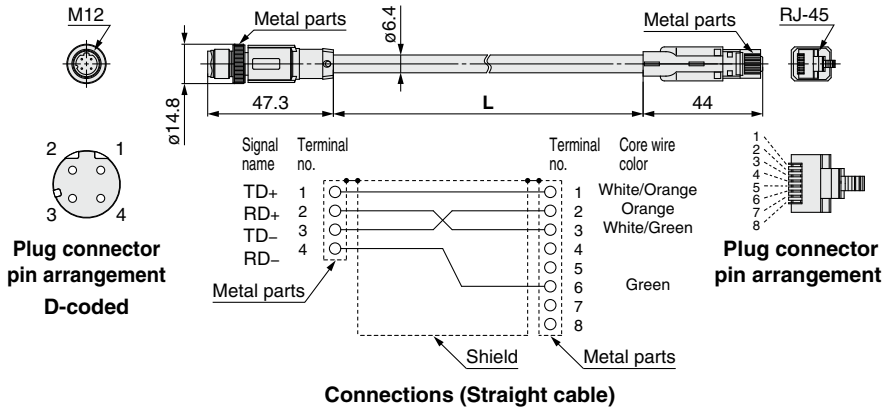
② Communication Cable

For EtherCAT

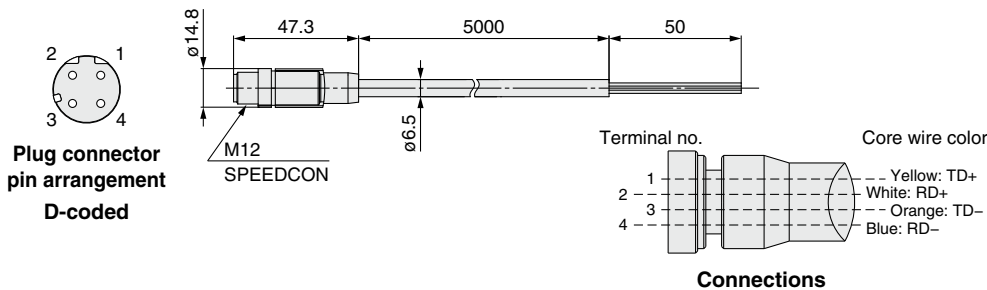
EX9-AC 020 EN-PSRJ (Plug/RJ-45 connector)

• Cable length (L)

| | |
|-----|----------|
| 010 | 1000 mm |
| 020 | 2000 mm |
| 030 | 3000 mm |
| 050 | 5000 mm |
| 100 | 10000 mm |



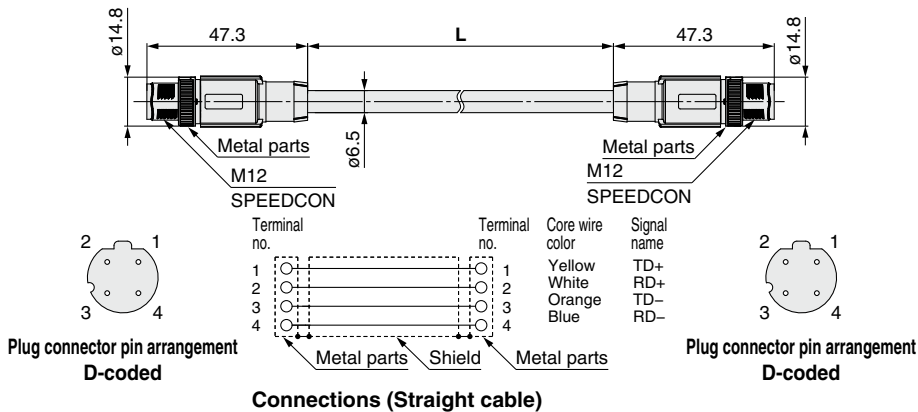
PCA-1446566 (Plug)



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

• Cable length (L)

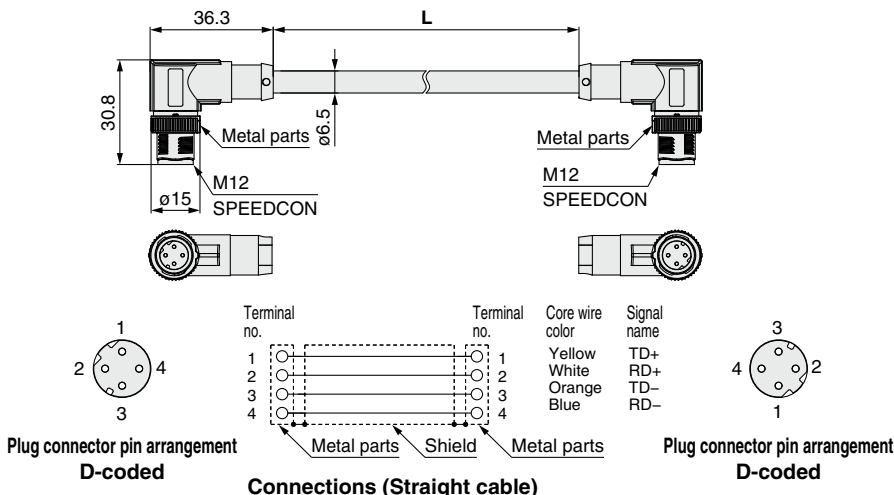
| | |
|-----|----------|
| 005 | 500 mm |
| 010 | 1000 mm |
| 020 | 2000 mm |
| 030 | 3000 mm |
| 050 | 5000 mm |
| 100 | 10000 mm |



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 |



EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

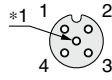
Specific Product Precautions

EXW1 Series

② Communication Cable

For CC-Link

PCA-1567720
(Socket)

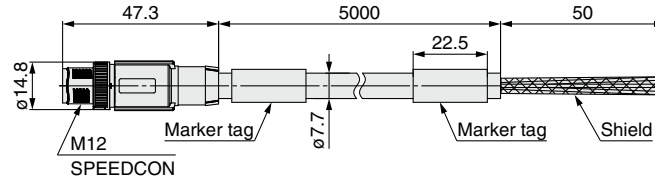
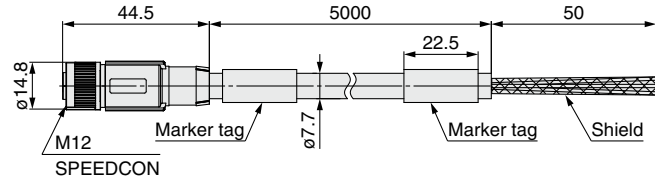


Socket connector pin arrangement
A-coded (Normal key)
*1 Number of holes: 5,
Total number of pins: 4

PCA-1567717
(Plug)

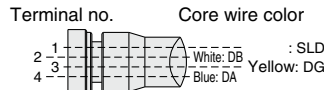


Plug connector pin arrangement
A-coded (Normal key)



Made to Order

| | | |
|--------------|----------|-------------------|
| Cable length | 10000 mm | Refer to page 35. |
|--------------|----------|-------------------|



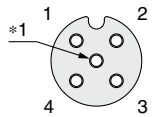
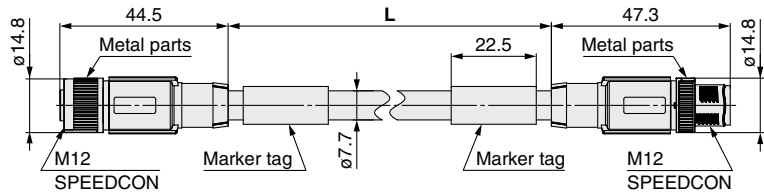
Connections

| Item | | Specifications |
|---------------------------------|-----------|-----------------------------|
| Cable O.D. | | ø7.7 mm |
| Conductor nominal cross section | Data pair | 0.5 mm ² /AWG20 |
| | Drain | 0.34 mm ² /AWG22 |
| Wire O.D. (Including insulator) | | 2.55 mm |
| Min. bending radius (Fixed) | | 77 mm |

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

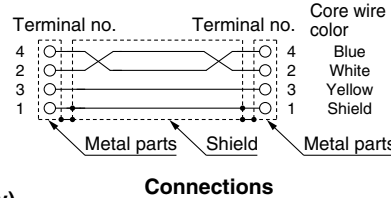
• Cable length (L)

| | |
|-----|----------|
| 005 | 500 mm |
| 010 | 1000 mm |
| 020 | 2000 mm |
| 030 | 3000 mm |
| 050 | 5000 mm |
| 100 | 10000 mm |

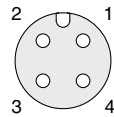


Socket connector pin arrangement
A-coded (Normal key)

*1 Number of holes: 5,
Total number of pins: 4



Connections



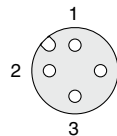
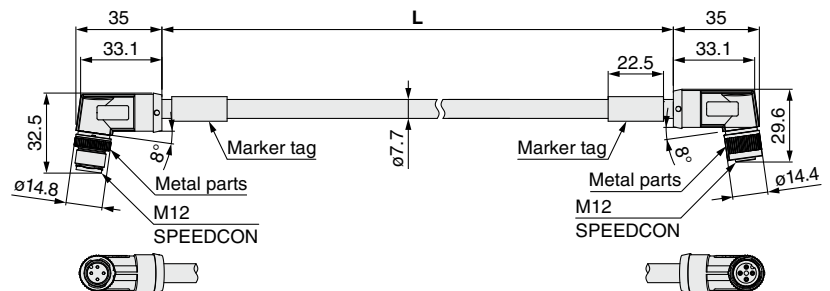
Plug connector pin arrangement
A-coded (Normal key)

| Item | | Specifications |
|---------------------------------|-----------|-----------------------------|
| Cable O.D. | | ø7.7 mm |
| Conductor nominal cross section | Data pair | 0.5 mm ² /AWG20 |
| | Drain | 0.34 mm ² /AWG22 |
| Wire O.D. (Including insulator) | | 2.55 mm |
| Min. bending radius (Fixed) | | 77 mm |

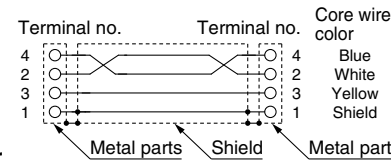
EX9-AC 005 MJ-SAPA (With angled connector on both sides (Socket/Plug))

• Cable length (L)

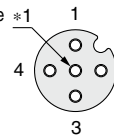
| | |
|-----|----------|
| 005 | 500 mm |
| 010 | 1000 mm |
| 020 | 2000 mm |
| 030 | 3000 mm |
| 050 | 5000 mm |
| 100 | 10000 mm |



Plug connector pin arrangement
A-coded (Normal key)



Connections



Socket connector pin arrangement
A-coded (Normal key)

*1 Number of holes: 5,
Total number of pins: 4

| Item | | Specifications |
|---------------------------------|-----------|-----------------------------|
| Cable O.D. | | ø7.7 mm |
| Conductor nominal cross section | Data pair | 0.5 mm ² /AWG20 |
| | Drain | 0.34 mm ² /AWG22 |
| Wire O.D. (Including insulator) | | 2.55 mm |
| Min. bending radius (Fixed) | | 77 mm |

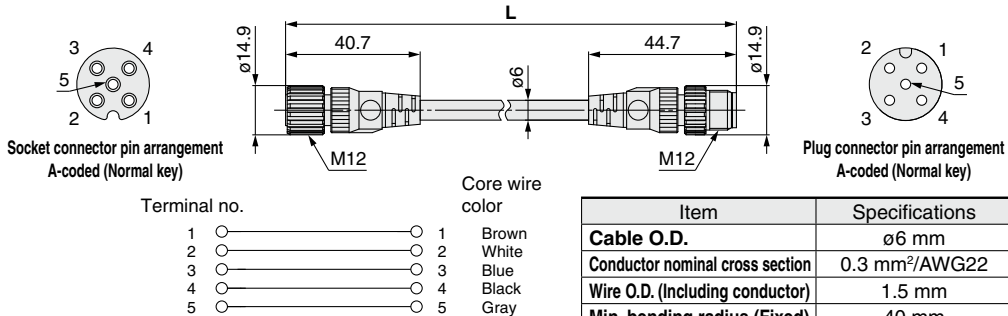
② Communication Cable

For IO-Link Master

EX9-AC 005 -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 |



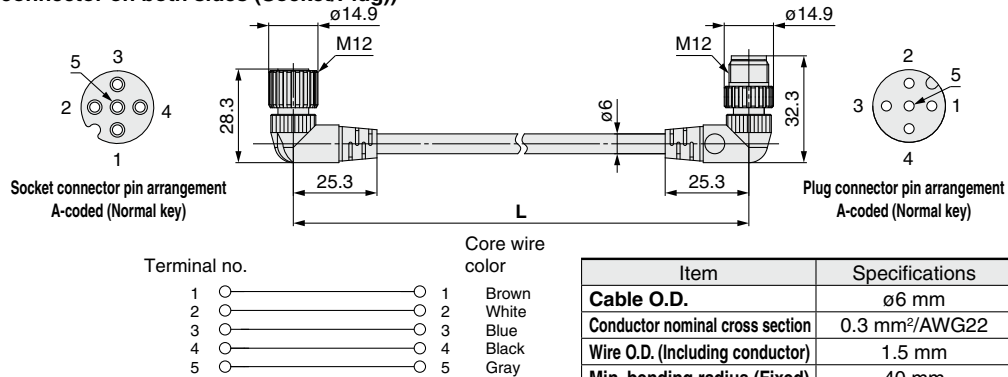
| Item | Specifications |
|---------------------------------|----------------------------|
| Cable O.D. | ø6 mm |
| Conductor nominal cross section | 0.3 mm ² /AWG22 |
| Wire O.D. (Including conductor) | 1.5 mm |
| Min. bending radius (Fixed) | 40 mm |

Connections

EX9-AC 005 -SAPA (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 | Specifications |
|---------------------------------|----------------------------|
| Cable O.D. | ø6 mm |
| Conductor nominal cross section | 0.3 mm ² /AWG22 |
| Wire O.D. (Including conductor) | 1.5 mm |
| Min. bending radius (Fixed) | 40 mm |

Connections

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

Specific Product Precautions

EXW1 Series

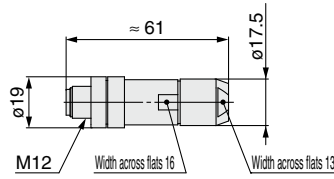
③ Field-wireable Communication Connector

Plug

For EtherCAT
PCA-1446553



D-coded



Applicable Cable

| Item | Specifications |
|--|---|
| Cable O.D. | 4.0 to 8.0 mm |
| Wire gauge (Stranded wire cross section) | 0.14 to 0.34 mm ² /AWG26 to 22 |

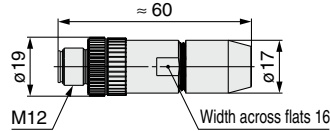
* The table above shows the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

Plug

For CC-Link
PCA-1557617



A-coded
(Normal key)



Applicable Cable

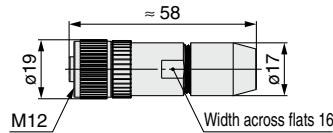
| Item | Specifications |
|--|--|
| Cable O.D. | 4.0 to 8.0 mm |
| Wire gauge (Stranded wire cross section) | 0.14 to 0.5 mm ² /AWG26 to 20 |

Socket

For CC-Link
PCA-1557620



A-coded
(Normal key)



Applicable Cable

| Item | Specifications |
|--|--|
| Cable O.D. | 4.0 to 8.0 mm |
| Wire gauge (Stranded wire cross section) | 0.14 to 0.5 mm ² /AWG26 to 20 |

④ Wireless Adapter Cable

EXW1-AC1-X1

● Secondary battery compatible

EXW1-AC001-SAPU
EXW1-AC030-SSPS

* Refer to page 22 for the dimensions and parts description.
* This cable is required to connect the wireless base and wireless adapter.



⑤ Wireless Adapter

EXW1-A11□

A wireless adapter cable is required to connect the wireless base and wireless adapter.
An installation plate (EXW1-AB4) is included as an accessory.

* Refer to page 21 for the dimensions and parts description.

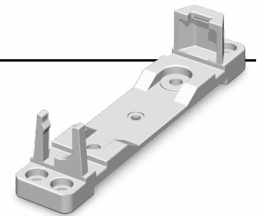


⑥ Installation Plate

EXW1-AB4

Included as an accessory with the wireless adapter (EXW1-A11□)

* Refer to page 21 for the dimensions.

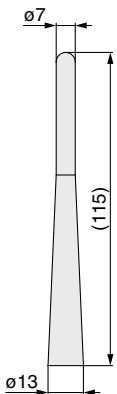


⑦ External Antenna Set

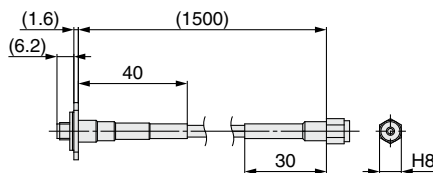
EXW1-EA1

(A set containing a whip antenna, coaxial cable, and bracket)

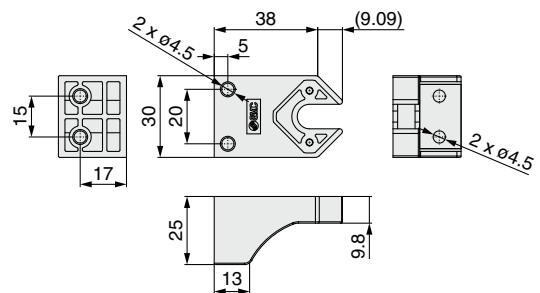
- *1 The set is included with the external antenna specification. Only the included whip antenna and coaxial cable can be used with the product. Be sure to use them as a set.
- *2 The external antenna set cannot be used for the internal antenna specification.
- *3 It is not possible to use the external antenna set without connecting it with the external antenna specification.



① Whip antenna



② Coaxial cable

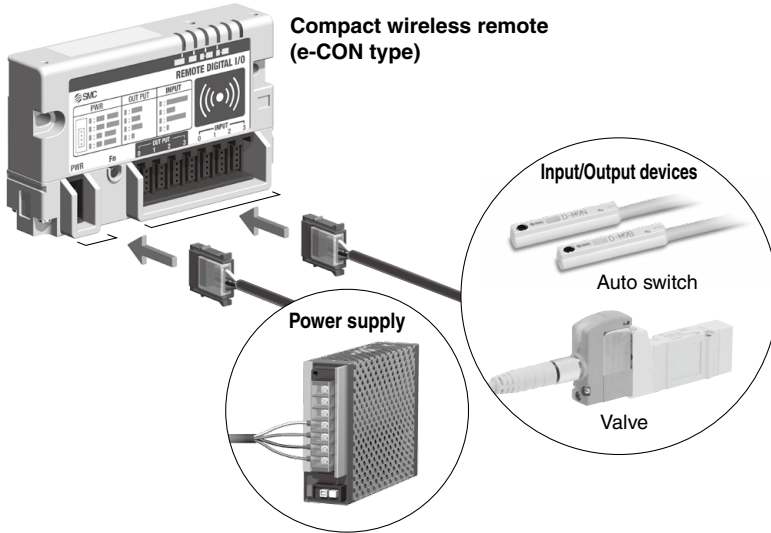


③ Bracket

⑧ Power Supply Connector, Connector for Input/Output Device Connection (e-CON)

Select the applicable e-CON connectors based on the lead wire specifications of the components to be connected.
Both the power supply and I/O connectors have the same shape as the e-CON (4-pin, socket).
The lead wire specifications of each of our I/O devices are shown below for reference.

Connecting the remote and I/O devices



e-CON Part Nos. List

| Part no. | AWG No. | Conductor cross section [mm SQ] | Finished outside diameter [mm] | Cover color |
|------------|----------|---------------------------------|--------------------------------|-------------|
| ZS-28-C-1 | 24 to 26 | 0.14 to 0.2 | ø1.0 to ø1.2 | Yellow |
| ZS-28-C-2 | | | ø1.2 to ø1.6 | Orange |
| ZS-28-C-3 | 22 to 20 | 0.3 to 0.5 | ø1.0 to ø1.2 | Green |
| ZS-28-C-4 | | | ø1.2 to ø1.6 | Blue |
| ZS-28-C-5 | | | ø1.6 to ø2.0 | Gray |
| ZS-28-CA-1 | — | 0.1 to 0.5 | ø0.6 to ø0.9 | Orange |
| ZS-28-CA-2 | | | ø0.9 to ø1.0 | Red |
| ZS-28-CA-3 | | | ø1.0 to ø1.15 | Yellow |
| ZS-28-CA-4 | | | ø1.15 to ø1.35 | Blue |
| ZS-28-CA-5 | | | ø1.35 to ø1.6 | Green |

| Input/Output | Product | Series | Appearance | Conductor cross section [mm ²] | Insulator O.D. [mm] | Applicable e-CON part no. |
|--------------|-------------|--|------------|--|---------------------|---------------------------|
| Output | Valve | JSY1000 Plug lead (V050-30-4A-□) | | 0.3 | ø1.55 | ZS-28-C-4 ZS-28-CA-5 |
| | | JSY3000, 5000/SYJ/SJ Plug lead (SY100-30-4A-□) | | 0.3 | ø1.55 | ZS-28-C-4 ZS-28-CA-5 |
| | | SY/SYJ M8 connector (V100-49-1-□) | | 0.16 (AWG25) | ø1.2 | ZS-28-C-1 ZS-28-CA-4 |
| | Ejector | ZB (AXT661-13A/14A-□) | | AWG24 | ø1.4 | ZS-28-C-2 ZS-28-CA-5 |
| | | ZL/ZM (SY100-30-4A-□) | | 0.3 | ø1.55 | ZS-28-C-4 ZS-28-CA-5 |
| Input | Pressure | Z/ISE10, 20 | | 0.15 (AWG26) | ø1.0 | ZS-28-C-1 ZS-28-CA-2 |
| | | PS1000 | | 0.18 | ø0.96 | ZS-28-CA-2 |
| | Auto switch | D-M9 | | 0.15 | ø0.88 | ZS-28-CA-1 |
| | Flow | PF2M | | AWG26 (0.13) | ø1 | ZS-28-CA-2 |

⑨ Seal Cap (10 pcs.)

Be sure to mount a seal cap on any unused communication connectors. Otherwise, the specified enclosure cannot be maintained.

* 1 cap is included with the wireless base (EXW1-B□) and the wireless remote (EXW1-RL□).



EX9-AWTS
For M12

EXW1 Series Made to Order

Please contact SMC for detailed specifications and lead times.



① Communication Cable

With connector on one side (Socket)

Cable length: 10000 mm

For CC-Link

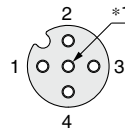
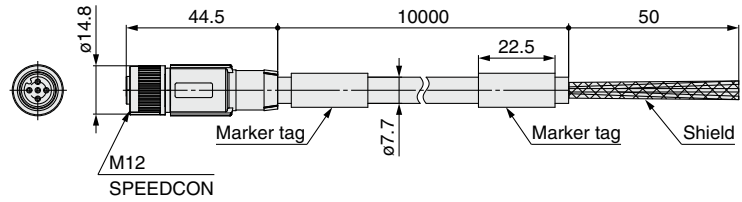
EX9-AC100 MJ -X12

• Applicable protocol

MJ CC-Link

Dimensions

For CC-Link



Socket connector
pin arrangement
A-coded (Normal key)

Connections

| Terminal no. | Core wire color: Signal name (CC-Link) |
|--------------|--|
| 1 | Shield: SLD |
| 2 | White: DB |
| 3 | Yellow: DG |
| 4 | Blue: DA |

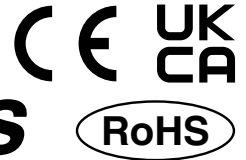
*1 Number of holes: 5, Total number of pins: 4

| Item | Specifications | |
|---------------------------------|----------------|-----------------------------|
| Cable O.D. | ø7.7 mm | |
| Conductor nominal cross section | Data pair | 0.5 mm ² /AWG20 |
| | Drain | 0.34 mm ² /AWG22 |
| Wire O.D. (Including insulator) | 2.55 mm | |
| Min. bending radius (Fixed) | 77 mm | |

Wireless System

Modular Type

EX600-W Series



How to Order

Wireless Unit

EX600-W EN 1

Wireless compatible

Protocol

| Symbol | Specifications | Note |
|-----------|----------------|------------------|
| EN | Base module | For EtherNet/IP™ |
| PN | Base module | For PROFINET |
| SV | Remote module | — |

Output type

| Symbol | Specifications |
|----------|----------------|
| 1 | PNP |
| 2 | NPN |

EtherNet/IP

PROFINET



Base module

Remote module

EXW1 Series

Accessories

Made to Order

EX600-W Series

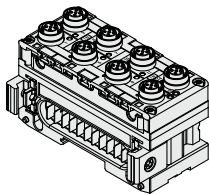
Accessories

Technical Data

Country-specific Radio Law Compliance Table

Specific Product Precautions

Digital Input Unit*1



EX600-DX P D

Digital input

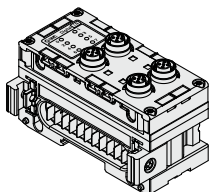
Input type

| Symbol | Description |
|----------|-------------|
| P | PNP |
| N | NPN |

Number of inputs and connector

| Symbol | Number of inputs | Connector |
|-----------|------------------|---|
| B | 8 inputs | M12 connector (5 pins) 4 pcs. |
| C | 8 inputs | M8 connector (3 pins) 8 pcs. |
| C1 | 8 inputs | M8 connector (3 pins) 8 pcs., With open-circuit detection |
| D | 16 inputs | M12 connector (5 pins) 8 pcs. |
| E | 16 inputs | D-sub connector (25 pins) |
| F | 16 inputs | Spring type terminal block (32 pins) |

Digital Output Unit*1



EX600-DY P B

Digital output

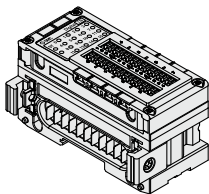
Output type

| Symbol | Description |
|----------|-------------|
| P | PNP |
| N | NPN |

Number of outputs and connector

| Symbol | Number of outputs | Connector |
|----------|-------------------|--------------------------------------|
| B | 8 outputs | M12 connector (5 pins) 4 pcs. |
| E | 16 outputs | D-sub connector (25 pins) |
| F | 16 outputs | Spring type terminal block (32 pins) |

Digital Input/Output Unit*1



EX600-DM P F

Digital input/output

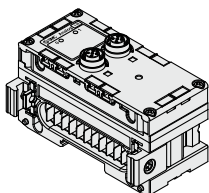
Input/Output type

| Symbol | Description |
|----------|-------------|
| P | PNP |
| N | NPN |

Number of inputs/outputs and connector

| Symbol | Number of inputs | Number of outputs | Connector |
|----------|------------------|-------------------|--------------------------------------|
| E | 8 inputs | 8 outputs | D-sub connector (25 pins) |
| F | 8 inputs | 8 outputs | Spring type terminal block (32 pins) |

Analog Input Unit*1



EX600-AX A

Analog input

Number of input channels and connector

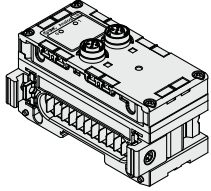
| Symbol | Number of input channels | Connector |
|----------|--------------------------|-------------------------------|
| A | 2 channels | M12 connector (5 pins) 2 pcs. |

*1 For specifications, refer to the Fieldbus system EX600 series in the Web Catalog.

EX600-W Series

How to Order

Analog Output Unit*1



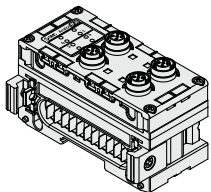
EX600-AY A

Analog output

Number of output channels and connector

| Symbol | Number of output channels | Connector |
|--------|---------------------------|-------------------------------|
| A | 2 channels | M12 connector (5 pins) 2 pcs. |

Analog Input/Output Unit*1



EX600-AM B

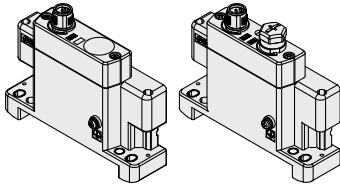
Analog input/output

Number of input/output channels and connector

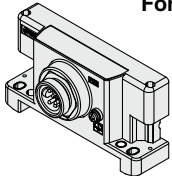
| Symbol | Number of input channels | Number of output channels | Connector |
|--------|--------------------------|---------------------------|-------------------------------|
| B | 2 channels | 2 channels | M12 connector (5 pins) 4 pcs. |

*1 For specifications, refer to the Fieldbus system EX600 series in the Web Catalog.

End Plate (D side)



For M12



For 7/8 inch

EX600-ED 2-2

End plate

End plate mounting position: D side

Power supply connector

| Symbol | Power supply connector | Specifications |
|--------|--------------------------|----------------|
| 2 | M12 (5 pins) B-coded | IN |
| 3 | 7/8 inch (5 pins) | IN |
| 4 | M12 (4/5 pins) A-coded*1 | IN/OUT |
| 5 | M12 (4/5 pins) A-coded*1 | IN/OUT |

*1 The pin layout for "4" and "5" pin connector is different.

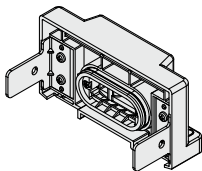
Refer to the dimensions on page 28.

Mounting method

| Symbol | Description | Note |
|--------|-----------------------------------|---------------------------|
| Nil | Without DIN rail mounting bracket | — |
| 2 | With DIN rail mounting bracket | For SV, S0700, VQC series |
| 3 | With DIN rail mounting bracket | For SY series |

* When the end plate (U side) is used, the symbol for the mounting method must be the same as the D side.

End Plate (U side)



End plate mounting position: U side

EX600-EU 1-2

End plate

Mounting method

| Symbol | Description | Note |
|--------|-----------------------------------|-----------------|
| Nil | Without DIN rail mounting bracket | — |
| 2 | With DIN rail mounting bracket | For EX600-ED□-2 |
| 3 | With DIN rail mounting bracket | For EX600-ED□-3 |

* When the end plate (D side) is used, the symbol for the mounting method must be the same as the U side.

| Symbol | Specifications |
|--------|------------------|
| 1 | Waterproof cover |

NFC Reader/Writer

EXW1-NT1

- * Order a fixing bracket.
- * A USB cable (3 m) is also included.



Fixing bracket (Option)

When optional parts are required, order with the part number below.

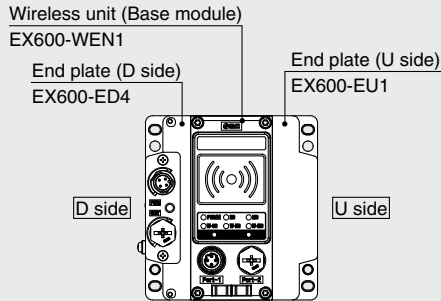
EXW1-AB 1

Variations

| Symbol | Description | Appearance | |
|--------|-------------|-------------|-----------------------|
| | | Single unit | Product mounting view |
| 1 | For EX600-W | | |

Ordering Example of the Base Module

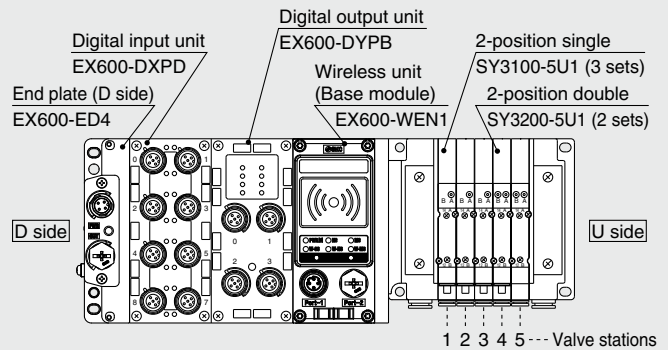
Base module: Without valve manifold and input/output unit



| | |
|------------|-------|
| EX600-ED4 | 1 set |
| EX600-WEN1 | 1 set |
| EX600-EU1 | 1 set |

· Products should be ordered separately and assembled by the customer.

Manifold with base module: With input/output unit



SS5Y3-10S6WE72-05B-C6
(Type 10 5-station manifold base, Base EtherNet/IP™ compatible)
Negative common, M12 connector IN/OUT pin arrangement 1, I/O unit: 2 stations

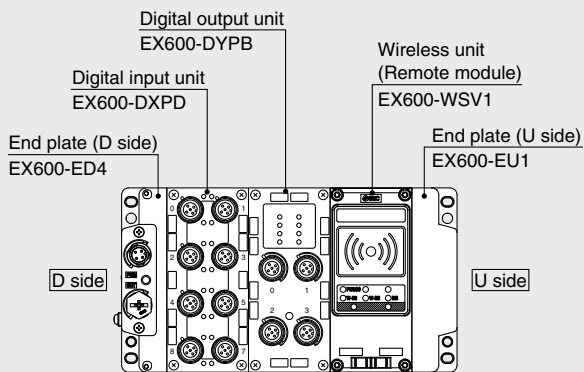
| | |
|--------------|--------------------------------------|
| * SY3100-5U1 | 3 sets (2-position single part no.) |
| * SY3200-5U1 | 2 sets (2-position double part no.) |
| * EX600-DXPD | 1 set I/O unit part no. (Stations 1) |
| * EX600-DYPB | 1 set I/O unit part no. (Stations 2) |

→ The asterisk denotes the symbol for the assembly. Prefix it to the part numbers of the valve, etc.

· For details, refer to the catalog of each valve series.
· The manifold part number cannot be selected when ordering from Malaysia according to Malaysian laws. The wireless unit (base module) needs to be ordered separately.

Ordering Example of the Remote Module

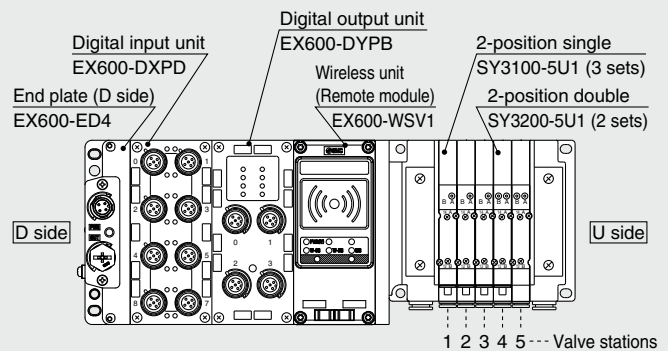
Remote module: Without valve manifold and with input/output unit



| | |
|------------|-------|
| EX600-ED4 | 1 set |
| EX600-DXPD | 1 set |
| EX600-DYPB | 1 set |
| EX600-WSV1 | 1 set |
| EX600-EU1 | 1 set |

· Products should be ordered separately and assembled by the customer.

Manifold with remote module: With input/output unit



SS5Y3-10S6WS72-05B-C6
(Type 10 5-station manifold base, remote)
Negative common, M12 connector IN/OUT pin arrangement 1, I/O unit: 2 stations

| | |
|--------------|--------------------------------------|
| * SY3100-5U1 | 3 sets (2-position single part no.) |
| * SY3200-5U1 | 2 sets (2-position double part no.) |
| * EX600-DXPD | 1 set I/O unit part no. (Stations 1) |
| * EX600-DYPB | 1 set I/O unit part no. (Stations 2) |

→ The asterisk denotes the symbol for the assembly. Prefix it to the part numbers of the valve, etc.

· For details, refer to the catalog of each valve series.
· The manifold part number cannot be selected when ordering from Malaysia according to Malaysian laws. The wireless unit (remote module) needs to be ordered separately.

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

Specific Product Precautions

EX600-W Series

Specifications

Base Module: EX600-WEN□

| Item | | Specifications | |
|----------------------------|---|--|--|
| EtherNet/IP™ communication | Communication protocol | EtherNet/IP™ (Conformance test version: Composite 12) | |
| | Transmission medium (cable) | Standard Ethernet cable (CAT5 or higher, 100BASE-TX) | |
| | Communication speed | 10 Mbps/100 Mbps | |
| | Communication method | Full duplex/Half duplex | |
| | Configuration file | EDS file*1 | |
| | IP address setting | Manual/BOOTP, DHCP | |
| | Device information | Vendor ID: 7 (SMC Corp.) Device type: 12 (Communication Adaptor) Product code: 186 | |
| | Topology | Star, Bus, Ring (DLR), Line, Tree | |
| | QuickConnect™ function | Applicable | |
| | DLR function | Applicable | |
| Web server function | Applicable | | |
| Wireless communication | Protocol | SMC original protocol (SMC encryption) V.1.0 | |
| | Radio wave type (spread) | Frequency Hopping Spread Spectrum (FHSS) | |
| | Frequency | 2.4 GHz (2403 to 2481 MHz) | |
| | Number of frequency channels | 79 ch (Bandwidth: 1.0 MHz) | |
| | Communication speed | 250 kbps | |
| | Communication distance | 10 m (Depending on the operating environment) | |
| | Radio Law certificate | Refer to the SMC website for the latest information regarding in which countries the product is certified. | |
| Electrical | For control/input (US1) | Power supply voltage | 24 VDC ±10% |
| | | Current consumption | 150 mA or less |
| | For output (US2) | Power supply voltage | 24 VDC ±10% |
| | | Max. supply current | 4 A |
| Input/Output | Number of inputs | System input size | Max. 1280 points together with the registered remote modules |
| | | Input size | Max. 128 points (increase or decrease by 16 points) |
| | Number of outputs | System output size | Max. 1280 points together with the registered remote modules |
| | | Output size | Max. 128 points (increase or decrease by 16 points) |
| | Analog input/output | AD refresh time | 10 ms or less (the input connected to the base module) 0.1/0.2/0.5/1/2/5/10/30/60 s (the input connected to the remote module)*2 |
| | | DA refresh time | 10 ms or less (the output connected to the base module) 0.1/0.2/0.5/1/2/5/10/30/60 s (the output connected to the remote module)*2 |
| | Valve output | Output type | EX600-WEN1: Source/PNP (-COM) EX600-WEN2: Sink/NPN (+COM) |
| | | Number of outputs | Max. 32 points (0/8/16/24/32 points) |
| | | Connected load | Solenoid valve with surge voltage suppressor of 24 VDC and 1.5 W or less (manufactured by SMC) |
| | | Number of remote modules connected | Max. 127 units (0/15/31/63/127 units) |
| | Number of connected EX600 I/O units | Max. 9 EX600 series I/O units (I/O = 128. I/O above 128 cannot be recognized.) | |
| General | Enclosure | Conforms to IP67 (with manifold assembled) | |
| | Ambient temperature (Operating temperature) | -10 to +50°C | |
| | Ambient temperature (Storage temperature) | -20 to +60°C | |
| | Ambient humidity | 35 to 85% RH (No condensation) | |
| | Withstand voltage | 500 VAC for 1 minute between external terminals and metallic parts | |
| | Insulation resistance | 10 MΩ or more (500 VDC between external terminals and metallic parts) | |
| | Vibration resistance | | Conforms to EN 61131-2 5 ≤ f < 8.4 Hz 3.5 mm 8.4 ≤ f < 150 Hz 9.8 m/s² (Excludes valve manifold) |
| | | Impact resistance | Conforms to EN 61131-2 147 m/s², 11 ms (Excludes valve manifold) |
| | Standards | CE/UKCA marking | |
| | Weight | 300 g | |
| | NFC communication*3 | Communication standard | ISO/IEC 14443B (Type-B) |
| | | Frequency | 13.56 MHz |
| Communication speed | | 20 to 100 kHz (12C) | |
| Communication distance | | Up to 1 cm | |

*1 The configuration file can be downloaded from the SMC website.

*2 Varies depending on the wireless communication status and the surrounding environment

*3 The NFC communication RFID tag of the 13.56 MHz passive type

■ Trademark

EtherNet/IP® is a registered trademark of ODVA, Inc.

Specifications

Base Module: EX600-WPN□

| Item | | Specifications | |
|------------------------|---|--|--|
| PROFINET communication | Communication protocol | PROFINET IO | |
| | Conformance class | Class C (Only for IRT switch function) | |
| | Transmission medium (cable) | Standard Ethernet cable (CAT5 or higher, 100BASE-TX) | |
| | Transmission speed | 100 Mbps | |
| | Configuration file | GSDML file*1 | |
| | FSU (Fast Start Up) | Applicable | |
| | MRP (Media Redundancy Protocol) | Applicable | |
| | Web server function | Applicable | |
| Wireless communication | Protocol | SMC original protocol (SMC encryption) V.1.0 | |
| | Radio wave type (spread) | Frequency Hopping Spread Spectrum (FHSS) | |
| | Frequency | 2.4 GHz (2403 to 2481 MHz) | |
| | Number of frequency channels | 79 ch (Bandwidth: 1.0 MHz) | |
| | Communication speed | 250 kbps | |
| | Communication distance | 10 m (Depending on the operating environment) | |
| | Radio Law certificate | Refer to the SMC website for the latest information regarding in which countries the product is certified. | |
| Electrical | For control/input (US1) | Power supply voltage | 24 VDC ±10% |
| | | Current consumption | 150 mA or less |
| | For output (US2) | Power supply voltage | 24 VDC ±10% |
| | | Max. supply current | 4 A |
| Input/Output | Number of inputs | System input size | Max. 1280 points together with the registered remote modules |
| | | Input size | Max. 128 points (increase or decrease by 16 points) |
| | Number of outputs | System output size | Max. 1280 points together with the registered remote modules |
| | | Output size | Max. 128 points (increase or decrease by 16 points) |
| | Analog input/output | AD refresh time | 10 ms or less (the input connected to the base module) 0.1/0.2/0.5/1/2/5/10/30/60 s (the input connected to the remote module)*2 |
| | | DA refresh time | 10 ms or less (the output connected to the base module) 0.1/0.2/0.5/1/2/5/10/30/60 s (the output connected to the remote module)*2 |
| | Valve output | Output type | EX600-WPN1: Source/PNP (-COM) EX600-WPN2: Sink/NPN (+COM) |
| | | Number of outputs | Max. 32 points (0/8/16/24/32 points) |
| | | Connected load | Solenoid valve with surge voltage suppressor of 24 VDC and 1.5 W or less (manufactured by SMC) |
| | Number of remote modules connected | | Max. 31 units (0/15/31 units) |
| | Number of connected EX600 I/O units | | Max. 9 EX600 series I/O units (I/O = 128. I/O above 128 cannot be recognized.) |
| General | Enclosure | | Conforms to IP67 (with manifold assembled) |
| | Ambient temperature (Operating temperature) | | -10 to +50°C |
| | Ambient temperature (Storage temperature) | | -20 to +60°C |
| | Ambient humidity | | 35 to 85% RH (No condensation) |
| | Withstand voltage | | 500 VAC for 1 minute between external terminals and metallic parts |
| | Insulation resistance | | 10 MΩ or more (500 VDC between external terminals and metallic parts) |
| | Vibration resistance | | Conforms to EN 61131-2 5 ≤ f < 8.4 Hz 3.5 mm 8.4 ≤ f < 150 Hz 9.8 m/s ² (Excludes valve manifold) |
| | Impact resistance | | Conforms to EN 61131-2 147 m/s ² , 11 ms (Excludes valve manifold) |
| | Standards | | CE/UKCA marking |
| | Weight | | 300 g |
| | NFC communication*3 | Communication standard | |
| Frequency | | 13.56 MHz | |
| Communication speed | | 20 to 100 kHz (I2C) | |
| Communication distance | | Up to 1 cm | |

*1 The configuration file can be downloaded from the SMC website.

*2 Varies depending on the wireless communication status and the surrounding environment

*3 The NFC communication RFID tag of the 13.56 MHz passive type

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-Specific Radio Law Compliance Table

Specific Product Precautions

EX600-W Series

Specifications

Remote Module: EX600-WSV□

| Item | | Specifications | |
|------------------------|---|--|---|
| Electrical | For control/input (US1) | Power supply voltage | 24 VDC ±10% |
| | | Current consumption | 70 mA or less |
| | For output (US2) | Power supply voltage | 24 VDC ±10% |
| | | Max. supply current | 4 A |
| Input/Output | Number of inputs | Input size | Max. 128 points (increase or decrease by 16 points) |
| | Number of outputs | Output size | Max. 128 points (increase or decrease by 16 points) |
| | AD/DA refresh time | | 0.1/0.2/0.5/1/2/5/10/30/60 s*1 |
| | Number of connected EX600 I/O units | | Max. 9 EX600 I/O units (I/O = 128. I/O above 128 cannot be recognized.) |
| | Valve output | Output type | EX600-WSV1: Source/PNP (-COM) EX600-WSV2: Sink/NPN (+COM) |
| | | Number of outputs | Max. 32 points (0/8/16/24/32 points) |
| Connected load | | Solenoid valve with surge voltage suppressor of 24 VDC and 1.5 W or less (manufactured by SMC) | |
| Wireless communication | Protocol | | SMC original protocol (SMC encryption) V.1.0 |
| | Radio wave type (spread) | | Frequency Hopping Spread Spectrum (FHSS) |
| | Frequency | | 2.4 GHz (2403 to 2481 MHz) |
| | Number of frequency channels | | 79 ch (Bandwidth: 1.0 MHz) |
| | Communication speed | | 250 kbps |
| | Communication distance | | 10 m (Depending on the operating environment) |
| Radio Law certificate | | Refer to the SMC website for the latest information regarding in which countries the product is certified. | |
| General | Enclosure | | Conforms to IP67 (with manifold assembled) |
| | Ambient temperature (Operating temperature) | | -10 to +50°C |
| | Ambient temperature (Storage temperature) | | -20 to +60°C |
| | Ambient humidity | | 35 to 85% RH (No condensation) |
| | Withstand voltage | | 500 VAC for 1 minute between external terminals and metallic parts |
| | Insulation resistance | | 10 MΩ or more (500 VDC between external terminals and metallic parts) |
| | Vibration resistance | | Conforms to EN 61131-2 5 ≤ f < 8.4 Hz 3.5 mm 8.4 ≤ f < 150 Hz 9.8 m/s ² (Excludes valve manifold) |
| | Impact resistance | | Conforms to EN 61131-2 147 m/s ² , 11 ms (Excludes valve manifold) |
| | Standards | | CE/UKCA marking |
| | Weight | | 280 g |
| NFC communication*2 | Communication standard | | ISO/IEC 14443B (Type-B) |
| | Frequency | | 13.56 MHz |
| | Communication speed | | 20 to 100 kHz (I2C) |
| | Communication distance | | Up to 1 cm |

*1 Varies depending on the wireless communication status and the surrounding environment

*2 The NFC communication RFID tag of the 13.56 MHz passive type

End Plate (D side)

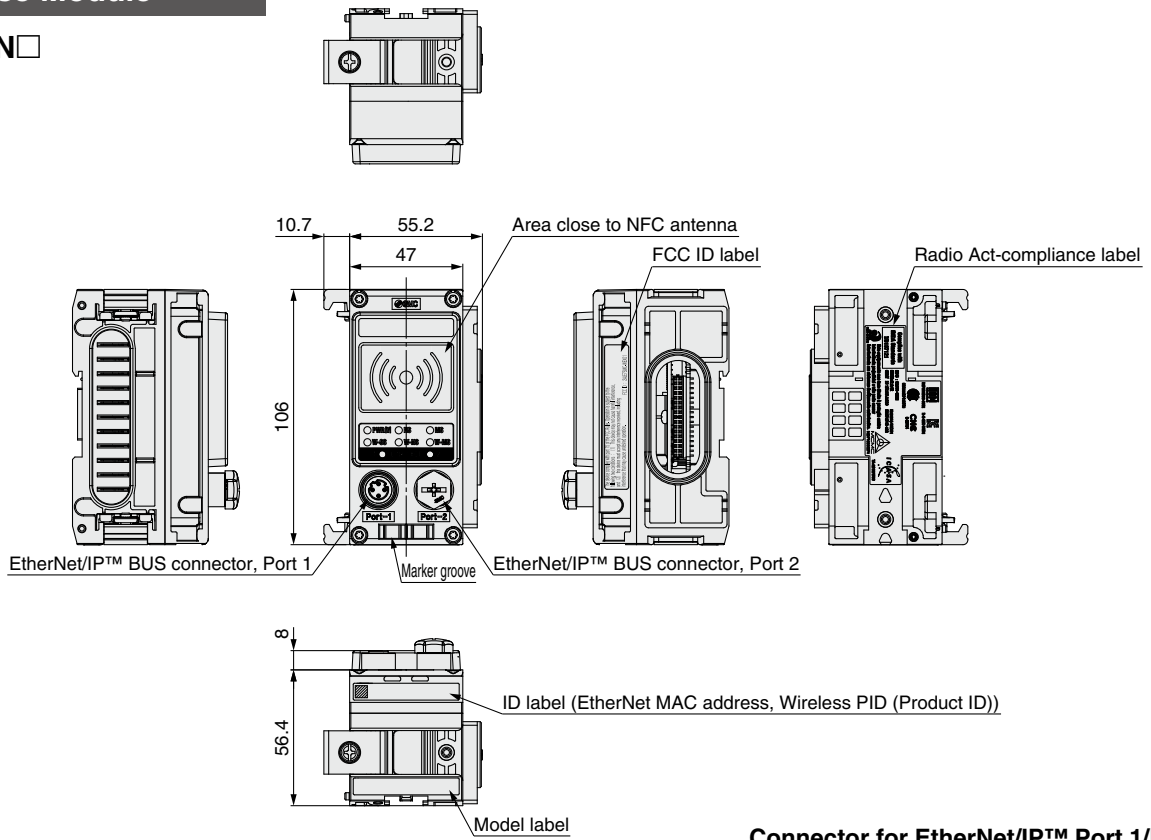
| Model | | EX600-ED2-□ | EX600-ED3-□ | EX600-ED4/5-□ | |
|---------------|--------------------------------|--------------------------------|------------------|-----------------------|--|
| Electrical | Power supply connector | PWR IN | M12 (5-pin) plug | 7/8 inch (5-pin) plug | |
| | | PWR OUT | — | — | |
| | Rated voltage | Power supply for control/input | 24 VDC ±10% | | |
| | | Power supply for output | 24 VDC +10/-5% | | |
| Rated current | Power supply for control/input | Max. 2 A | Max. 8 A | Max. 4 A | |
| | Power supply for output | | | | |
| Enclosure | | IP67 (with manifold assembled) | | | |
| Standards*1 | | CE/UKCA marking, UL (CSA) | | | |
| Weight | | 170 g | 175 g | 170 g | |

*1 The EX600-ED4/5-□ is not compliant with UL (CSA) standards.

Dimensions

Base Module

EX600-WEN □



Connector for EtherNet/IP™ Port 1/Port 2

| M12, 4-pin, D-coded, socket | Pin no. | Description |
|-----------------------------|---------|-------------|
| | 1 | Tx+ |
| | 2 | Rx+ |
| | 3 | Tx- |
| | 4 | Rx- |

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

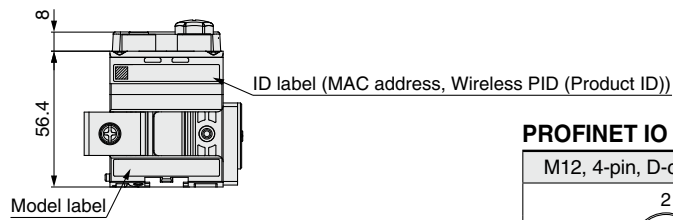
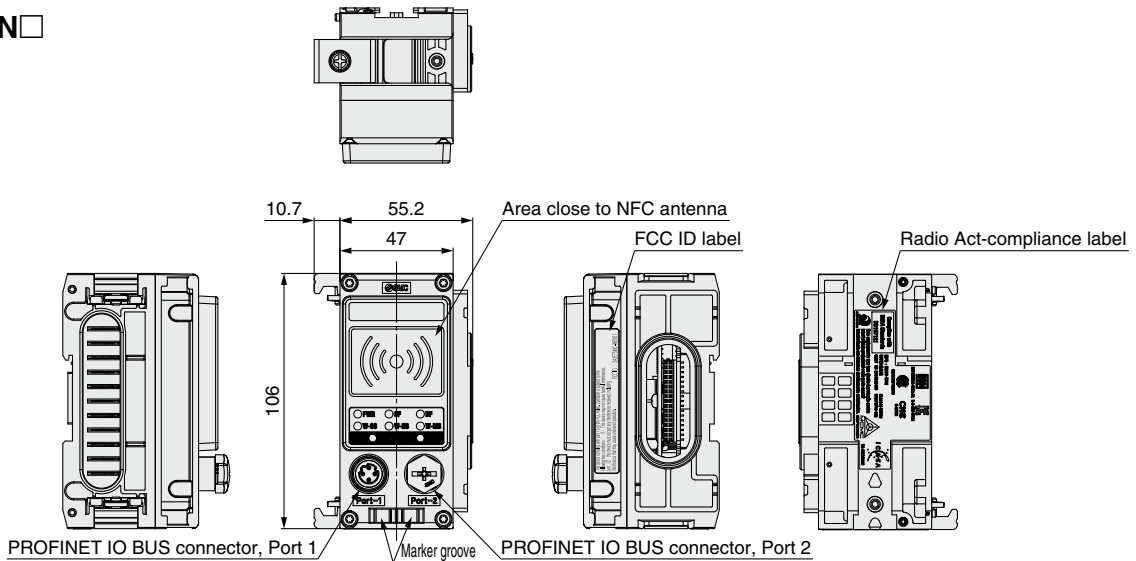
Specific Product Precautions

EX600-W Series

Dimensions

Base Module

EX600-WPN □

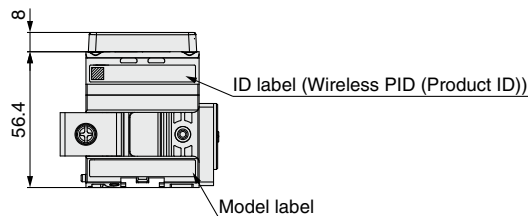
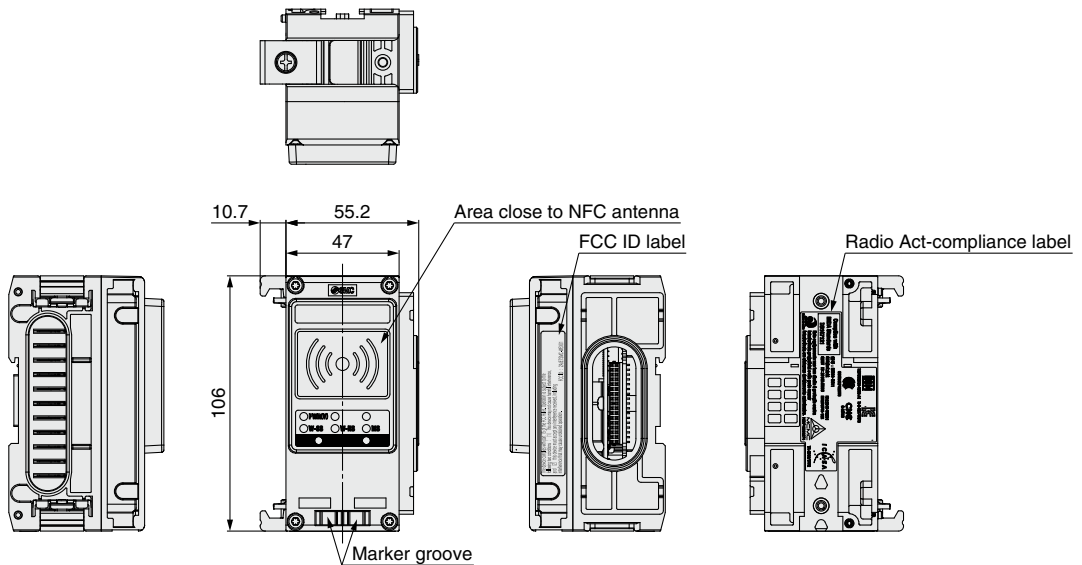


PROFINET IO BUS connector, Port 1/Port 2

| M12, 4-pin, D-coded, socket | Pin no. | Description |
|-----------------------------|---------|-------------|
| | 1 | TD+ |
| | 2 | RD+ |
| | 3 | TD- |
| | 4 | RD- |

Remote Module

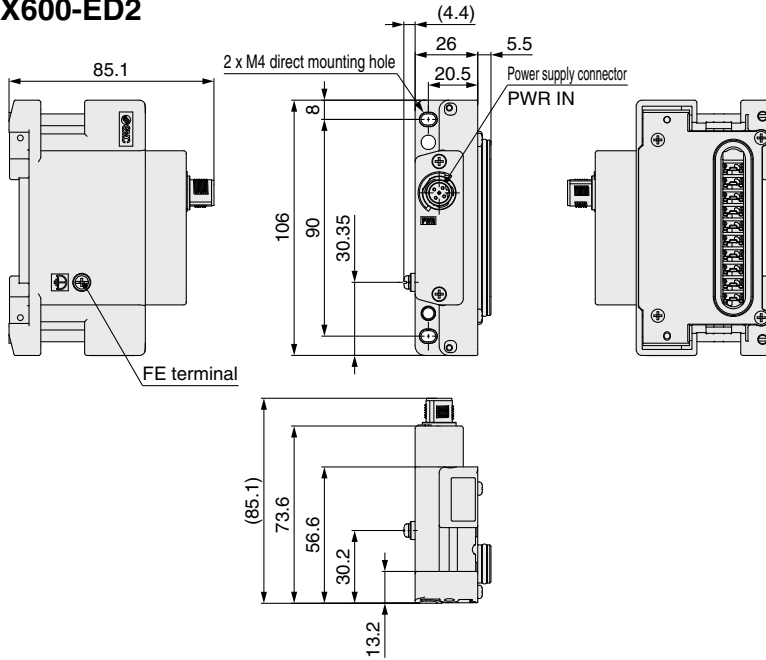
EX600-WSV □



Dimensions

End Plate (D side)

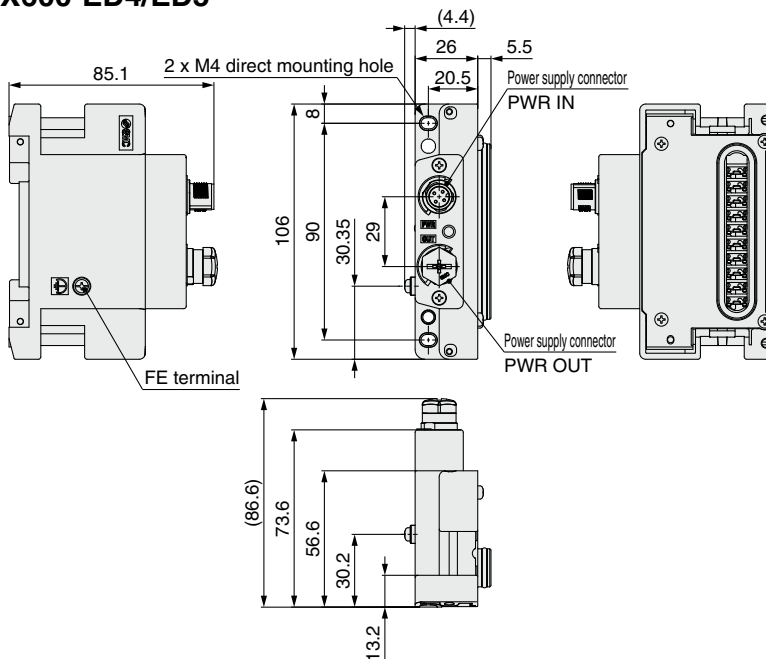
EX600-ED2



Power supply connector PWR IN: M12 5-pin plug, B-coded

| Configuration | Pin no. | Description |
|---------------|---------|--------------------------|
| | 1 | 24 V (for output) |
| | 2 | 0 V (for output) |
| | 3 | 24 V (for control/input) |
| | 4 | 0 V (for control/input) |
| | 5 | FE |

EX600-ED4/ED5



Power supply connector PWR IN: M12 4-pin plug, A-coded

| Configuration | EX600-ED4 (Pin arrangement 1) | | EX600-ED5 (Pin arrangement 2) | |
|---------------|-------------------------------|--------------------------|-------------------------------|--------------------------|
| | Pin no. | Description | Pin no. | Description |
| | 1 | 24 V (for control/input) | 1 | 24 V (for output) |
| | 2 | 24 V (for output) | 2 | 0 V (for output) |
| | 3 | 0 V (for control/input) | 3 | 24 V (for control/input) |
| | 4 | 0 V (for output) | 4 | 0 V (for control/input) |

Power supply connector PWR OUT: M12 5-pin socket, A-coded

| Configuration | EX600-ED4 (Pin arrangement 1) | | EX600-ED5 (Pin arrangement 2) | |
|---------------|-------------------------------|--------------------------|-------------------------------|--------------------------|
| | Pin no. | Description | Pin no. | Description |
| | 1 | 24 V (for control/input) | 1 | 24 V (for output) |
| | 2 | 24 V (for output) | 2 | 0 V (for output) |
| | 3 | 0 V (for control/input) | 3 | 24 V (for control/input) |
| | 4 | 0 V (for output) | 4 | 0 V (for control/input) |
| | 5 | Unused | 5 | Unused |

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-Specific Radio Law Compliance Table

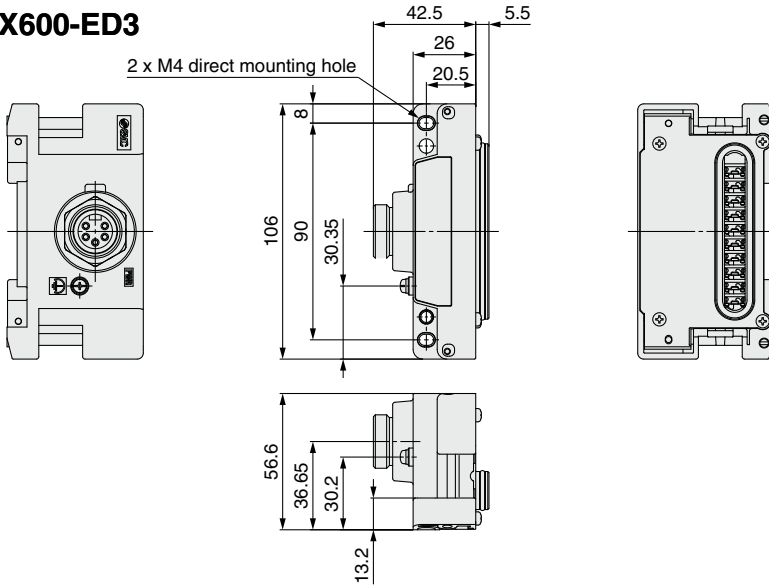
Specific Product Precautions

EX600-W Series

Dimensions

End Plate (D side)

EX600-ED3

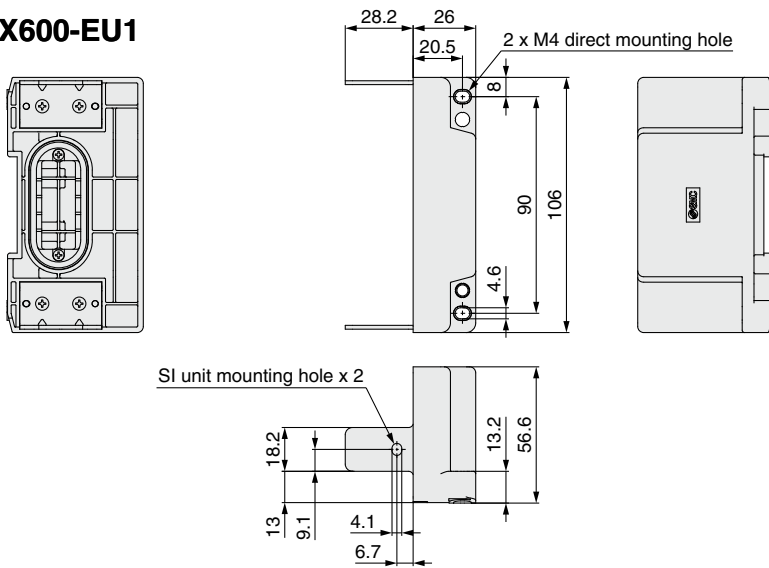


Power supply connector PWR: 7/8 inch 5-pin plug

| Configuration | Pin no. | Description |
|---------------|---------|--------------------------|
| | 1 | 0 V (for output) |
| | 2 | 0 V (for control/input) |
| | 3 | FE |
| | 4 | 24 V (for control/input) |
| | 5 | 24 V (for output) |

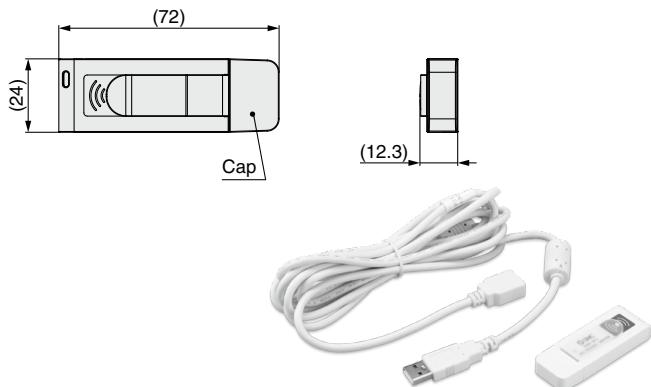
End Plate (U side)

EX600-EU1



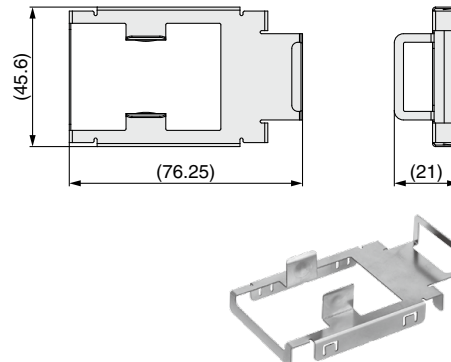
NFC Reader/Writer

EXW1-NT1



Fixing Bracket

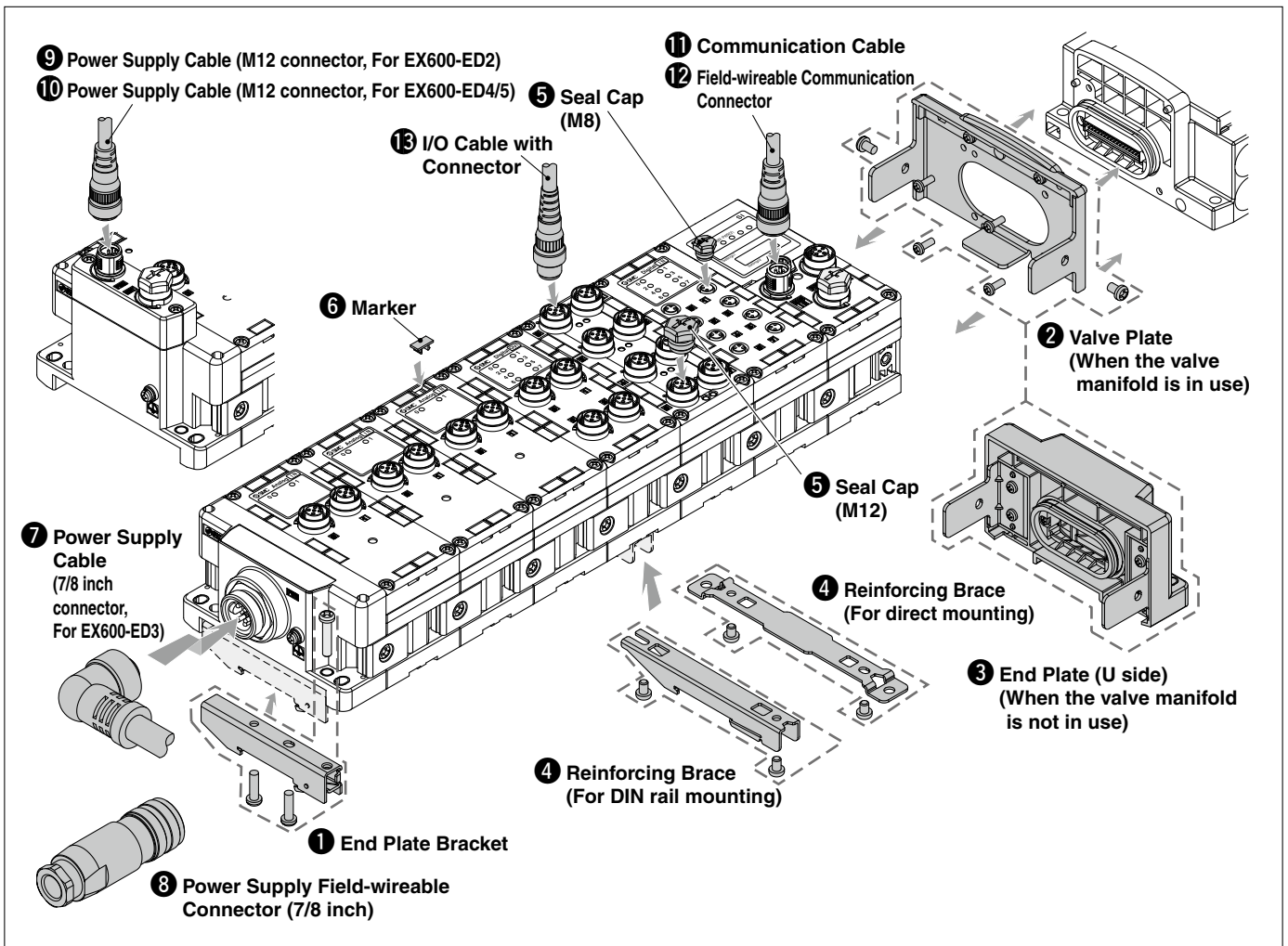
EXW1-AB1 (Option, For EX600-W)



* Order a fixing bracket.

EX600-W Series

Accessories (Optional Parts)



1 End Plate Bracket

This bracket is used for the end plate of DIN rail mounting.



EX600-ZMA2
(For the SV, S0700, and VQC series)

Enclosed parts
Round head screw (M4 x 20) 1 pc.
P-tight screw (4 x 14) 2 pcs.

EX600-ZMA3
(For the SY and JSY series)

Enclosed parts
Round head screw with washer (M4 x 20) 1 pc.
P-tight screw (4 x 14) 2 pcs.

2 Valve Plate

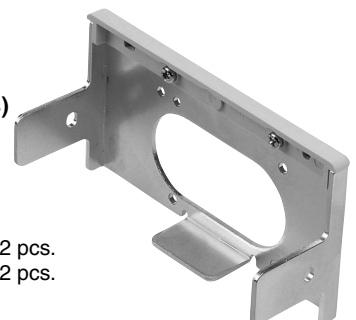
EX600-ZMV1
(For the SV, S0700, and VQC series)

Enclosed parts
Round head screw (M4 x 6) 2 pcs.
Round head screw (M3 x 8) 4 pcs.



EX600-ZMV2
(For the SY and JSY series)

Enclosed parts
Round head screw (M4 x 6) 2 pcs.
Round head screw (M3 x 8) 2 pcs.



EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-Specific Radio Law Compliance Table

Specific Product Precautions

EX600-W Series

③ End Plate (U side)

The end plate is for use when the manifold valve is not connected.

EX600-**E**U**1**-**2**

● Mounting method

| Symbol | Description | Note |
|--------|-----------------------------------|-----------------|
| Nil | Without DIN rail mounting bracket | — |
| 2 | With DIN rail mounting bracket | For EX600-ED□-2 |
| 3 | With DIN rail mounting bracket | For EX600-ED□-3 |

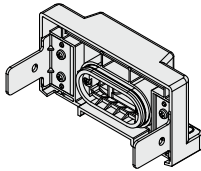
* Select in accordance with the symbol for the end plate (D side) mounting method.

● Specification

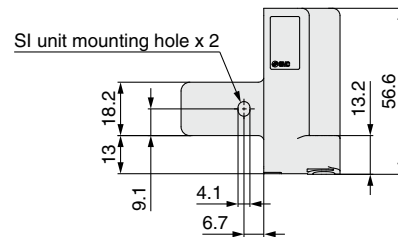
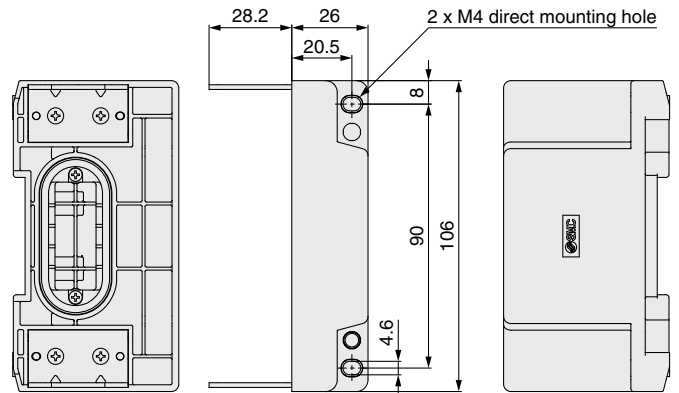
| Symbol | Specification |
|--------|------------------|
| 1 | Waterproof cover |

● End plate mounting position: U side

● End plate



EX600-EU1



Enclosed parts

Round head screw (M4 x 6) 2 pcs.

④ Reinforcing Brace

This bracket is used on the bottom of the unit at the intermediate position for connecting 6 units or more.

* Be sure to attach this bracket to prevent connection failure between the units caused by deflection.

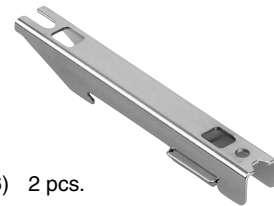
For direct mounting
EX600-ZMB1



Enclosed parts

Round head screw (M4 x 5) 2 pcs.

For DIN rail mounting
EX600-ZMB2



Enclosed parts

Round head screw (M4 x 6) 2 pcs.

⑤ 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-AWES
For M8



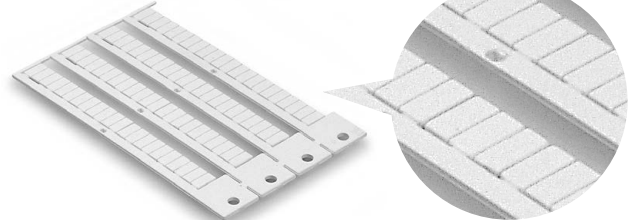
EX9-AWTS
For M12



⑥ Marker (1 sheet, 88 pcs.)

The signal name of I/O device and each unit address can be entered and mounted on each unit.

EX600-ZT1

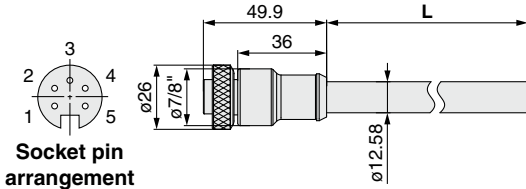


7 Power Supply Cable (7/8 inch connector, For EX600-ED3)

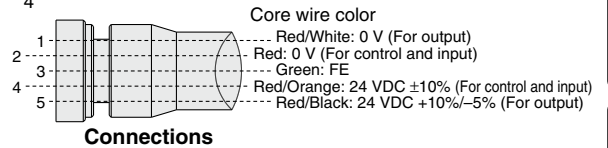
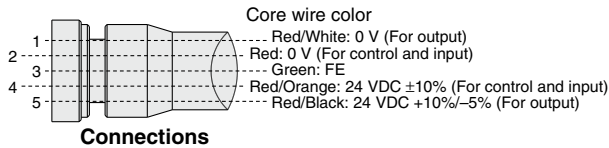
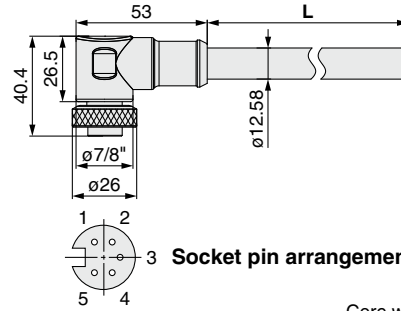
- PCA-1558810 Straight 2 m
- PCA-1558823 Straight 6 m
- PCA-1558836 Right angled 2 m
- PCA-1558849 Right angled 6 m



Straight connector type



Angled connector type



| Item | Specifications |
|--|----------------------------|
| Cable O.D. | ø12.58 mm |
| Conductor nominal cross section | 1.5 mm ² /AWG16 |
| Wire O.D. (Including insulator) | 2.35 mm |
| Min. bending radius (Fixed) | 110 mm |

8 Power Supply Field-wireable Connector (7/8 inch)

- PCA-1578081 Socket [compatible with AWG22-16]



Applicable Cable

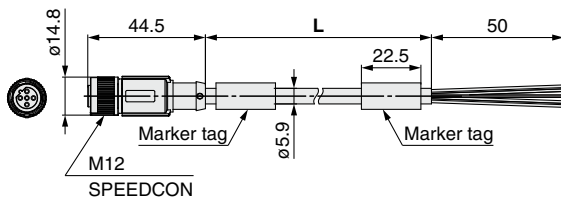
| Item | Specifications |
|---|--|
| Cable O.D. | ø12.0 to 14.0 mm |
| Wire gauge (Stranded wire cross section) | 0.34 to 1.5 mm ² AWG22 to 16 |

9 Power Supply Cable (M12 connector, For EX600-ED2) * The shape of the M12 connector is B-coded (Reverse key).

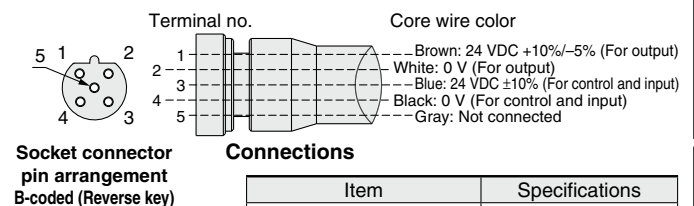
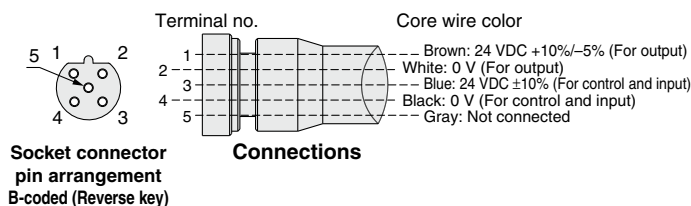
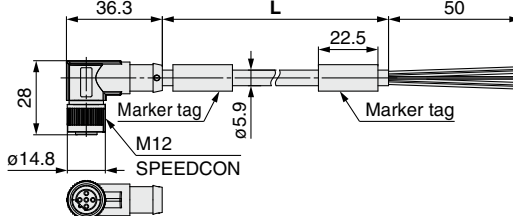
- PCA-1564927 Straight 2 m
- PCA-1564930 Straight 6 m
- PCA-1564943 Right angled 2 m
- PCA-1564969 Right angled 6 m



Straight connector type



Angled connector type



| Item | Specifications |
|--|-----------------------------|
| Cable O.D. | ø5.9 mm |
| Conductor nominal cross section | 0.34 mm ² /AWG22 |
| Wire O.D. (Including insulator) | 1.27 mm |
| Min. bending radius (Fixed) | 59 mm |

EX600-W Series

⑩ Power Supply Cable (M12 connector, For EX600-ED4/5)

* The shape of the M12 connector is A-coded (Normal key).

EX500-AP **050** - **S**

Cable length (L)

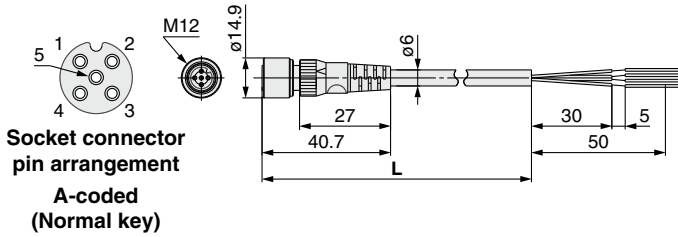
| | |
|------------|---------|
| 010 | 1000 mm |
| 050 | 5000 mm |

Connector specification

| | |
|----------|----------|
| S | Straight |
| A | Angled |

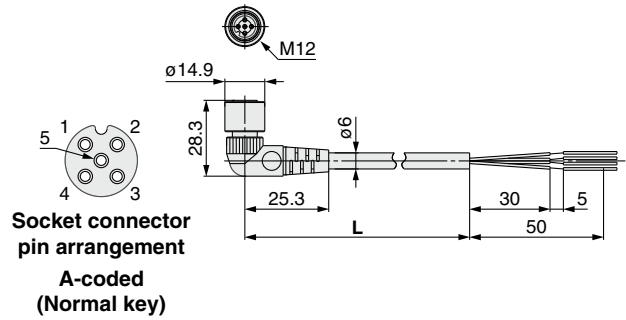


Straight connector type

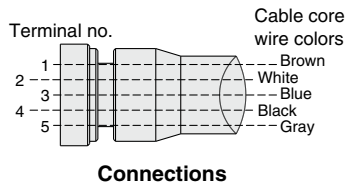


| Item | Specifications |
|-------------------------------------|----------------------------|
| Cable O.D. | ø6 mm |
| Nominal cross section | 0.3 mm ² /AWG22 |
| Wire diameter (Including insulator) | 1.5 mm |
| Min. bending radius | 40 mm (Fixed) |

Angled connector type



| Item | Specifications |
|-------------------------------------|----------------------------|
| Cable O.D. | ø6 mm |
| Nominal cross section | 0.3 mm ² /AWG22 |
| Wire diameter (Including insulator) | 1.5 mm |
| Min. bending radius | 40 mm (Fixed) |

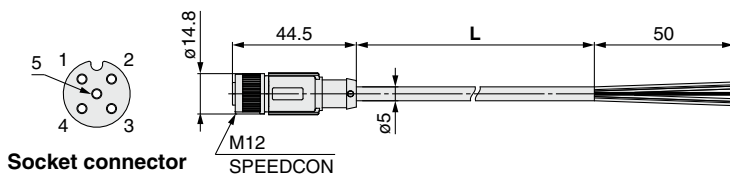


SPEEDCON

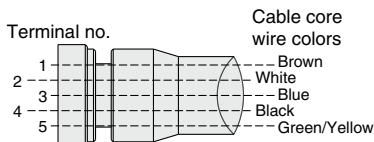
PCA- **1401804**

Cable length (L)

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



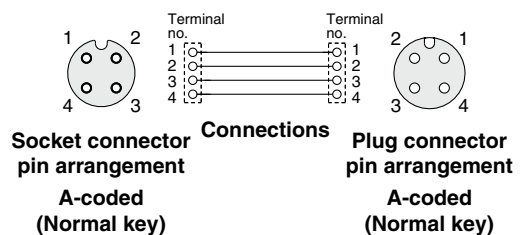
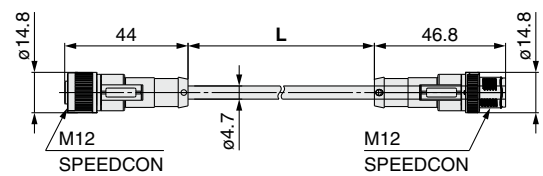
| Item | Specifications |
|-------------------------------------|----------------------------|
| Cable O.D. | ø5 mm |
| Nominal cross section | 0.3 mm ² /AWG22 |
| Wire diameter (Including insulator) | 1.27 mm |
| Min. bending radius | 21.7 mm (Fixed) |



PCA- **1557769**

Cable length (L)

| | |
|----------------|---------|
| 1557769 | 3000 mm |
|----------------|---------|



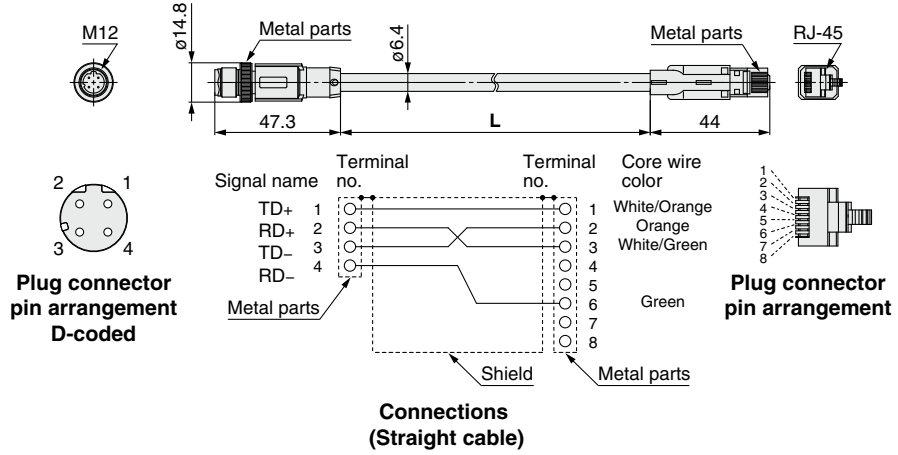
① Communication Cable

For PROFINET For EtherNet/IP™

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

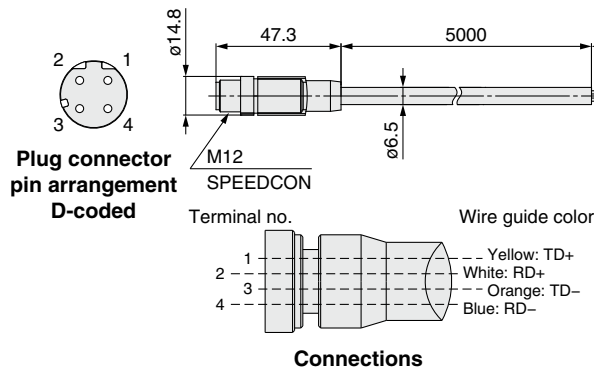
● Cable length (L)

| | |
|-----|----------|
| 010 | 1000 mm |
| 020 | 2000 mm |
| 030 | 3000 mm |
| 050 | 5000 mm |
| 100 | 10000 mm |



| Item | Specifications |
|--|-----------------------------|
| Cable O.D. | ø6.4 mm |
| Conductor nominal cross section | 0.14 mm ² /AWG26 |
| Wire O.D. (Including insulator) | 0.98 mm |
| Min. bending radius (Fixed) | 26 mm |

PCA-1446566 (Plug)



| Item | Specifications |
|--|----------------|
| 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 |

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

Specific Product Precautions

EX600-W Series

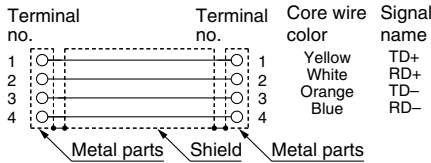
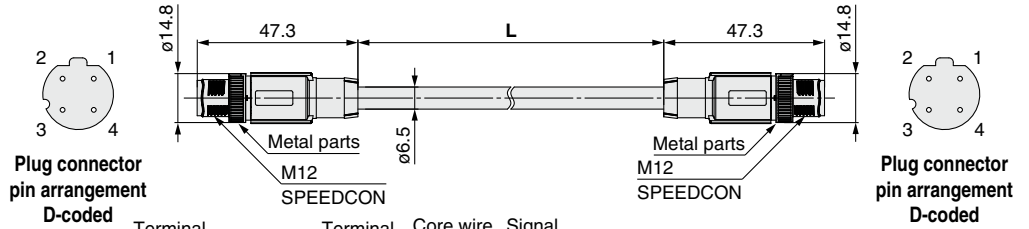
① Communication Cable

For PROFINET For EtherNet/IP™

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 |



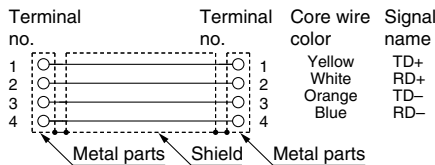
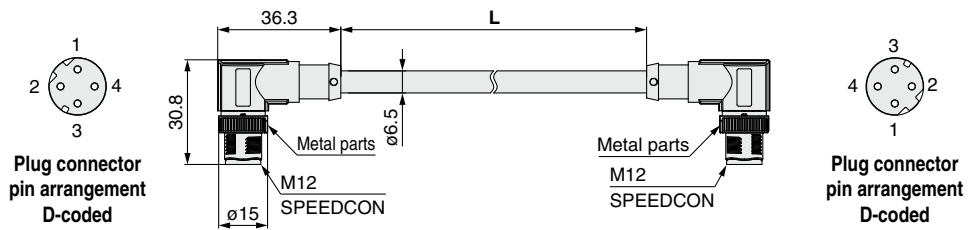
| Item | Specifications |
|--|-----------------------------|
| Cable O.D. | ø6.5 mm |
| Conductor nominal cross section | 0.34 mm ² /AWG22 |
| Wire O.D. (Including insulator) | 1.55 mm |
| Min. bending radius (Fixed) | 19.5 mm |

Connections (Straight cable)

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 |
|--|-----------------------------|
| Cable O.D. | ø6.5 mm |
| Conductor nominal cross section | 0.34 mm ² /AWG22 |
| Wire O.D. (Including insulator) | 1.55 mm |
| Min. bending radius (Fixed) | 19.5 mm |

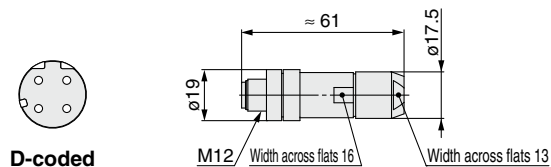
Connections (Straight cable)

② Field-wireable Communication Connector

Plug

For PROFINET For EtherNet/IP™

PCA-1446553

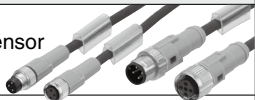




Applicable Cable

| Item | Specifications |
|---|---|
| Cable O.D. | 4.0 to 8.0 mm |
| Wire gauge (Stranded wire cross section) | 0.14 to 0.34 mm ² /AWG26 to 22 |

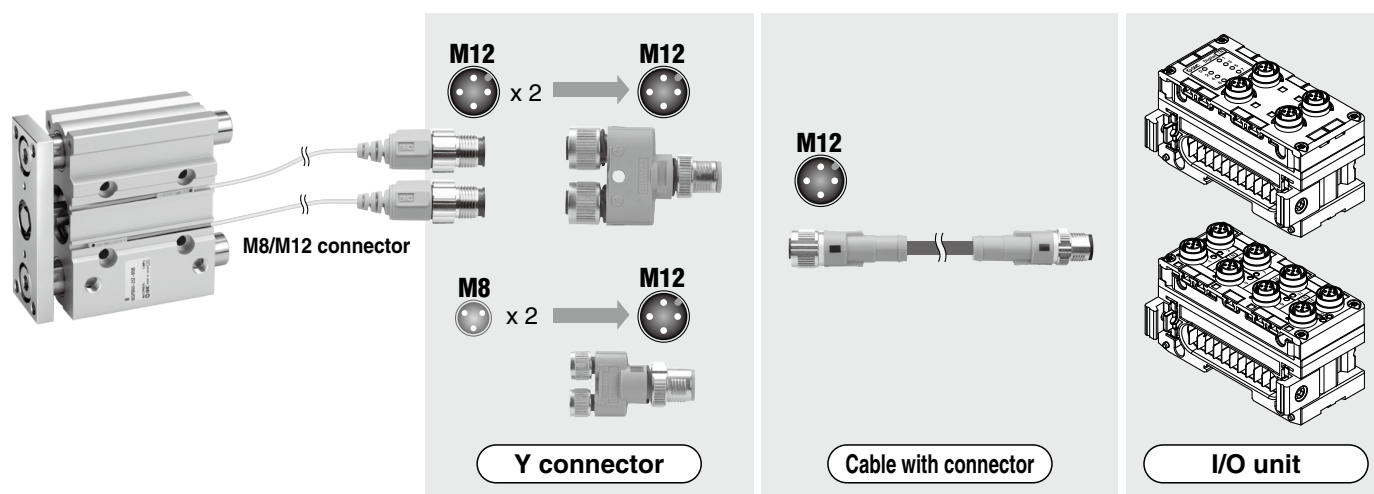
* The table above shows the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

⑬ I/O Cable with Connector, I/O Connector

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

* For further information, refer to the M8/M12 connector PCA series in the **Web Catalog**.

* When using the Y connector, connect it to the connector on the I/O unit through the sensor cable (PCA-1557769) with the M12 connector.



EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

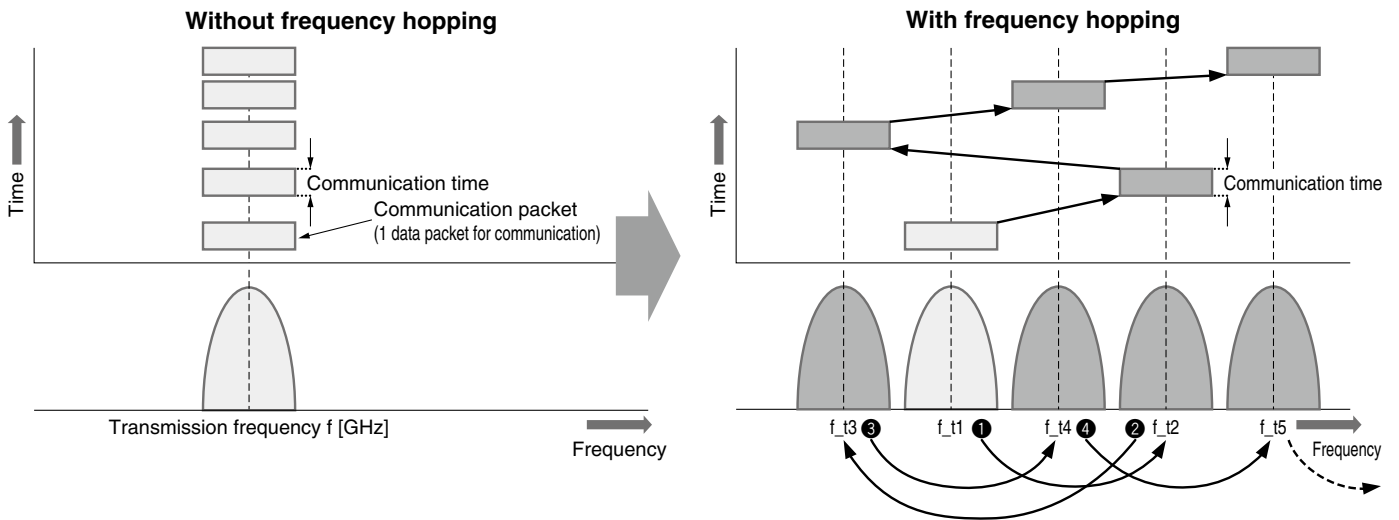
Country-Specific Radio Law Compliance Table

Specific Product Precautions

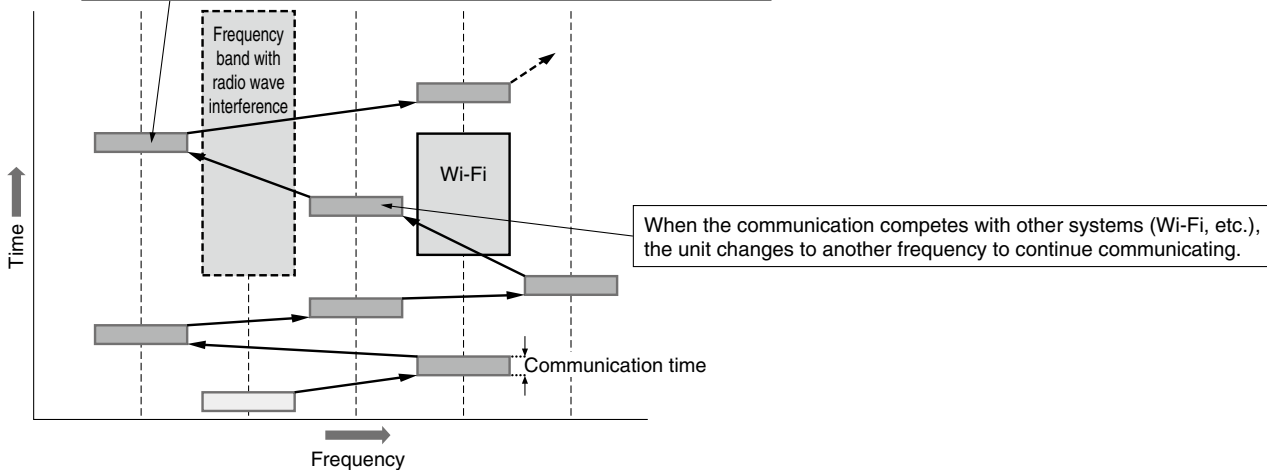
Technical Data

Frequency Hopping (FHSS: Frequency Hopping Spread Spectrum)

This communication technology uses spread spectrum transmission with frequency hopping to rapidly switch between frequencies. Because the frequency is constantly changing, this communication method is resistant to radio wave interference due to reflections or noise from other wireless equipment. It also allows for a high level of data security. Multiple systems can be installed in the same area, and it is a suitable technology for point-to-multipoint communication.



When a source of radio interference is present on a specific frequency, communication is maintained by moving to another frequency.




Warning <Important>

- This product is already certified in accordance with the Radio Act and the Japanese Radio Law, so customers do not need to apply for a license to use this product.
However, be sure to comply with the following.
 - Do not disassemble or modify the product. Disassembly and modification are prohibited by law.
 - Customers in countries that comply with the Radio Law should refer to the "Country-specific Radio Law Compliance Table."
- As this product communicates by radio waves, communication may stop temporarily due to the ambient environment and/or operating method. SMC will not be held responsible for any secondary failure which may cause personal injury or damage to other devices or equipment.
- When several units are installed in close proximity to each other, slight interference may occur due to the characteristics of the wireless product.
- The electromagnetic waves emitted from this product may interfere with implantable medical devices such as cardiac pacemakers and cardioverter defibrillators, resulting in the malfunction of the medical device or other adverse effects.
Please use extreme caution when operating equipment which may have an adverse effect on your implantable medical device. Be sure to thoroughly read the precautions stated in the catalog, operation manual, etc., of your implantable medical device, or contact the manufacturer directly for further details on what types of equipment need to be avoided.
- The communication performance is affected by the ambient environment, so be sure to perform communication testing before use.

EXW1/EX600-W Series Country-specific Radio Law Compliance Table

As of September 2023

| | | Wireless system | | | | | | Modular type EX600-W | NFC reader/writer |
|--|----------------------|---|-----------------------------------|--------------------------------------|-----------------------------------|------------------|------------------|--------------------------------|-------------------|
| | | Compact type EXW1 | | | | External antenna | Internal antenna | | |
| | | Wireless adapter EXW1-A1  | | Compact base/remote CC-Link/e-CON | | | | | |
| Area | Country/Region | Part number suffix: E type | Part number suffix: N type | Part number suffix: E type | Part number suffix: N type | EX600-W | EXW1-NT1 | | |
| Europe CE | Ireland | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Italy | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Estonia | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Austria | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Netherlands | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Cyprus | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Greece | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Croatia | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Sweden | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Spain | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Slovakia | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Slovenia | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Czech Republic | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Denmark | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Germany | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Hungary | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Finland | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | France | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Bulgaria | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Belgium | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Poland | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Portugal | ○ | ○ | ○ | ○ | ○ | ○ | | |
| Malta | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Latvia | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Lithuania | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Romania | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Luxembourg | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Other Europe | Iceland | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Liechtenstein | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Switzerland | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Norway | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Turkey | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | U.K. | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Ukraine | — | — | — | — | ○ | ○ | | |
| | Israel | ○ | ○ | — | — | — | — | | |
| | Saudi Arabia | ○ | ○ | — | — | — | — | | |
| | United Arab Emirates | ○ | ○ | — | — | — | — | | |
| | Serbia | ○ | ○ | — | — | — | — | | |
| | South Africa | ○ | ○ | — | — | — | ○ | | |
| Africa | Egypt | ○ | ○ | — | — | — | — | | |
| | Morocco | — | — | — | — | — | — | | |
| | U.S. | — | ○ | — | — | ○ | ○ | | |
| North, Central, and South America | Argentina | — | ○ | — | — | ○ | ○ | | |
| | Canada | — | ○ | — | — | ○ | ○ | | |
| | Chile | ○ | ○ | — | — | — | ○ | | |
| | Colombia | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Peru | ○ | ○ | — | — | — | — | | |
| | Brazil | — | ○ | — | — | — | ○ | | |
| | Mexico | — | ○ | — | — | — | ○ | | |
| Asia | India | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Pakistan | ○ | ○ | — | — | — | — | | |
| | Indonesia | ○ | ○ | — | — | — | ○ | | |
| | Australia | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | South Korea | — | ○ | — | — | — | ○ | | |
| | Singapore | ○ | ○ | — | — | — | ○ | | |
| | Thailand | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | China | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Japan | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | New Zealand | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Philippines | ○ | ○ | — | — | — | ○ | | |
| | Myanmar | ○ | ○ | — | — | — | — | | |
| | Vietnam | ○ | ○ | ○ | ○ | ○ | ○ | | |
| | Bangladesh | ○ | ○ | — | — | — | — | | |
| | Hong Kong | ○ | ○ | — | — | — | — | | |
| Malaysia* ¹ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Taiwan | — | ○ | — | — | — | ○ | | | |

*1 If this product is to be imported into Malaysia (including if the product is integrated into other equipment), an SMC Wireless System Certificate of Compliance and a test report may be required in some cases. Please contact SMC for further details.



EXW1/EX600-W 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.

Notice

⚠ Caution

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Handling Precautions

⚠ Caution

1. This equipment complies with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the operation manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
2. This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:
 - (1) This device may not cause interference; and
 - (2) This device must accept any interference, including interference that may cause undesired operation of the device.
3. When operating the product, please be sure to maintain a separation distance of at least 20 cm between your body (excluding fingers, hands, wrists, ankles, and feet) and the product to meet RF exposure safety requirements as determined by FCC and Innovation, Science and Economic Development Canada. Installation of this device must ensure that at 20 cm separation distance is maintained between the device and end users.

■ Trademark

EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.
EtherNet/IP® is a registered trademark of ODVA, Inc.

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.

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

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

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

*1) ISO 4414: Pneumatic fluid power - General rules and safety requirements for systems and their components
ISO 4413: Hydraulic fluid power - General rules and safety requirements for systems and their components
IEC 60204-1: Safety of machinery - Electrical equipment of machines - Part 1: General requirements
ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots etc.

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. Our products cannot be used beyond their specifications. Our products are not developed, designed, and manufactured to be used under the following conditions or environments. Use under such conditions or environments is not covered.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, fuel equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogs and operation manuals.
3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.

Caution

We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries.

Use in non-manufacturing industries is not covered.

Products we manufacture and sell cannot be used for the purpose of transactions or certification specified in the Measurement Act.

The new Measurement Act prohibits use of any unit other than SI units in Japan.

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.

*2) **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 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.

Revision History

Edition B * A U-side end plate (for the SY) has been added.

WT

Edition C * The EXW1 series compact wireless system has been added.

AT


Edition D * UKCA compliance has been added.

* Countries in which the product is Radio Law certified have been added. AY

Edition E * EtherCAT (protocol) has been added to the EXW1 series (compact type).
* The number of pages has been increased from 48 to 52.

Edition F * IO-Link has been added as a protocol for the compact type EXW1 series wireless remote.

* The number of pages has been increased from 52 to 60.

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

SMC Corporation