Wireless System

CE UKCA (RoHS)

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

Compact wireless base

Communication distance: 100 m

Compact wireless remote

Mixed input and output loading

■ 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).

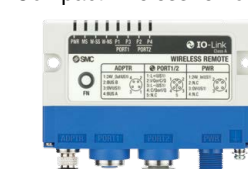### ■ Compared with the EX600-W series (remote)

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

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

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

---

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

SMC®

CAT.E02-28F

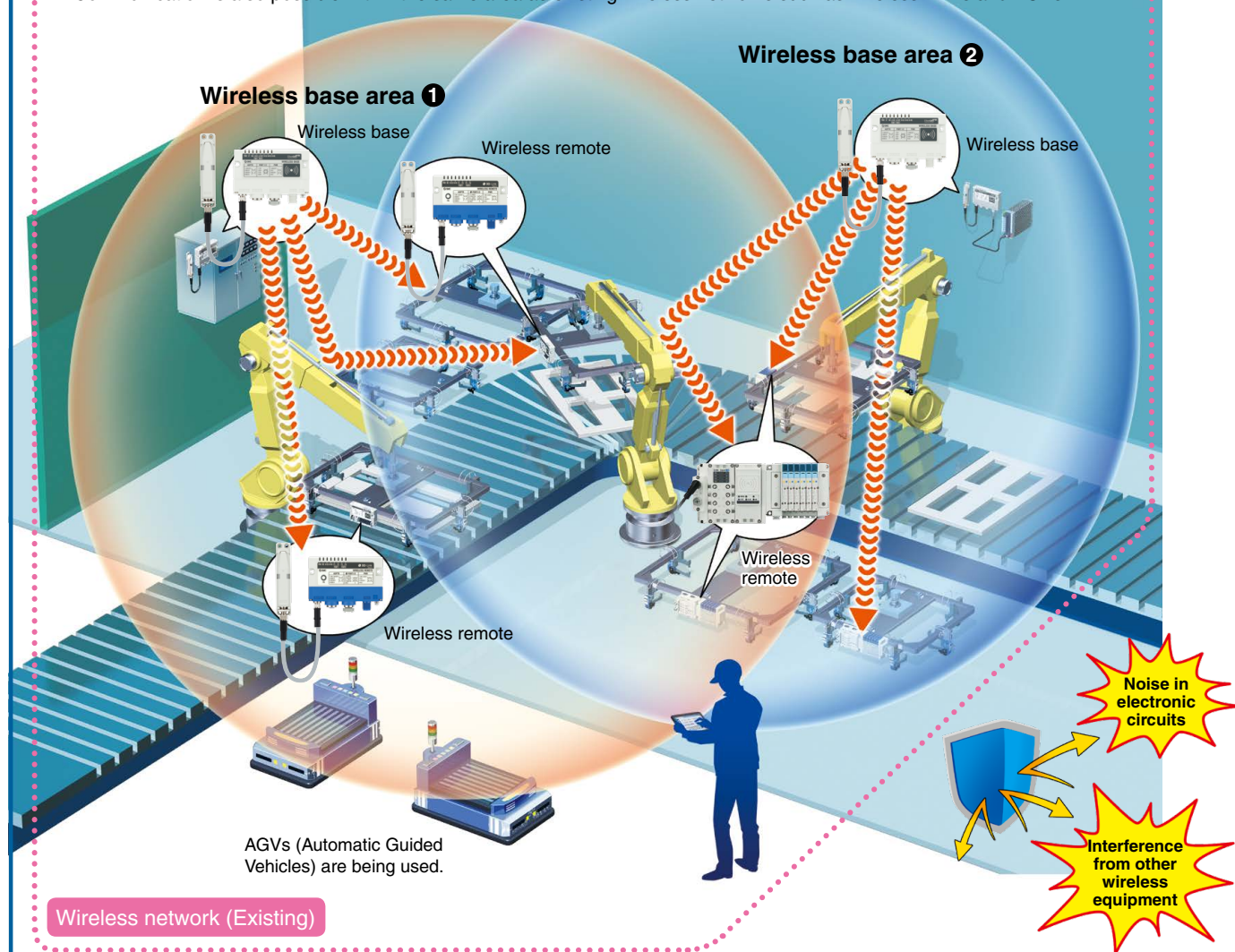# Provides communication stability in FA environments

Compact	Modular
EXW1	**EX600-W**

- 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.

Wireless base area ❶

Wireless base area ❷

Wireless base

Wireless remote

Wireless base

Wireless remote

Wireless remote

Noise in electronic circuits

Interference from other wireless equipment

AGVs (Automatic Guided Vehicles) are being used.

Wireless network (Existing)

Antenna support

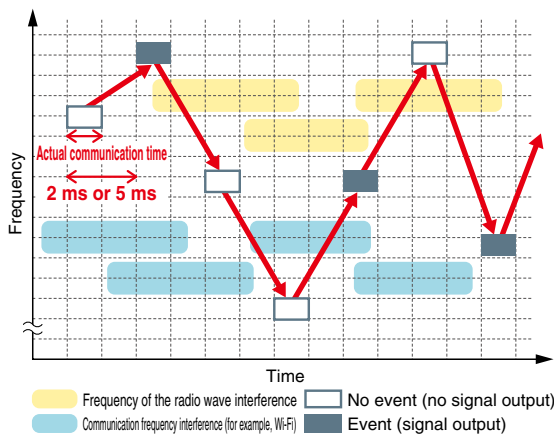| Compact |
|---|
| **EXW1** |

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.

Wireless adapter

Compact wireless base

Compact remote

Control panel

Control box

SMC
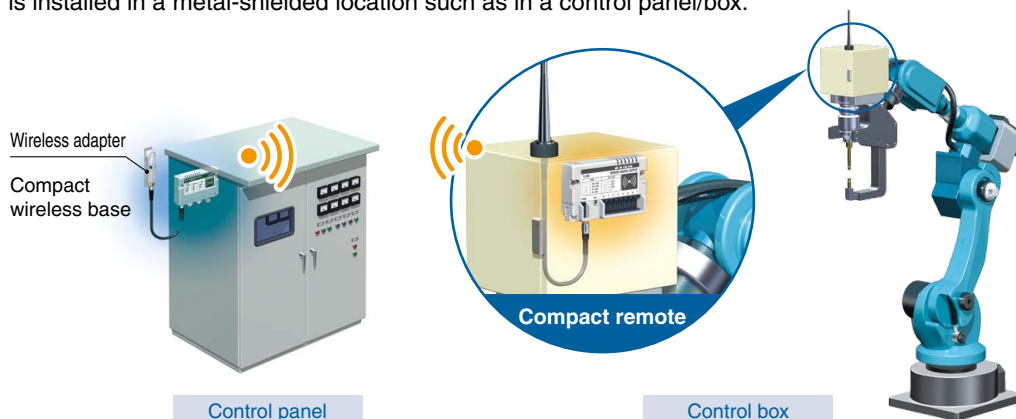
Frequency hopping/Event communication system

Compact **EXW1** | Modular **EX600-W**

Actual communication time

2 ms or 5 ms

Frequency

Time

- Frequency of the radio wave interference
- Communication frequency interference (for example, Wi-Fi)
- No event (no signal output)
- Event (signal output)

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.

Event communication system

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.

Frequency hopping cycle

2 ms *1

or

5 ms

∗1 For the EXW1 only

F.C.S. (Frequency channel select) function supported
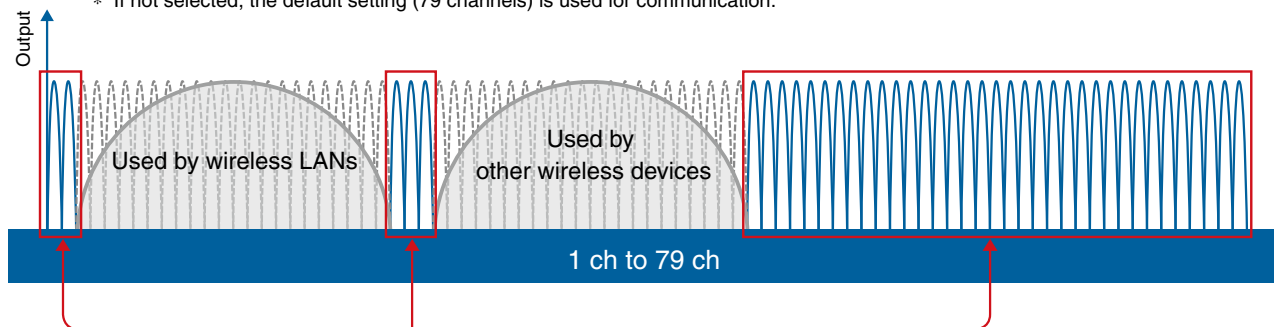
Compact **EXW1**

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

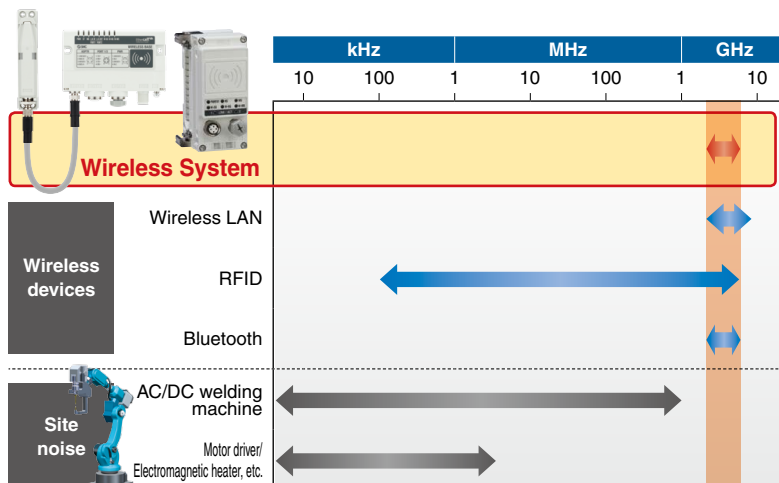∗ If not selected, the default setting (79 channels) is used for communication.

Output

Used by wireless LANs

Used by other wireless devices

1 ch to 79 ch

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

	kHz	MHz	GHz
	10 100	1 10 100	1 10

Wireless System

Wireless devices
- Wireless LAN
- RFID
- Bluetooth

Site noise
- AC/DC welding machine
- Motor driver/ Electromagnetic heater, etc.

∗ 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.

Base

Remote

Unauthorized wiretapping

Removing device

Unauthorized access/ data falsification
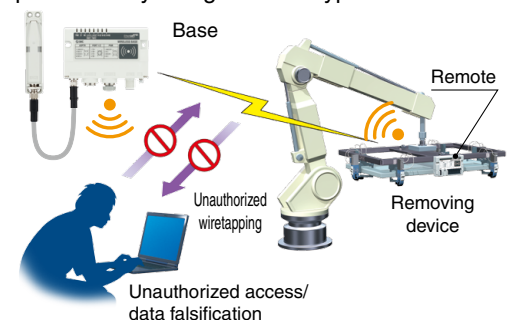
Remote high-speed connection

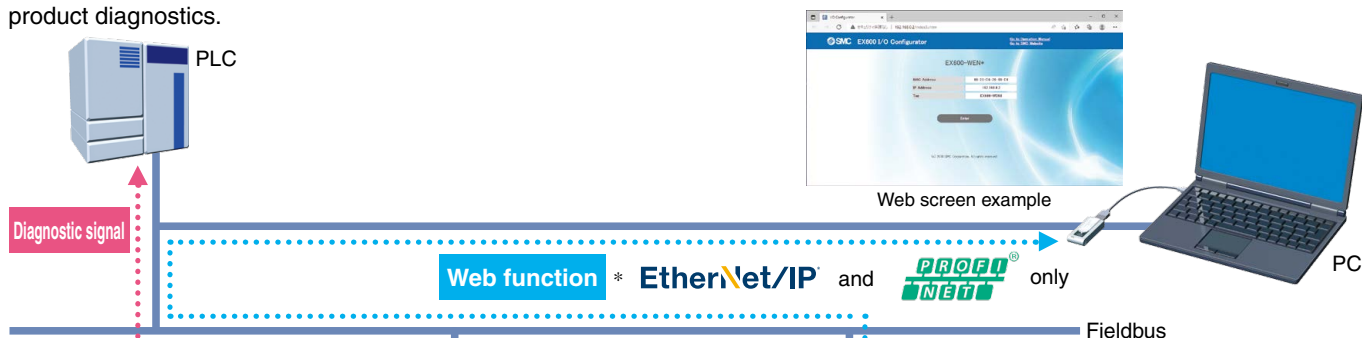Compact **EXW1** | Modular **EX600-W**

To start of communication: Min. **250 ms**

∗ Depends on the communication environment

SMC

2

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.

PLC

Diagnostic signal

Web screen example

PC

Diagnostic signal

Web function ＊ EtherNet/IP and PROFI NET® only

Fieldbus

Wireless base

Compact Type **EXW1**

Modular Type **EX600-W**

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.

Wireless remote

Compact Type **EXW1**

Modular Type **EX600-W**

Solenoid valve

NFC reader/writer

PC + Setting software

Setting software (IO Configurator)

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.	

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.
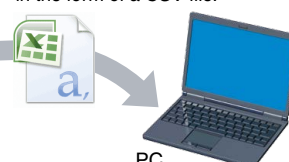＊ Refer to the logging function on page 4.

EX600-W only
EtherNet/IP
PROFI NET®

Web screen example

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

PC

SMC

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.

NFC reader/
writer

PC + Setting software

Setting software

Download the setting software from the "configuration file."

Instruction Manuals

Fieldbus System Serial Transmission System

Configuration File
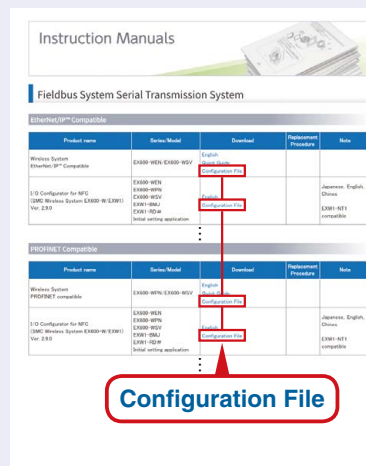
From the SMC website

Documents/Download
⬇
Operation Manuals
⬇
**Fieldbus System
Serial Transmission System**
⬇
CC-Link Compatible
or
EtherCAT Compatible
or
EtherNet/IP™ Compatible
⬇
PROFINET Compatible
⬇
I/O Configurator for NFC
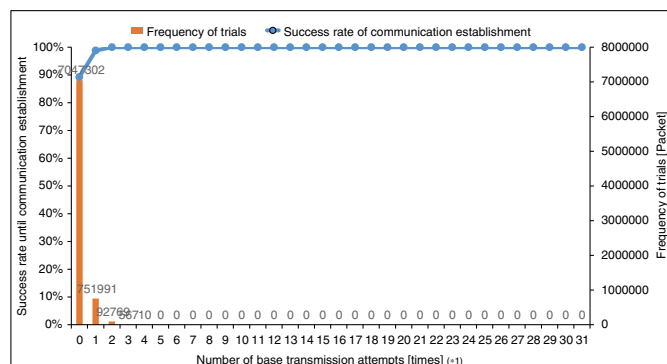⬇
Configuration File

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

∗1 Characteristics of base-to-remote transmission packets

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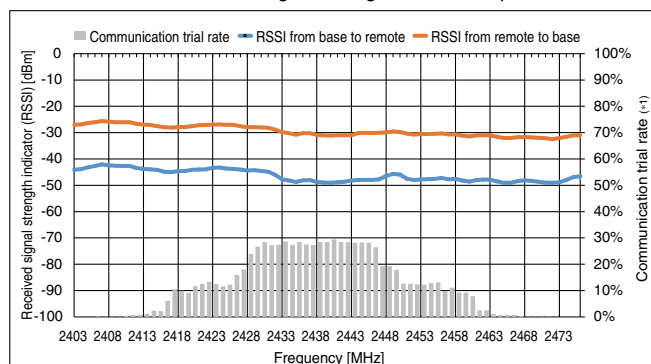
Graph 2. Received signal strength indicator and communication trial rate characteristics with respect to frequency

∗1 Characteristics of base-to-remote transmission packets

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 |

| ALL | | CLEAR | | Export | | Refresh |

Power on
R/W detected

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

Scroll bar

SMC

4

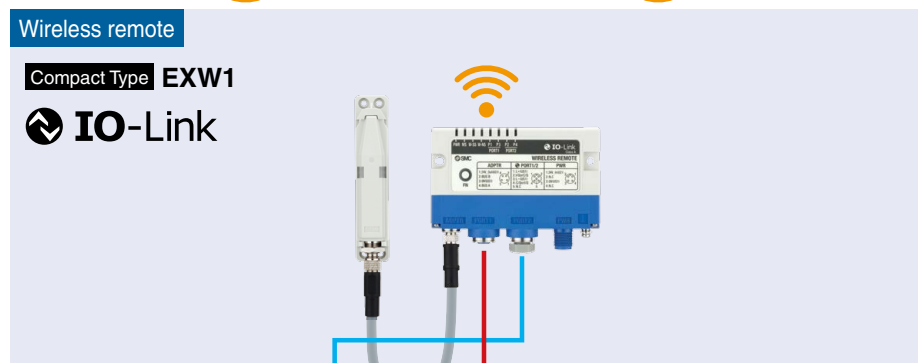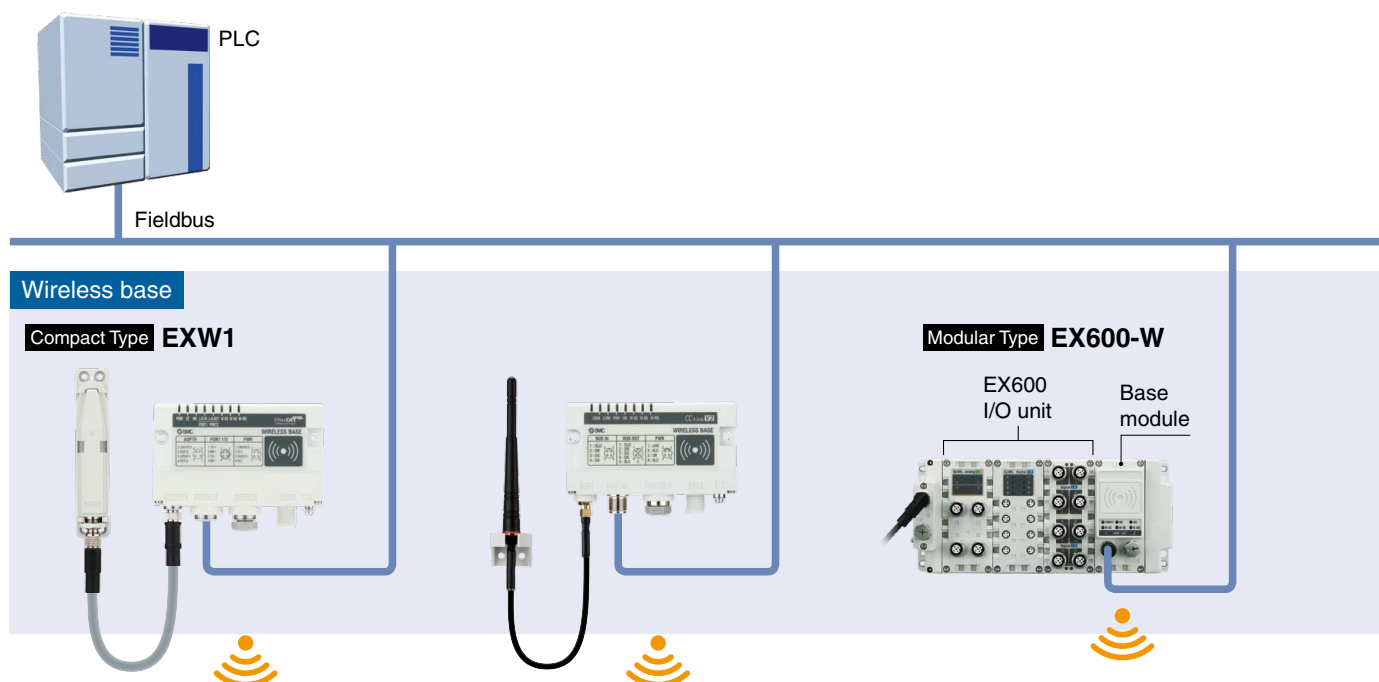# The compact EXW1 and the modular EX600-W can be mixed.[*1]

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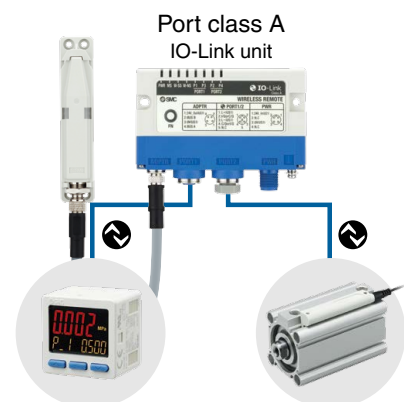
System Examples

PLC

Fieldbus

EtherCAT

CC-Link

EtherNet/IP

PROFINET

Wireless base

Compact Type **EXW1**

Modular Type **EX600-W**

EX600 I/O unit

Base module

Wireless remote

Air Management System
AMS□-SA

Compact Type **EXW1**

Modular Type **EX600-W**

Mixed input and output loading

Input

Output

EX600 I/O unit

Remote module

Solenoid valve

Input/Output device

Vacuum unit

Output devices

Valve manifold (Plug lead)

Solenoid valve

Others
Indicator light
Relay
Buzzer

Input devices

Auto switch

Pressure switch

Flow switch

Others
Proximity sensor
Photoelectric switch
Limit switch

SMC

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

System Examples

PLC

Fieldbus

Wireless base

Compact Type **EXW1**

Modular Type **EX600-W**

EX600
I/O unit

Base
module

Wireless remote

Compact Type **EXW1**

⊘ **IO**-Link

■ **Supports both port class A and port class B**

Port class A
IO-Link unit

For connecting IO-Link sensors

Pressure sensors, flow sensors, actuator position sensors, electro-pneumatic regulators, etc.

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

Port class B
IO-Link unit
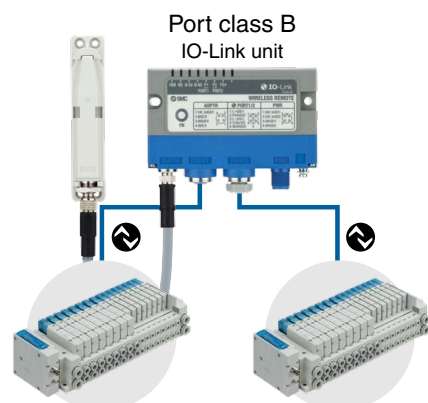
For connecting IO-Link compatible SI units (for valve driving)

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)
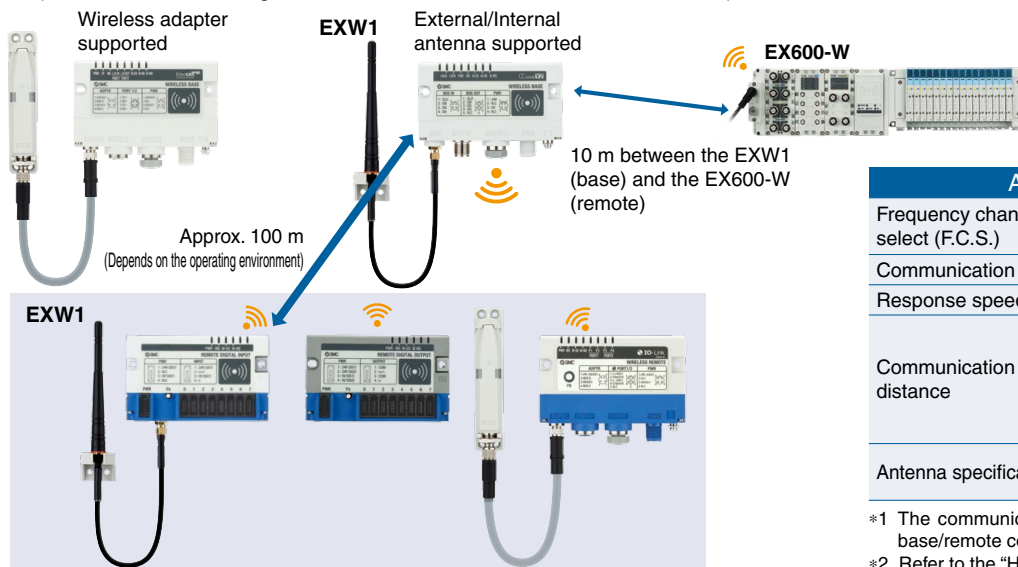

Wireless adapter supported

EXW1

External/Internal antenna supported

AMS□-SA

Approx. 100 m
(Depends on the operating environment)

EXW1
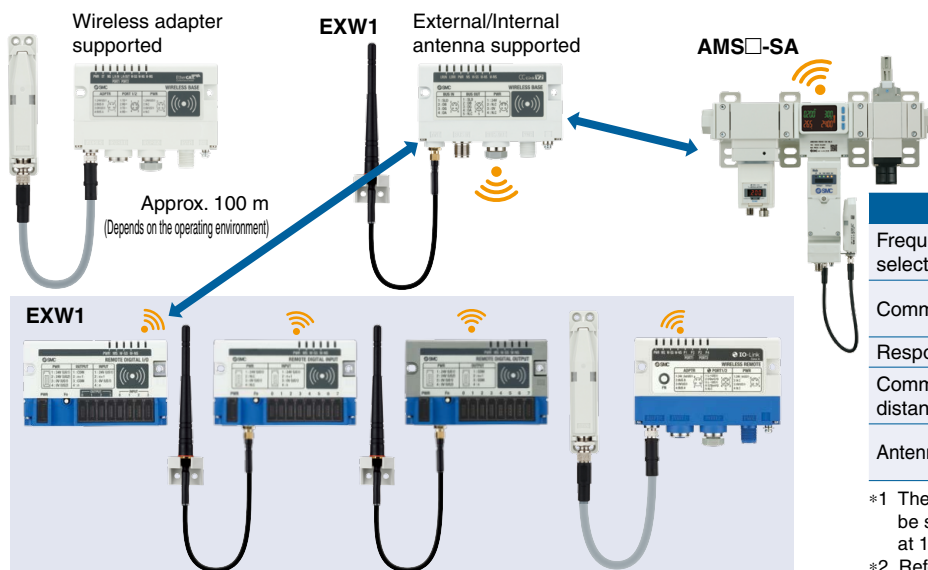
Applicable functions	
Frequency channel select (F.C.S.)	Applicable
Communication speed	Select from 1 Mbps or 250 kbps.*1
Response speed	Select from 2 ms or 5 ms.*1
Communication distance	Approx. 100 m (Depends on the operating environment)
Antenna specification*2	Wireless adapter and External/Internal 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)

Wireless adapter supported

EXW1

External/Internal antenna supported

EX600-W

10 m between the EXW1 (base) and the EX600-W (remote)

Approx. 100 m
(Depends on the operating environment)

EXW1

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
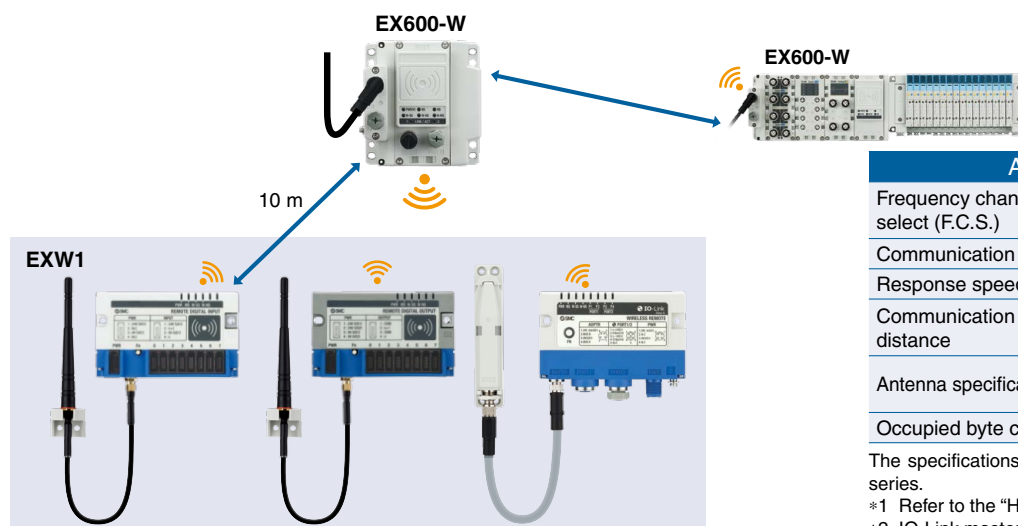
EX600-W

EX600-W

10 m

EXW1

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.
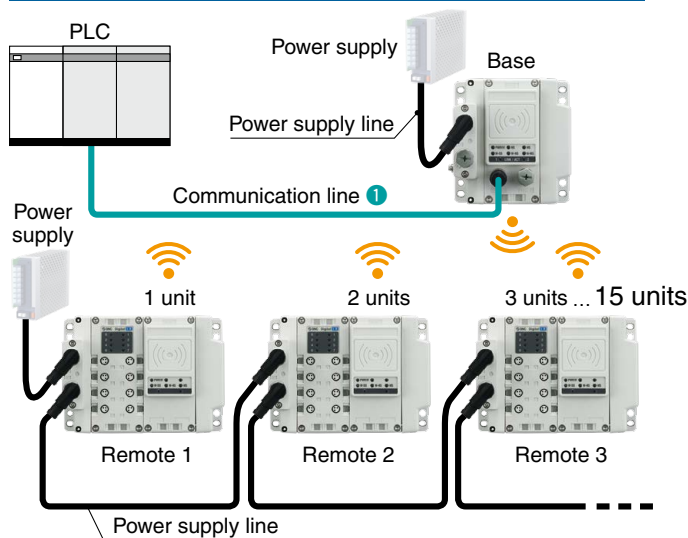∗1 Refer to the "How to Order" section.
∗2 IO-Link master only

SMC

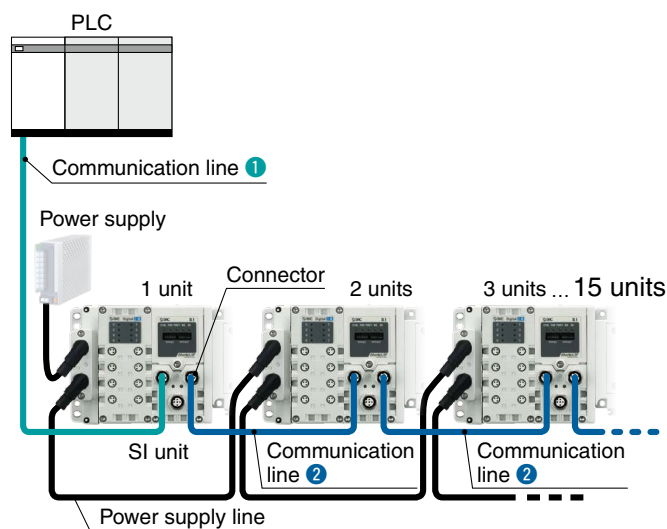# Wiring material cost and installation time can be reduced.*1

| Compact EXW1 | Modular EX600-W |

∗1 For the EX600-W modular type

| Wireless System | Existing (Wired) System |

PLC

Power supply

Base

Power supply line

Communication line ❶

Power supply

1 unit   2 units   3 units ... **15 units**

Remote 1   Remote 2   Remote 3

Power supply line

PLC

Communication line ❶

Power supply

1 unit   Connector   2 units   3 units ... **15 units**

SI unit   Communication line ❷   Communication line ❷

Power supply line

SI unit: Comparison when 15 units are connected	Number of communication devices	Communication line		Communication connectors required
		❶	❷	
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 |

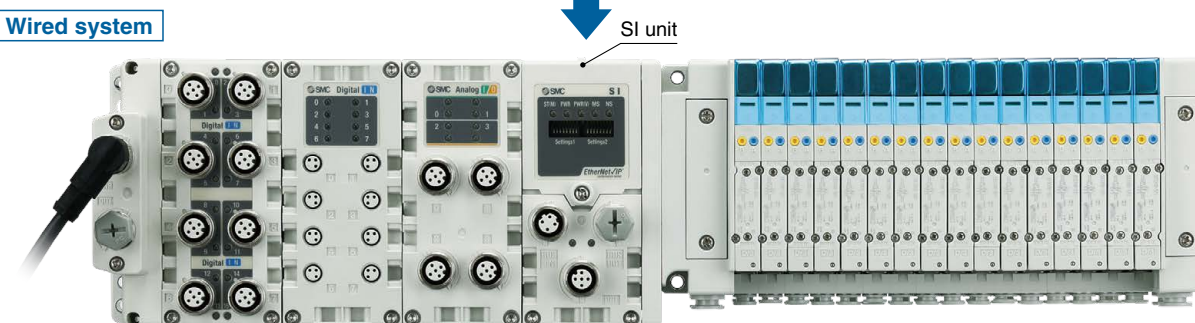Connection interchangeability between EX600 series SI units is maintained.

The replacement of wireless and wired systems is possible.

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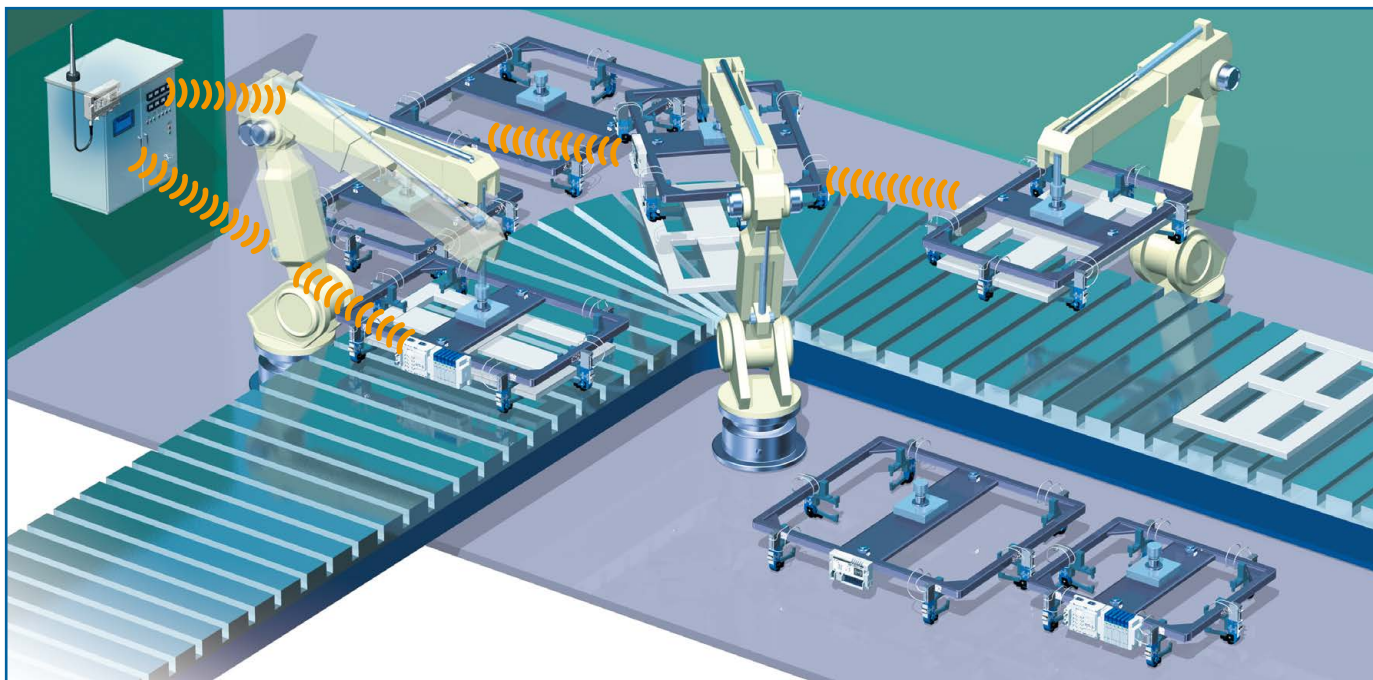
Wireless system

Wireless unit

Wired system

SI unit
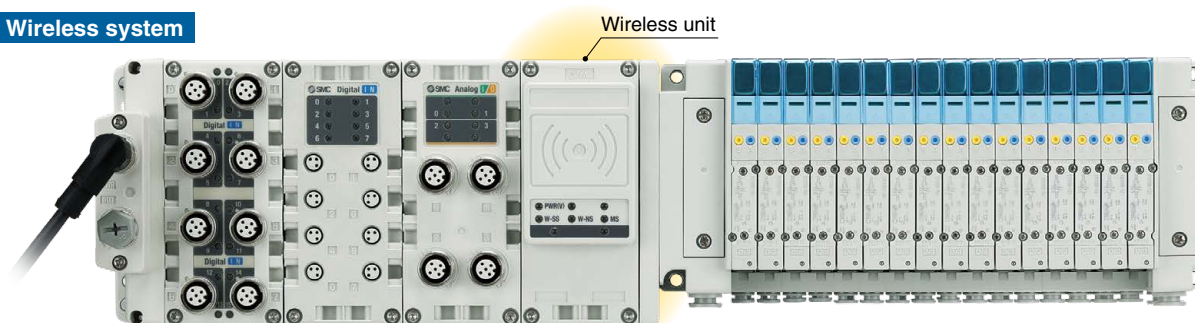
Application Examples

For tool changing

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

For rotary tables

- Minimized disconnection risk
- Smaller diameter communication cable/tubing

Wired system
Communication line   Power supply line

Power supply line only
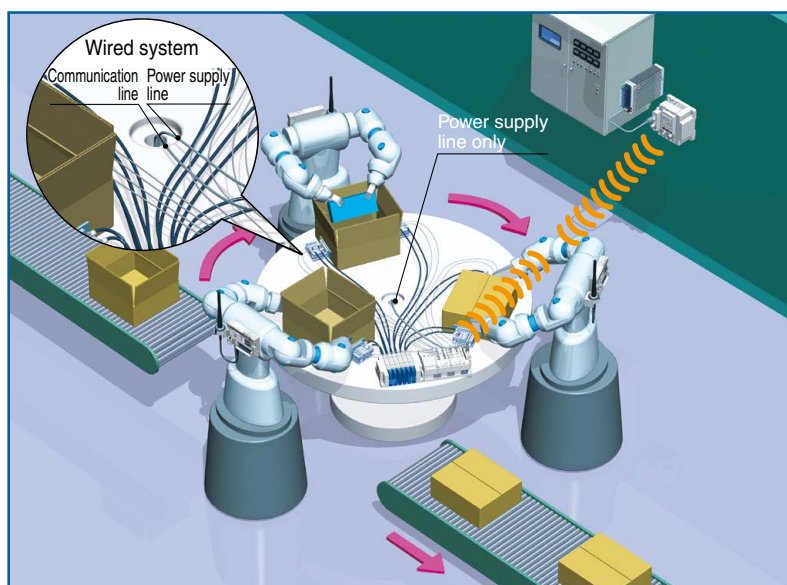
For the blocking of radio waves

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

SMC
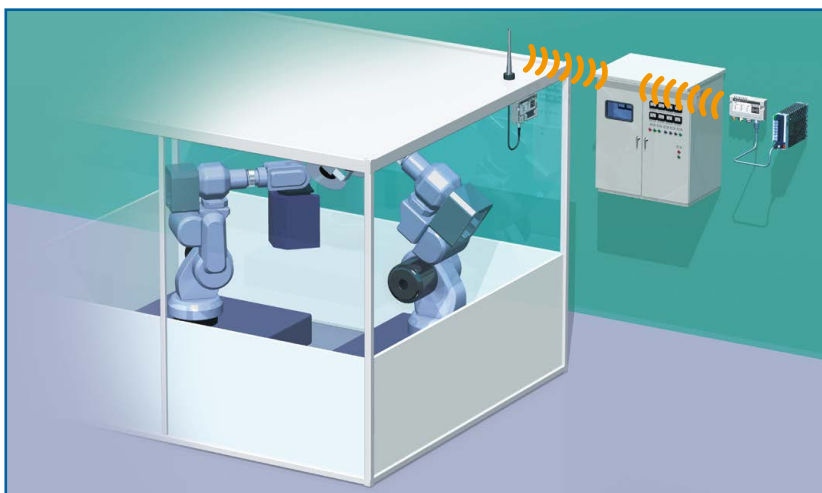
CONTENTS

Wireless System

Compact Type *EXW1 Series*

EtherCAT.

Wireless adapter

Wireless base

Compact wireless remote input

Compact wireless remote output

CC-Link

IO-Link

Wireless base

Compact wireless remote input/output

Compact wireless

Accessories/Made to Order

Wireless adapter

External antenna set

Various connectors/cables

SMC

Modular Type *EX600-W Series*

EtherNet/IP™   PROFINET®

Base module   Remote module

Accessories

End plate bracket   Valve plate

Power supply cable

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

Specific Product Precautions

SMC

12

Wireless System

Compact Type

EXW1 Series

CE UKCA RoHS

How to Order

Compact Wireless Base (EtherCAT)

EtherCAT.

EXW1–B EC A C

- Compact wireless
- Base
- Communication protocol

Symbol	Protocol
EC	EtherCAT

- Connector

Symbol	Connector interface
A	M12

- Antenna specification for wireless communication[*1]

Symbol	Antenna specification
C	Wireless adapter

Components

Wireless base
+
Wireless adapter

*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
- Applicable model

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

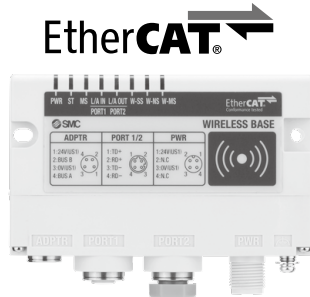* A dedicated cable is required to connect the wireless base and wireless adapter.
When using this product, order the wireless adapter cable separately.
An installation plate (EXW1-AB4) is included as an accessory.

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.

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.

SMC

How to Order

Compact Wireless Base (CC-Link)

CC-Link

EXW1 − B MJ A B E

Compact wireless

Base

Communication protocol

Symbol	Protocol
MJ	CC-Link

Connector

Symbol	Connector interface
A	M12

External antenna set

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

Input/Output

Input

Output

External antenna set
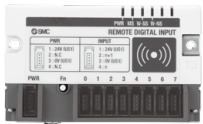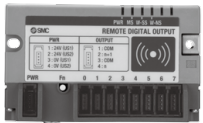
EXW1 − R D M P E3 B E

Compact wireless

Remote

Type

Symbol	Description
D	Digital

Type

Symbol	Description
X	Input
Y	Output
M	Input/Output

Polarity

Symbol	Description
P[1]	PNP
N[2]	NPN

∗1 Can be selected with type "M"
∗2 Available for all types

Frequency channel selection

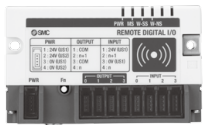| Symbol	Number of selectable frequency channels	Applicable countries
E	Min. 5/Max. 79 channels	Radio Law certified countries other than the U.S., Canada, South Korea, Brazil, Taiwan, Argentina, and Mexico
N	Min. 15/Max. 79 channels	Radio Law certified countries including the U.S., Canada, South Korea,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

∗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.

SMC

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

Specific Product Precautions

How to Order

Compact Wireless Remote (IO-Link)

◆ **IO**-Link

EXW1−RLAPA8C

Wireless remote

Antenna specification for wireless communication

Symbol	Connector interface
C	Wireless adapter

Type

Symbol	Description
L	IO-Link master

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"

Type

Symbol	Description
A	Class A
B	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		

⊘SMC

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 $5 \leq f < 8.4$ 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	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: https://www.smcworld.com
*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 $5 \leq f < 8.4$ 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

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: https://www.smcworld.com

Electrical Specifications

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

General Specifications

Item	Specifications
Enclosure	IP67
Vibration resistance	EN 61131-2 compliant $5 \le f < 8.4$ Hz 3.5 mm $8.4 \le f < 150$ 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)

SMC

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 $5 \leq f < 8.4$ 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
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

SMC

18

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 ±10%		
US2 power supply voltage range (for driving)	—		24 VDC ±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			
Pin no.	2	4	4
Input type	PNP		
Protection	Short-circuit protection		
Rated input current	Typ. 2.5 mA	Typ. 5.8 mA	Typ. 5.8 mA
ON voltage	13 V or more		
OFF voltage	8 V or less		
Output			
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°C Storage/Shipping: −20°C to +60°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

SMC

Dimensions/Parts Description

Compact Wireless Base

EXW1-BECAC

Installation plate
∗ Included with the wireless adapter (EXW1-A11□)

2 x M4 mounting hole

100
90.8 ±0.1
5
6.4
45
2 x (R)
54
4.5
20
ø4.5
ø4.5

20.3
15.3

Connector for wireless adapter

Wireless adapter
(Should be ordered separately.)

Wireless adapter cable
(Should be ordered separately.)

ADPTR PORT1 PORT2 PWR

FE terminal

Power supply connector

Communication connector PORT2
∗ Seal cap (At the time of shipment)

Communication connector PORT1

③ ② ①

① Power supply connector

No.	Signal	M12, 4-pin, plug A-coded
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+	
2	RD+	
3	TD−	
4	RD−	

③ Connector for wireless adapter

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

∗ 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*
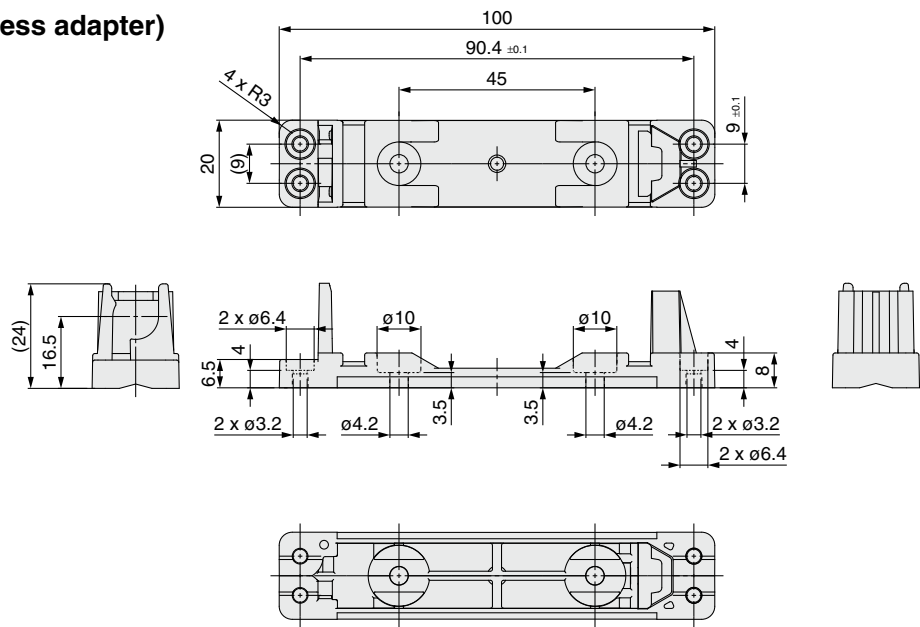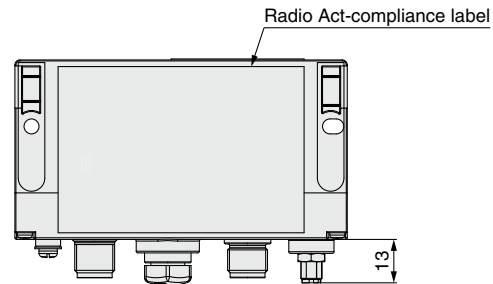
Dimensions/Parts Description

Wireless Adapter

EXW1-A11□

12.5　8.8　1.2　77.3　19.4　ø10.5

M8 x 1
M10 x 0.75

Indicator light

①

8.5

Model label

EXW1-A11N

Connector

18.5

Radio Act-compliance label
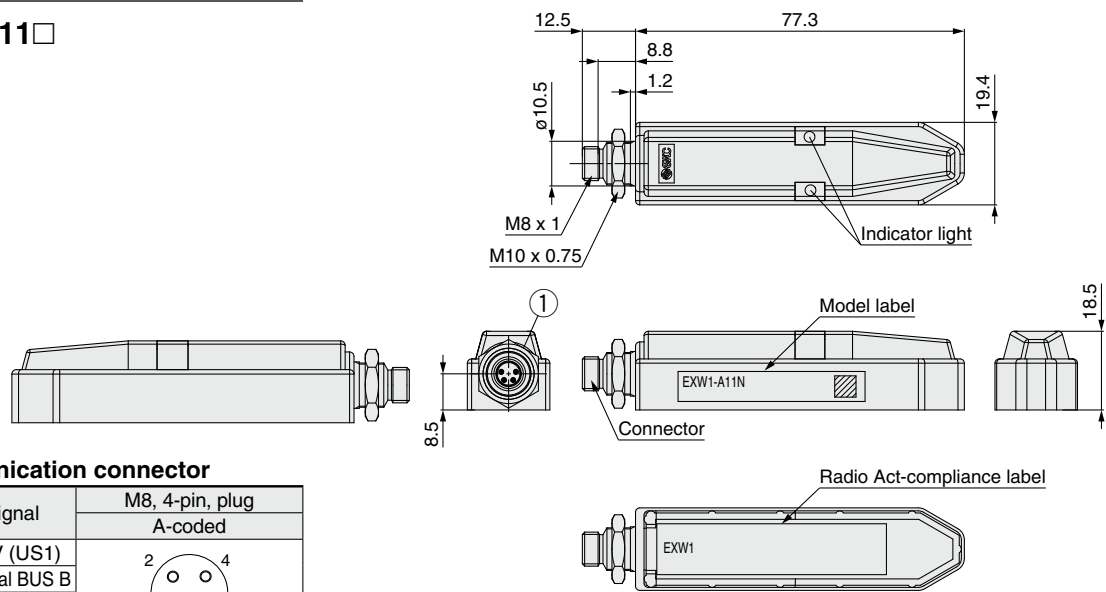
EXW1

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□
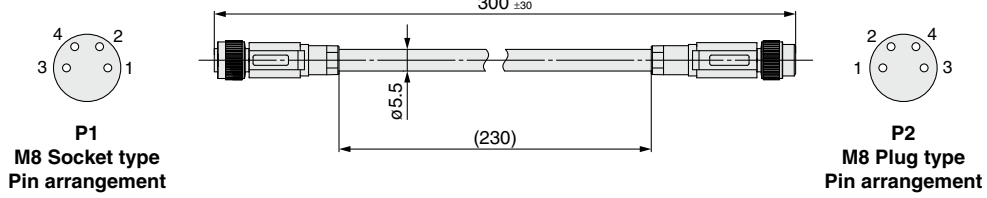
100
90.4 ±0.1
45
9 ±0.1

4 x R3

20
(9)

(24)
16.5

2 x ø6.4　ø10　ø10　4
6.5
4
8
2 x ø3.2　ø4.2　3.5　3.5　ø4.2　2 x ø3.2
2 x ø6.4

21

SMC

Dimensions/Parts Description

Wireless Adapter Cable

EXW1-AC1-X1

300 ±30

(230)

ø5.5

P1
M8 Socket type
Pin arrangement

4 2
3   1

P2
M8 Plug type
Pin arrangement

2 4
1   3

EXW1-AC001-SAPU

Mounting diagram

108.5 ±0.5

32.25 ±0.5   ø6.6   (25.4)   (1)   29.25 ±0.5

35 ±0.5   25.6 ±0.2   25 ±0.2

32 ±0.5   72 +0.2/0   6.4 ±0.2

P1
M8 Plug type
Pin arrangement

3   1
4   2

1
2   4
3

P2
M8 Socket type
Pin arrangement

EXW1-AC030-SSPS

2950

(150)   (25.4)

(ø6.6)

(2880)

P1
M8 Socket type
Pin arrangement

4 2
3   1

P2
M8 Plug type
Pin arrangement

2 4
1   3

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

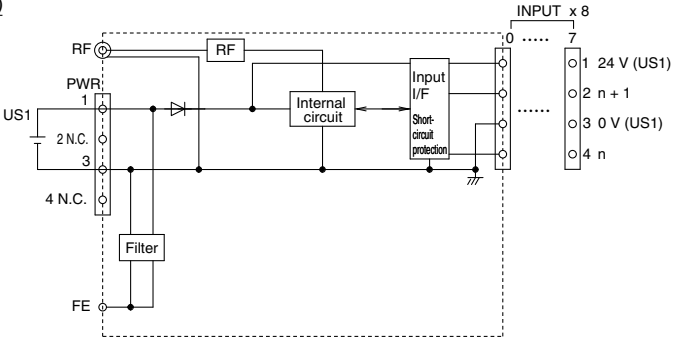**Country-specific Radio Law Compliance Table**

Specific Product Precautions

EXW1 Series

Dimensions/Parts Description

Compact Wireless Base

EXW1-BMJA□

Model label

EXW1-BMJAB□

Internal antenna **External antenna** **External antenna set**

Radio Act-compliance label
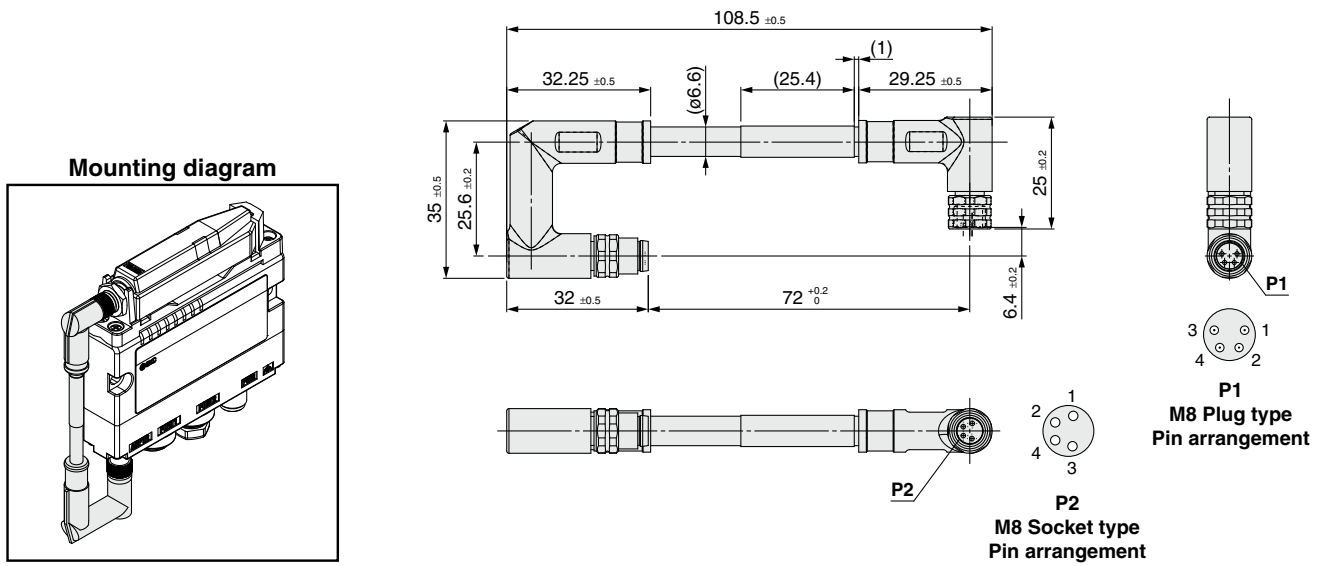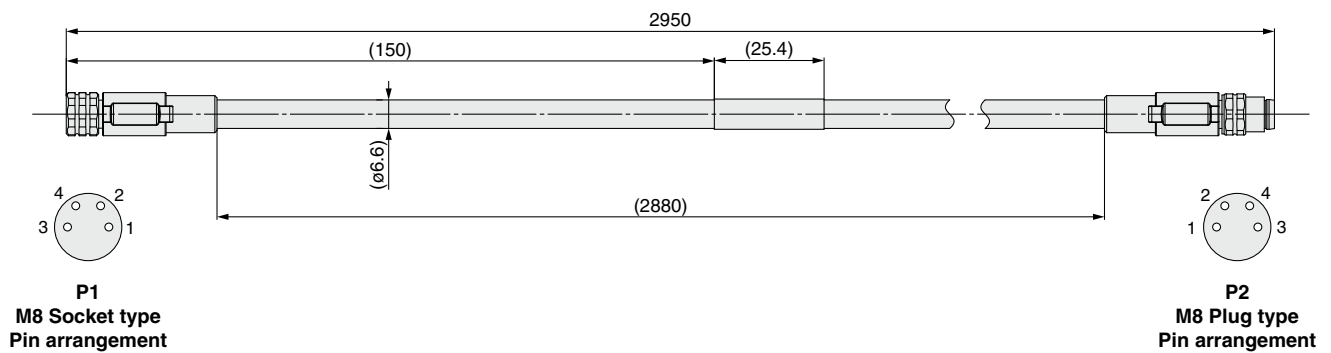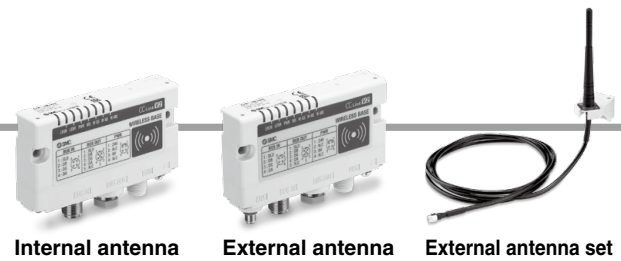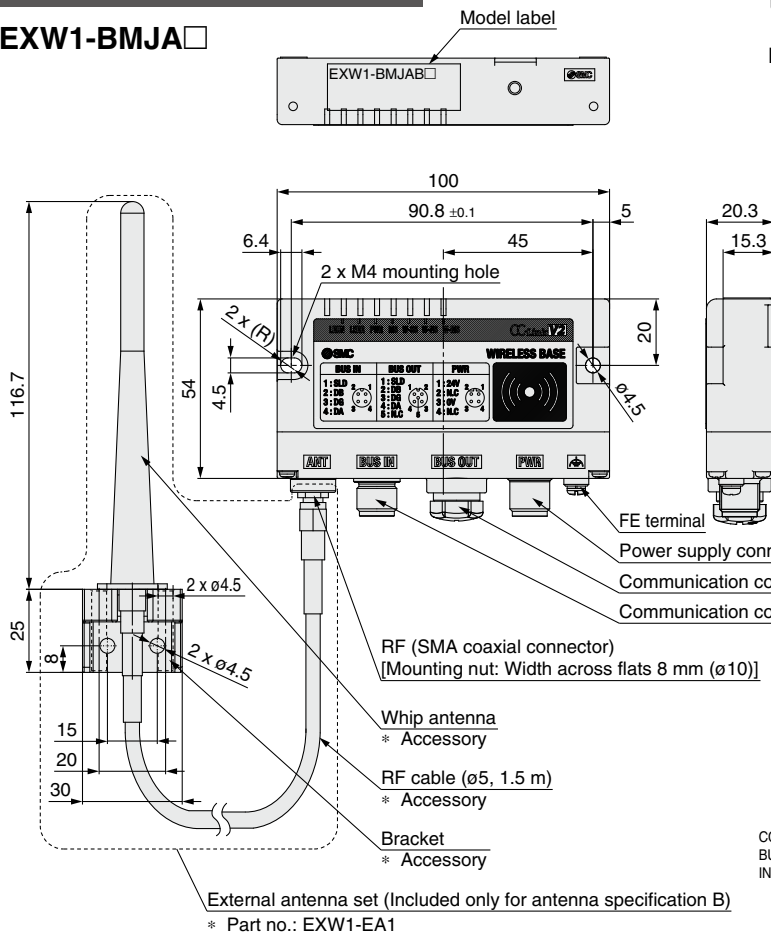
* The seal cap is attached when shipped.

100
90.8 ±0.1
5
6.4
45
20.3
15.3
2 x M4 mounting hole
2 x (R)
54
4.5
20
ø4.5
116.7
WIRELESS BASE
ANT BUS IN BUS OUT PWR
13

25
8
2 x ø4.5
2 x ø4.5
15
20
30

FE terminal
Power supply connector
Communication connector BUS OUT
Communication connector BUS IN

RF (SMA coaxial connector)
[Mounting nut: Width across flats 8 mm (ø10)]

Whip antenna
* Accessory

RF cable (ø5, 1.5 m)
* Accessory

Bracket
* Accessory

External antenna set (Included only for antenna specification B)
* Part no.: EXW1-EA1

Internal circuit

② BUS IN
① Power supply connector

SLD 1
DB 2
DG 3
DA 4

Internal circuit

1 24 V (US1)
2 NC
3 0 V (US1)
4 NC

CC-Link
BUS connector
IN/OUT

SLD 1
DB 2
DG 3
DA 4
NC 5

RF

Filter

RF
FE

③ BUS OUT

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

② ③ ①

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.	

② ③ 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.	

SMC

Dimensions/Parts Description

Compact Wireless Remote Input/Output

EXW1-RDM□□□□

Model label

EXW1-RDMPE3BE

Internal antenna   External antenna   External antenna set

100
90.8 ±0.1
6.4
2 x M4 mounting hole
4.5
116.7

LED indicator
Indicator label
FE terminal

26.7
20.3
15.3

Radio Act-compliance label

20
ø4.5
59.8

PWR   OUTPUT   INPUT
1:24V (US1)   1:COM   1:24V (US1)
2:24V (US2)   2:n+1   2:n+1
3:0V (US1)   3:COM   3:0V (US1)
4:0V (US2)   4:n   4:n

SMC   REMOTE DIGITAL I/O

PWR   Fn   INPUT

25
8
2 x ø4.5
2 x ø4.5
15
20
30

INPUT (Connector for input device connection)
OUTPUT (Connector for output device connection)
Fn (Push button for pairing)
RF (SMA coaxial connector)
[Mounting nut: Width across flats 8 mm (ø10)]
PWR (Power supply connector)
Whip antenna
∗ Accessory
RF cable (ø5, 1.5 m)
∗ Accessory
Bracket
∗ Accessory

External antenna set (Included only for antenna specification B)
∗ Part no.: EXW1-EA1

Internal circuit

INPUT x 4
0 3
RF
RF
PWR
Input I/F
Short-circuit protection
1 24 V (US1)
2 n + 1
3 0 V (US1)
4 n
US1
1
2
3
US2
4
Internal circuit

OUTPUT x 4
0 3
1 COM (PNP: 0 V, NPN: 24 V)
2 n + 1
3 COM (PNP: 0 V, NPN: 24 V)
4 n
Filter
FE
Output I/F
Short-circuit protection

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

PWR (Power supply connector)

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

INPUT (Connector for input device connection)

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

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

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

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

	Pin no.	Description
①	**1**	+COM (US2_24 V)
②	**2**	n + 1
③	**3**	+COM (US2_24 V)
④	**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
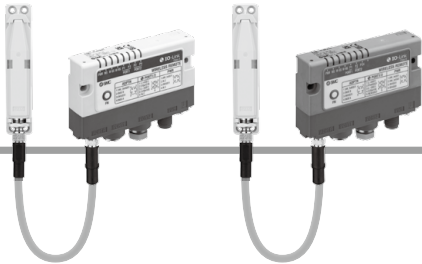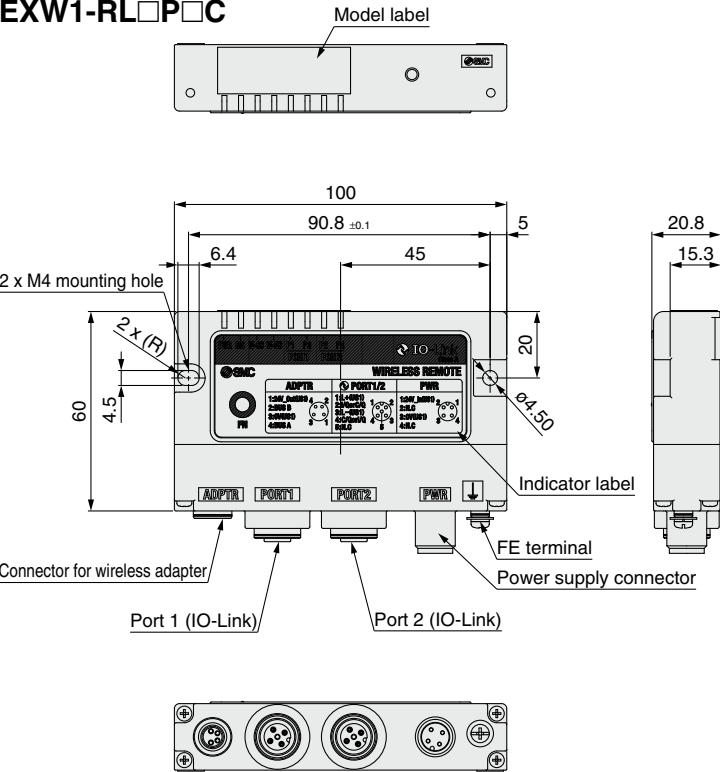
SMC

Dimensions/Parts Description

Compact Wireless Remote Input

EXW1-RDX□□□□

Model label

EXW1-RDXNE4BE

Internal antenna

External antenna

External antenna set

100

90.8 ±0.1

6.4

2 x M4 mounting hole

4.5

116.7

25

8

15

20

30

2 x ø4.5

2 x ø4.5

LED indicator

Indicator label

FE terminal

REMOTE DIGITAL INPUT

PWR
1 : 24V (US1)
2 : N.C.
3 : 0V (US1)
4 : N.C.

INPUT
1 : 24V (US1)
2 : n+1
3 : 0V (US1)
4 : n

PWR Fn 0 1 2 3 4 5 6 7

20

ø4.5

59.8

26.7

20.3

15.3

Radio Act-compliance label

INPUT (Connector for input device connection)

Fn (Push button for pairing)

RF (SMA coaxial connector)
[Mounting nut: Width across flats 8 mm (ø10)]

PWR (Power supply connector)

Whip antenna
∗ Accessory

RF cable (ø5, 1.5 m)
∗ Accessory

Bracket
∗ Accessory

External antenna set
(Included only for antenna specification B)
∗ Part no.: EXW1-EA1

Internal circuit

INPUT x 8

RF

PWR
1

US1

2 N.C.

3

4 N.C.

RF

Filter

Internal
circuit

Input
I/F

Short-
circuit
protection

FE

0 ····· 7

1 24 V (US1)
2 n + 1
3 0 V (US1)
4 n

∗ 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

SMC

Dimensions/Parts Description

Compact Wireless Remote Output

EXW1-RDY□□□□

Model label
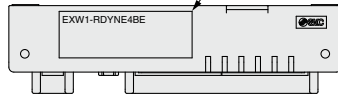
EXW1-RDYNE4BE

Internal antenna   **External antenna**   **External antenna set**

100

90.8 ±0.1

6.4

2 x M4 mounting hole

4.5

116.7

25

8

2 x ø4.5

2 x ø4.5

15

20

30

26.7

20.3

15.3

20

59.8

ø4.5

SMC   REMOTE DIGITAL OUTPUT
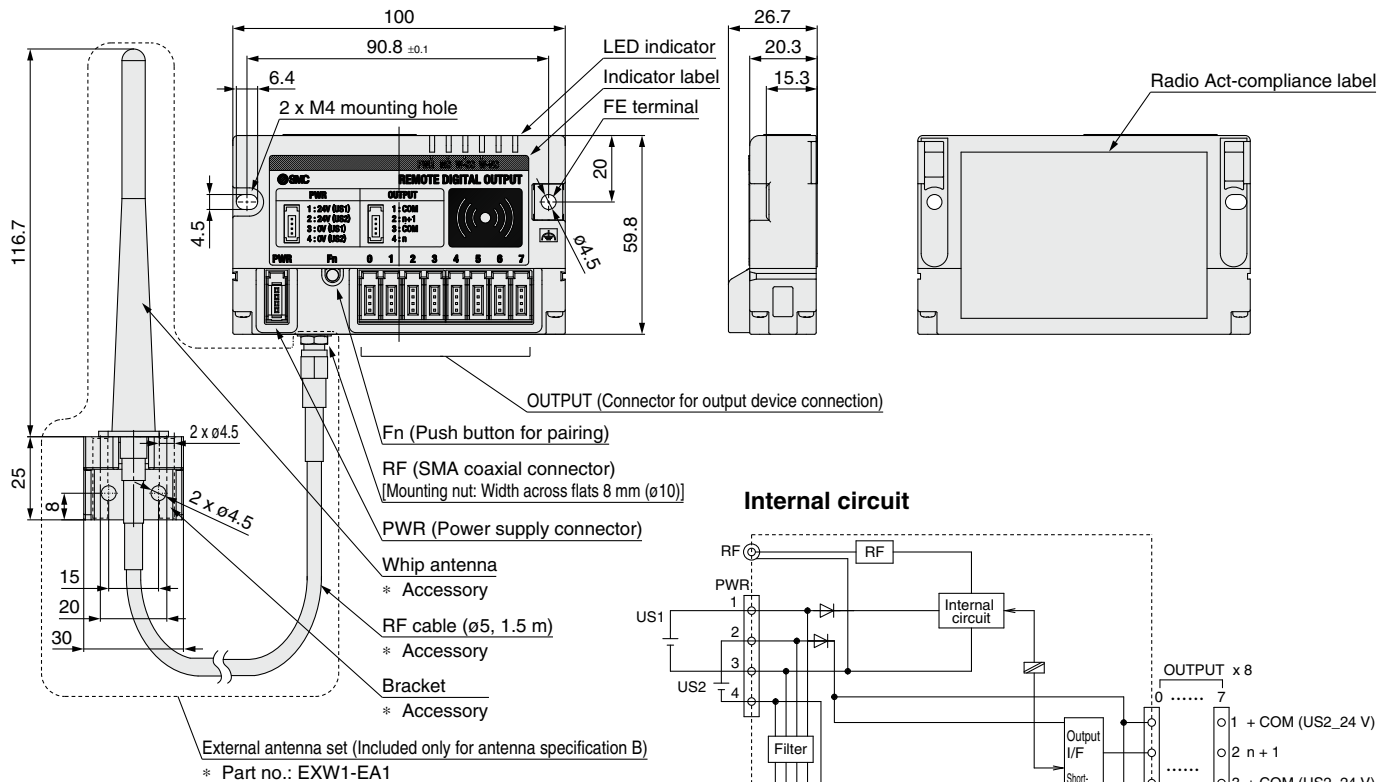
PWR
1 : 24V (US1)
2 : 24V (US2)
3 : 0V (US1)
4 : 0V (US2)

OUTPUT
1 : COM
2 : n+1
3 : COM
4 : n

PWR   Fn   0 1 2 3 4 5 6 7

LED indicator
Indicator label
FE terminal

Radio Act-compliance label

OUTPUT (Connector for output device connection)

Fn (Push button for pairing)

RF (SMA coaxial connector)
[Mounting nut: Width across flats 8 mm (ø10)]

PWR (Power supply connector)

Whip antenna
∗ Accessory

RF cable (ø5, 1.5 m)
∗ Accessory

Bracket
∗ Accessory

External antenna set (Included only for antenna specification B)
∗ Part no.: EXW1-EA1

Internal circuit

RF

PWR
US1   1
2
3
US2   4

Filter

FE

RF

Internal circuit

OUTPUT x 8
0 7

1 + COM (US2_24 V)
2 n + 1
3 + COM (US2_24 V)
4 n
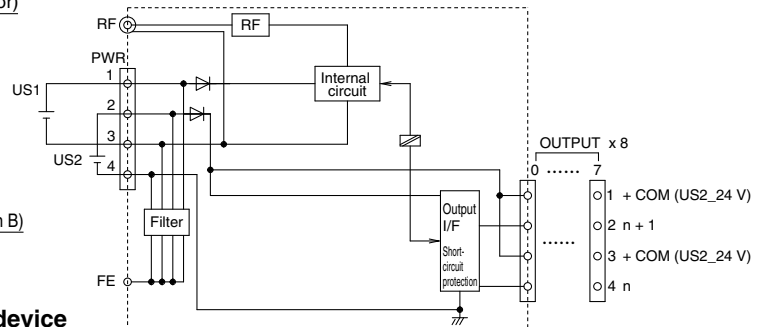
Output
I/F

Short-
circuit
protection

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

PWR
(Power supply connector)

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

OUTPUT
(Connector for output device connection)

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

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

Specific Product Precautions

SMC

26

EXW1 Series

Dimensions/Parts Description

Compact Wireless Remote (IO-Link Master)

EXW1-RL□P□C

Model label

2 x M4 mounting hole

2 x (R)

Connector for wireless adapter

Port 1 (IO-Link)

Port 2 (IO-Link)

Indicator label

FE terminal

Power supply connector

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

Cap
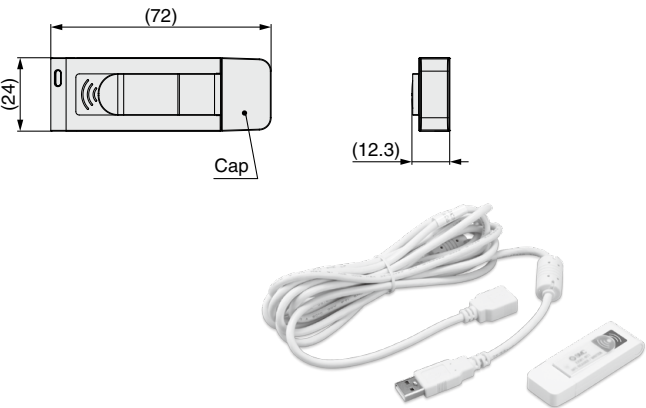
Fixing Bracket

EXW1-AB2 (Option, For EXW1)

SMC

EXW1 Series
Accessories
Made to Order
EX600-W Series
Accessories
Technical Data
Country-specific Radio Law Compliance Table
Specific Product Precautions

EXW1 Series
Accessories (Optional Parts)

Compact Wireless Base

EtherCAT⇄

❻ Installation Plate

❺ Wireless Adapter

❹ Wireless Adapter Cable

❷ Communication Cable
❸ Field-wireable Communication Connector

❶ Power Supply Cable

❾ Seal Cap (M12)

Compact Wireless Base

CC-Link

❼ External Antenna Set

❷ Communication Cable
❸ Field-wireable Communication Connector

❶ Power Supply Cable

❾ Seal Cap (M12)

Compact Wireless Remote

❼ External Antenna Set

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

Compact Wireless Remote

⟳ IO-Link

❻ Installation Plate

❺ Wireless Adapter

❹ Wireless Adapter Cable

❶ Power Supply Cable
❷ Communication Cable

❶ 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

Socket connector pin arrangement
A-coded (Normal key)

ø14.9 ø6 M12
27 40.7 L 30 5 50
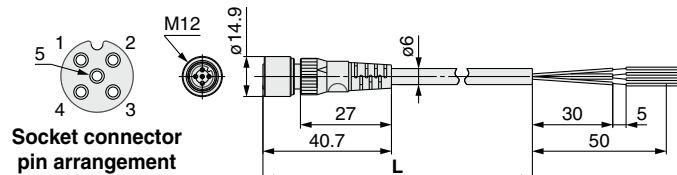
Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including insulator)	1.5 mm
Min. bending radius (Fixed)	40 mm

Angled connector type
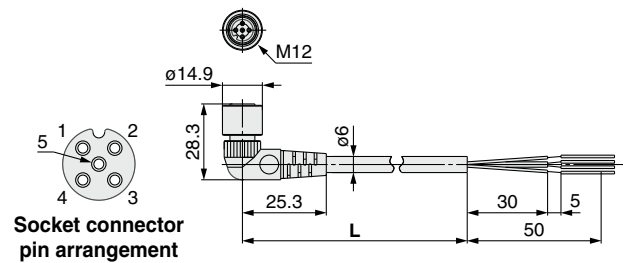
Socket connector pin arrangement
A-coded (Normal key)

ø14.9 M12 28.3 ø6
25.3 L 30 5 50

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

Connections

Terminal no. — Core wire color

1 — Brown: 24 VDC +10%/–5% (Valve power supply)
2 — White: 0 V (Valve power supply)
3 — Blue: 24 VDC ±10% (Power supply for control)
4 — Black: 0 V (Power supply for control)
5 — Gray: Not connected

SMC

28
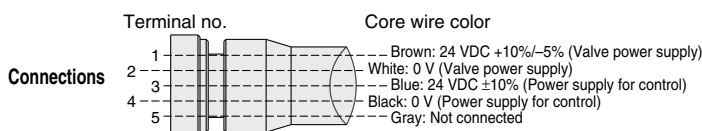
EXW1 *Series*

❶ **Power Supply Cable**

For EtherCAT

PCA- 1401804

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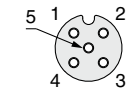
1401804	1500 mm
1401805	3000 mm
1401806	5000 mm

**Socket connector
pin arrangement
A-coded
(Normal key)**

M12
SPEEDCON

ø14.8 · 44.5 · L · 50 · 22.5 · ø5

Marker tag · Marker tag

Item	Specifications
Cable O.D.	ø5 mm
Conductor nominal cross section	0.34 mm²/AWG22
Wire O.D. (Including insulator)	1.27 mm
Min. bending radius (Fixed)	21.7 mm

Connections

Terminal no. · Core wire color

1 — Brown: 24 VDC +10%/−5% (Valve power supply)
2 — White: 0 V (Valve power supply)
3 — Blue: 24 VDC ±10% (Power supply for control)
4 — Black: 0 V (Power supply for control)
5 — Green/Yellow: Not connected
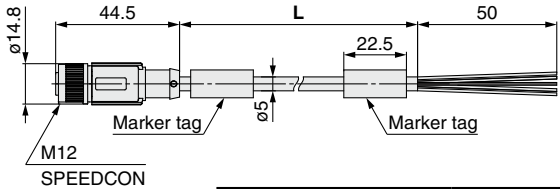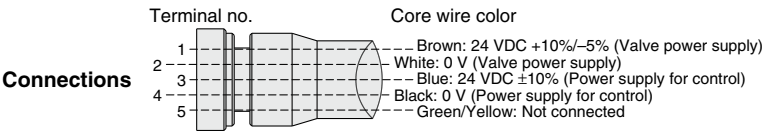
For CC-Link

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)**

M12

40.7 · L · ø6.6 · 30 · 5 · 50
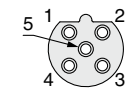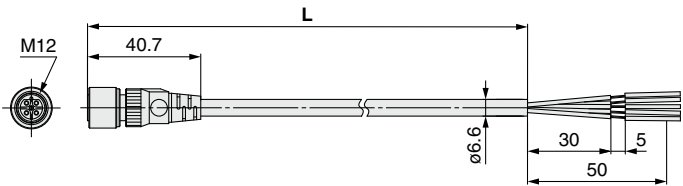
Item	Specifications
Cable O.D.	ø6.6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including insulator)	1.65 mm
Min. bending radius (Fixed)	40 mm

Connections

Terminal no. · Core wire color

1 — Brown: 24 VDC +10%/−5% (Valve power supply)
2 — White: 0 V (Valve power supply)
3 — Blue: 24 VDC ±10% (Power supply for control)
4 — Black: 0 V (Power supply for control)
5 — Gray: Not connected
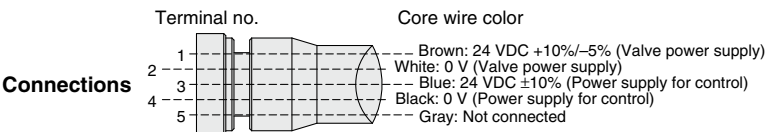
PCA- 1401807

● **Cable length (L)**

1401807	1500 mm
1401808	3000 mm
1401809	5000 mm
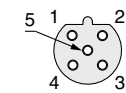
**Socket connector
pin arrangement
B-coded
(Reverse key)**
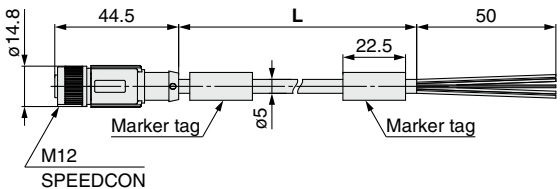
M12
SPEEDCON

ø14.8 · 44.5 · L · 50 · 22.5 · ø5

Marker tag · Marker tag

Item	Specifications
Cable O.D.	ø5 mm
Conductor nominal cross section	0.34 mm²/AWG22
Wire O.D. (Including insulator)	1.27 mm
Min. bending radius (Fixed)	21.7 mm

Connections

Terminal no. · Core wire color

1 — Brown: 24 VDC +10%/−5% (Valve power supply)
2 — White: 0 V (Valve power supply)
3 — Blue: 24 VDC ±10% (Power supply for control)
4 — Black: 0 V (Power supply for control)
5 — Green/Yellow: Not connected

SMC
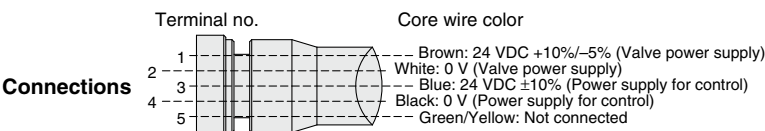
❷ Communication Cable

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

Plug connector pin arrangement
D-coded

M12

⌀6.4

⌀14.8

47.3   L   44

Metal parts   Metal parts   RJ-45

Signal name	Terminal no.		Terminal no.	Core wire color
TD+	1		1	White/Orange
RD+	2		2	Orange
TD−	3		3	White/Green
RD−	4		4	
			5	
			6	Green
			7	
			8	

Metal parts   Shield   Metal parts

Plug connector pin arrangement

Connections (Straight cable)

PCA-1446566 (Plug)

Plug connector pin arrangement
D-coded

⌀14.8

47.3   5000   50

⌀6.5

M12
SPEEDCON

Terminal no.		Core wire color
1		Yellow: TD+
2		White: RD+
3		Orange: TD−
4		Blue: RD−

Connections

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

⌀14.8

47.3   L   47.3   ⌀14.8

⌀6.5

Metal parts   Metal parts
M12   M12
SPEEDCON   SPEEDCON

Plug connector pin arrangement
D-coded

Terminal no.		Terminal no.	Core wire color	Signal name
1		1	Yellow	TD+
2		2	White	RD+
3		3	Orange	TD−
4		4	Blue	RD−

Metal parts   Shield   Metal parts

Plug connector pin arrangement
D-coded

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

36.3   L

30.8

⌀6.5

Metal parts   Metal parts
M12   M12
SPEEDCON   SPEEDCON
⌀15

Plug connector pin arrangement
D-coded

Terminal no.		Terminal no.	Core wire color	Signal name
1		1	Yellow	TD+
2		2	White	RD+
3		3	Orange	TD−
4		4	Blue	RD−

Metal parts   Shield   Metal parts

Plug connector pin arrangement
D-coded

Connections (Straight cable)

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

Specific Product Precautions

SMC

EXW1 Series

❷ 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)
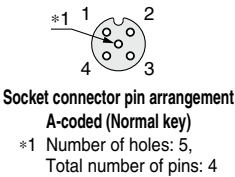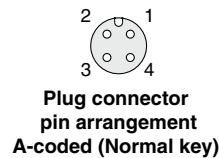
Made to Order

Cable length	10000 mm	Refer to page 35.
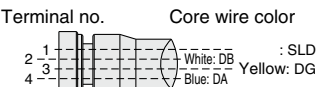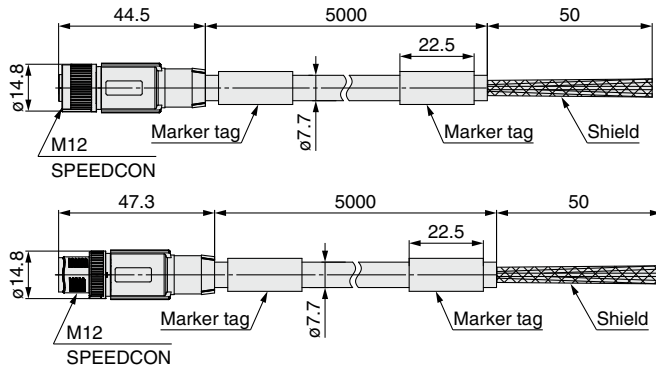
Terminal no.   Core wire color

: SLD
White: DB   Yellow: DG
Blue: DA

Connections

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

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

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

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

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

Metal parts   Shield   Metal parts
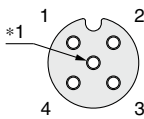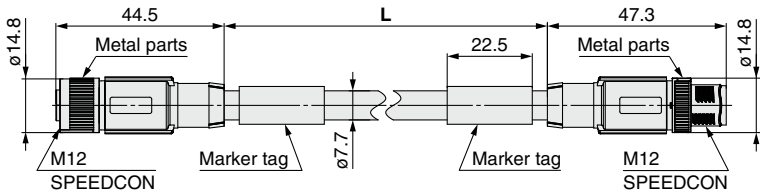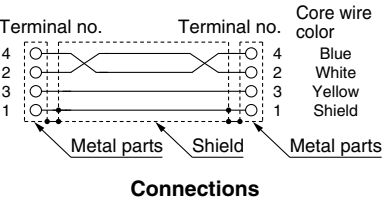
Connections

**Plug connector
pin arrangement
A-coded (Normal key)**

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

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

**Plug connector
pin arrangement
A-coded (Normal key)**

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

Metal parts   Shield   Metal parts

Connections

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

SMC
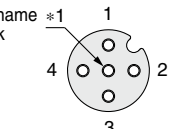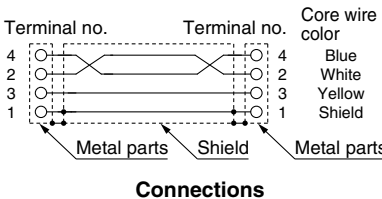
❷ Communication Cable

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

Socket connector pin arrangement
A-coded (Normal key)

Plug connector pin arrangement
A-coded (Normal key)

M12   M12

40.7   L   44.7

ø14.9   ø6   ø14.9

Terminal no.   Core wire color

1 — 1	Brown
2 — 2	White
3 — 3	Blue
4 — 4	Black
5 — 5	Gray

Connections

Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including conductor)	1.5 mm
Min. bending radius (Fixed)	40 mm
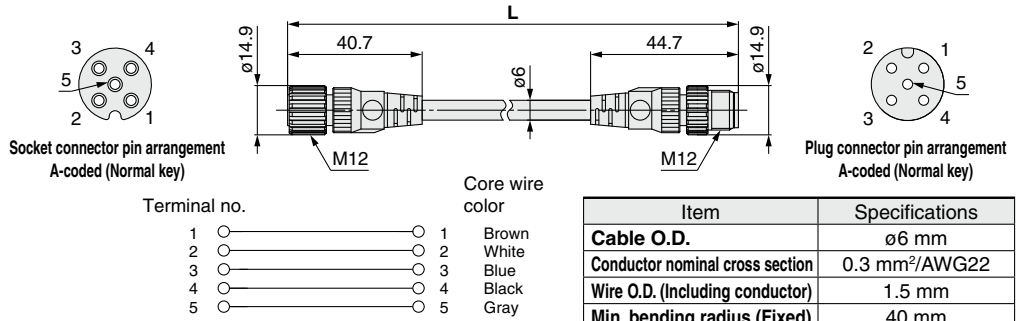
EX9-AC 005 -SAPA (With connector on both sides (Socket/Plug))

● Cable length (L)

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

Socket connector pin arrangement
A-coded (Normal key)

Plug connector pin arrangement
A-coded (Normal key)

ø14.9   M12   M12   ø14.9

28.3   ø6   32.3

25.3   L   25.3

Terminal no.   Core wire color

1 — 1	Brown
2 — 2	White
3 — 3	Blue
4 — 4	Black
5 — 5	Gray

Connections

Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including conductor)	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
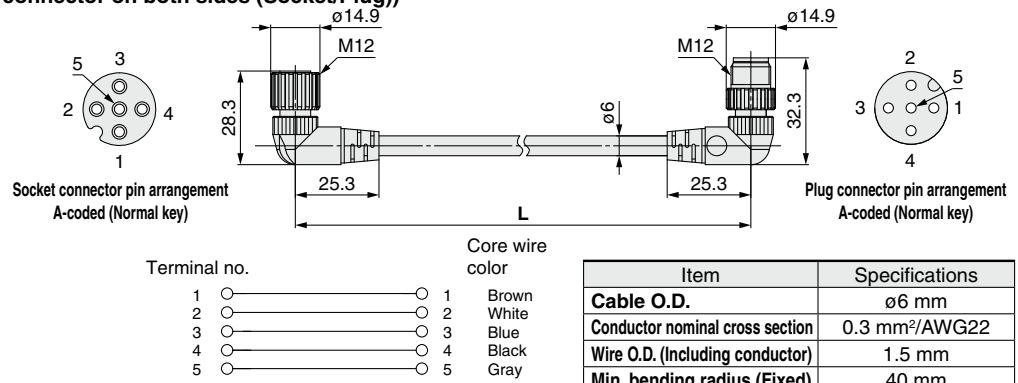
EXW1 Series

❸ Field-wireable Communication Connector

Plug

For EtherCAT

PCA-1446553
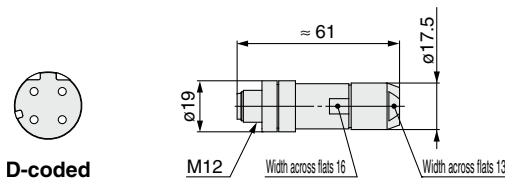
D-coded

M12 Width across flats 16 Width across flats 13

≈ 61 ø17.5 ø19

Applicable Cable

Item	Specifications
Cable O.D.	4.0 to 8.0 mm
Wire gauge (Stranded wire cross section)	0.14 to 0.34 mm²/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
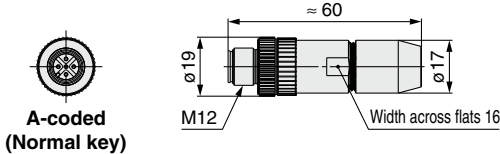
A-coded (Normal key)

M12 Width across flats 16

≈ 60 ø19 ø17

Applicable Cable

Item	Specifications
Cable O.D.	4.0 to 8.0 mm
Wire gauge (Stranded wire cross section)	0.14 to 0.5 mm²/AWG26 to 20

Socket

For CC-Link

PCA-1557620
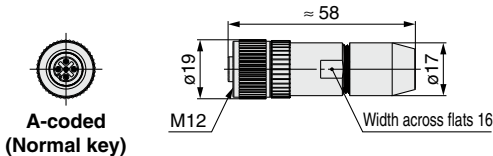
A-coded (Normal key)

M12 Width across flats 16

≈ 58 ø19 ø17

Applicable Cable

Item	Specifications
Cable O.D.	4.0 to 8.0 mm
Wire gauge (Stranded wire cross section)	0.14 to 0.5 mm²/AWG26 to 20

❹ 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.

❺ 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.

❻ Installation Plate

EXW1-AB4

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

∗ Refer to page 21 for the dimensions.
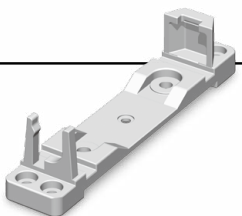
❼ External Antenna Set

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.

ø7

(115)

ø13

① **Whip antenna**

(1.6) (6.2) 40 (1500) 30 H8

② **Coaxial cable**

2 x ø4.5 5 38 (9.09) 15 30 20 17 25 13 9.8 2 x ø4.5

③ **Bracket**

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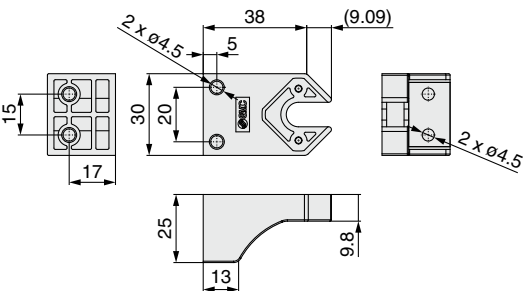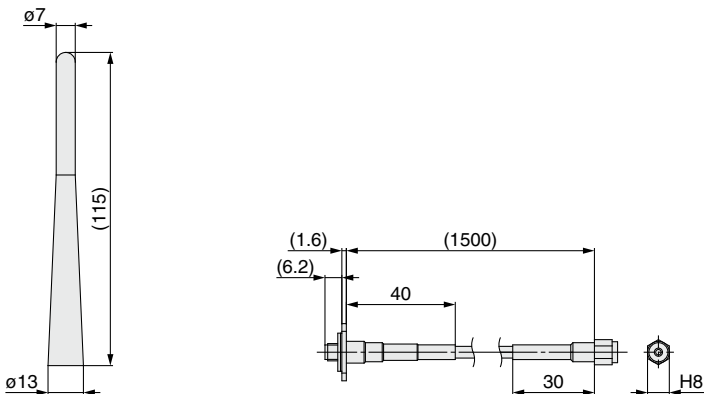
❽ Power Supply Connector, Connector for Input/Output Device Connection (e-CON)

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

Compact wireless remote (e-CON type)

Input/Output devices
Auto switch
Power supply
Valve
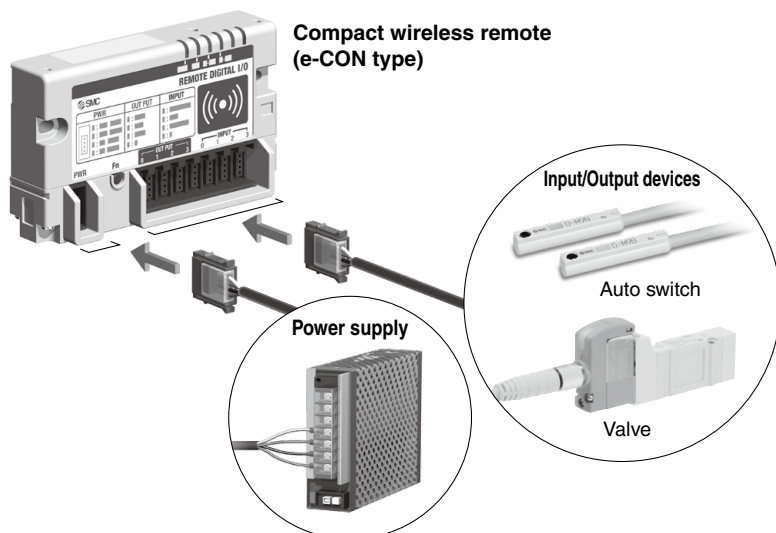
e-CON Part Nos. List

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 [mm²]	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
		ZK2 (ZK2-LV□□-A)		0.2 (AWG24)	ø1.4	ZS-28-C-2 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

❾ 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.

❶ 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

ø14.8   44.5   10000   50
22.5
ø7.7

Marker tag   Marker tag   Shield

M12
SPEEDCON

2 *1
1 3
4
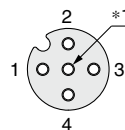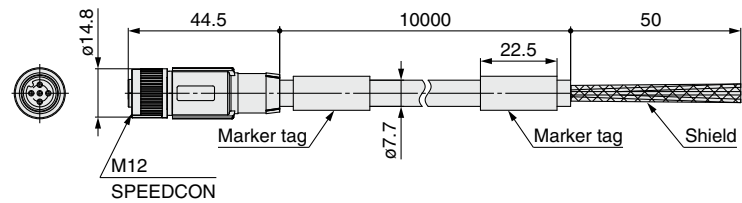
**Socket connector
pin arrangement
A-coded (Normal key)**

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

SMC

Wireless System

Modular Type
EX600-W Series

CE UK CA RoHS

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

Specific Product Precautions

How to Order

Wireless Unit

EX600−W EN 1

EtherNet/IP PROFINET

Base module **Remote module**

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

Digital Input Unit*1
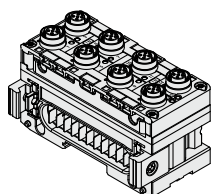
EX600−DX P D

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
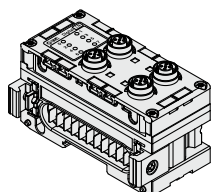
EX600−DY P B

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
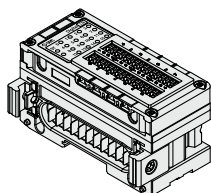
EX600−DM P F

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
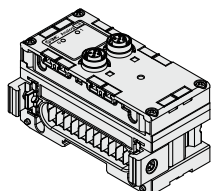
EX600−AX A

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**.

SMC

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How to Order

Analog Output Unit*1
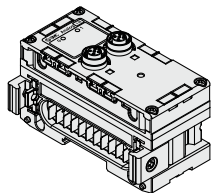
EX600‐AY A

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
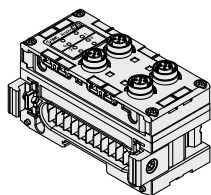
EX600‐AM B

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)
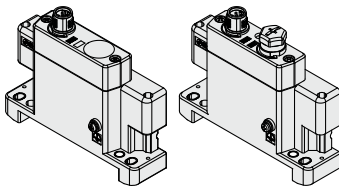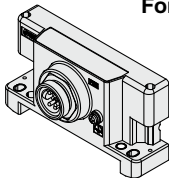
EX600‐ED2‐2

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.

For M12

For 7/8 inch

• **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)
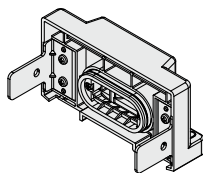
EX600‐EU1‐2

End plate •

End plate mounting position: U side •

Specifications •

Symbol	Specifications
1	Waterproof cover

• **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.

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		

SMC

Ordering Example of the Base Module

Base module: Without valve manifold and input/output unit

Wireless unit (Base module)
EX600-WEN1

End plate (D side)
EX600-ED4

End plate (U side)
EX600-EU1

D side

U side
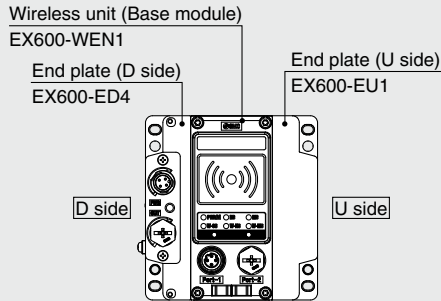
EX600-ED4 ··························	**1 set**
EX600-WEN1 ························	**1 set**
EX600-EU1 ··························	**1 set**

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

Manifold with base module: With input/output unit

Digital input unit
EX600-DXPD

Digital output unit
EX600-DYPB

Wireless unit
(Base module)
EX600-WEN1

2-position single
SY3100-5U1 (3 sets)

2-position double
SY3200-5U1 (2 sets)

End plate (D side)
EX600-ED4

D side

U side

1 2 3 4 5 --- Valve stations
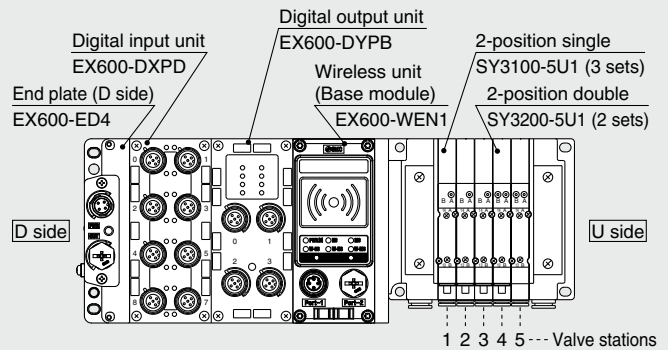
SS5Y3-10S6WE72-05B-C6
(Type 10 5-station manifold base, Base EtherNet/IP™ compatible)
Negative common, M12 connector IN/OUT pin arrangement 1, I/O unit: 2 stations
∗ **SY3100-5U1** ················ **3 sets (2-position single part no.)**
∗ **SY3200-5U1** ················ **2 sets (2-position double part 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

Digital output unit
EX600-DYPB

Digital input unit
EX600-DXPD

Wireless unit
(Remote module)
EX600-WSV1

End plate (D side)
EX600-ED4

End plate (U side)
EX600-EU1

D side

U side
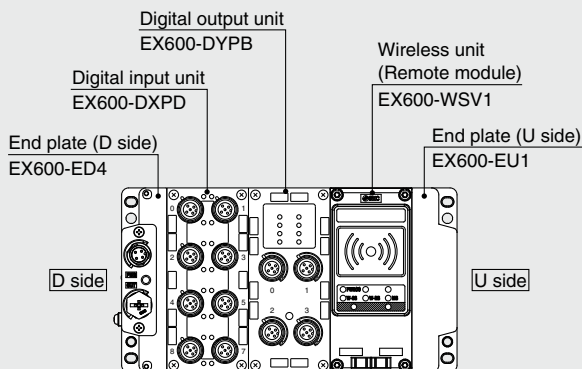
EX600-ED4 ··························	**1 set**
EX600-DXPD ·······················	**1 set**
EX600-DYPB ·······················	**1 set**
EX600-WSV1 ·······················	**1 set**
EX600-EU1 ·························	**1 set**

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

Manifold with remote module: With input/output unit

Digital input unit
EX600-DXPD

Digital output unit
EX600-DYPB

Wireless unit
(Remote module)
EX600-WSV1

2-position single
SY3100-5U1 (3 sets)

2-position double
SY3200-5U1 (2 sets)

End plate (D side)
EX600-ED4

D side

U side

1 2 3 4 5 --- Valve stations
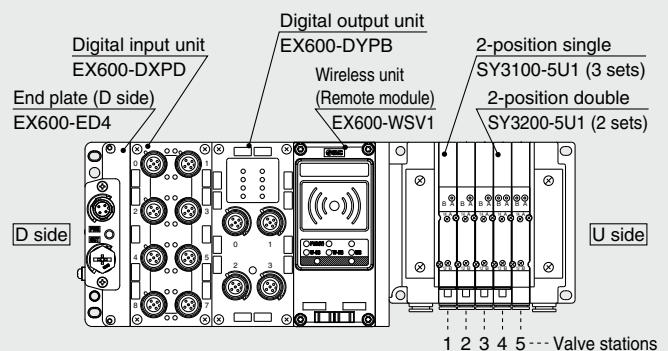
SS5Y3-10S6WS72-05B-C6
(Type 10 5-station manifold base, remote)
Negative common, M12 connector IN/OUT pin arrangement 1, I/O unit: 2 stations
∗ **SY3100-5U1** ················ **3 sets (2-position single part no.)**
∗ **SY3200-5U1** ················ **2 sets (2-position double part no.)**
∗ **EX600-DXPD** ··············· **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

SMC

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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 $5 \leq f < 8.4$ Hz 3.5 mm $8.4 \leq f < 150$ 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**	ISO/IEC 14443B (Type-B)
	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: https://www.smcworld.com
∗2 Varies depending on the wireless communication status and the surrounding environment
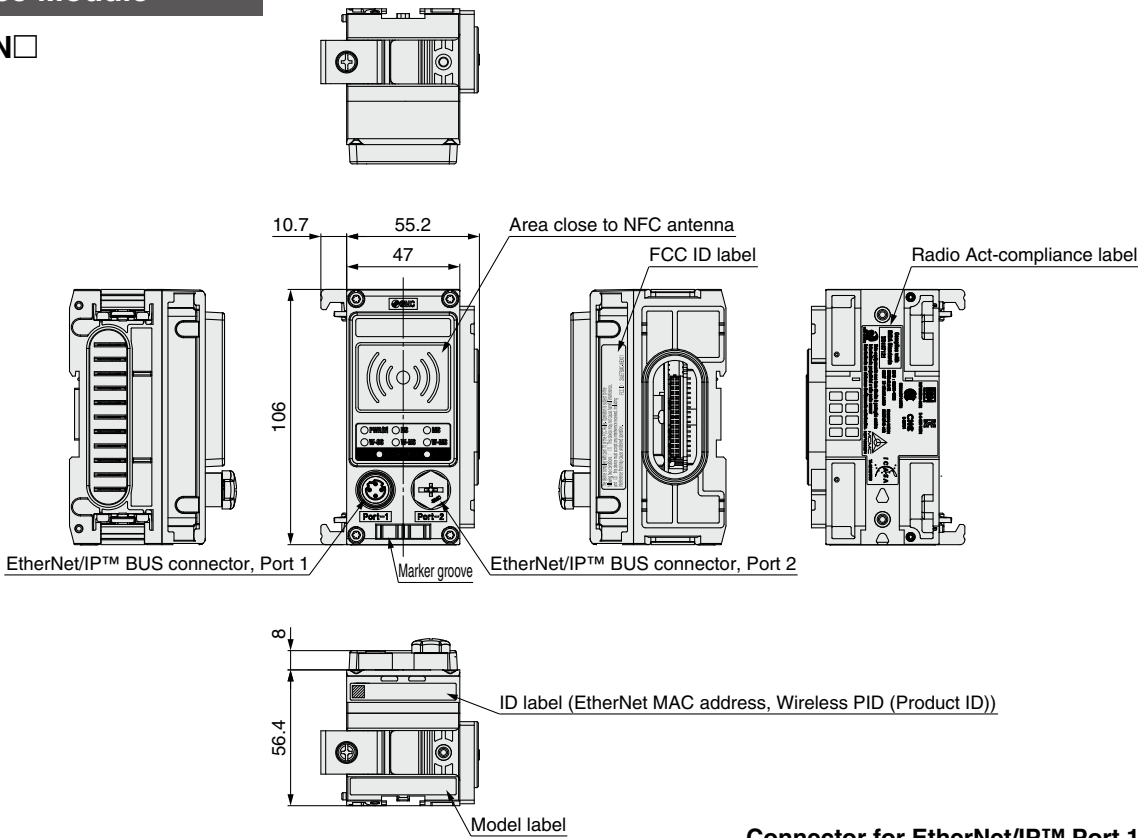∗3 The NFC communication RFID tag of the 13.56 MHz passive type

■**Trademark**
EtherNet/IP® is a registered trademark of ODVA. Inc.

SMC

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%
	For control/input (US1) — Current consumption	150 mA or less
	For output (US2) — Power supply voltage	24 VDC ±10%
	For output (US2) — Max. supply current	4 A
Input/Output	Number of inputs — System input size	Max. 1280 points together with the registered remote modules
	Number of inputs — 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
	Number of outputs — 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
	Analog input/output — 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)
	Valve output — Number of outputs	Max. 32 points (0/8/16/24/32 points)
	Valve output — 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 $5 \leq f < 8.4$ Hz 3.5 mm $8.4 \leq f < 150$ 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	ISO/IEC 14443B (Type-B)
	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: https://www.smcworld.com
*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

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 $5 \leq f < 8.4$ Hz 3.5 mm $8.4 \leq f < 150$ 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		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	M12 (4-pin) plug
		PWR OUT	—	—	M12 (5-pin) socket
	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.

SMC

Dimensions

Base Module

EX600-WEN□

10.7 55.2

47

Area close to NFC antenna

FCC ID label

Radio Act-compliance label

106

EtherNet/IP™ BUS connector, Port 1

Marker groove

EtherNet/IP™ BUS connector, Port 2

8

56.4

ID label (EtherNet MAC address, Wireless PID (Product ID))

Model label

Connector for EtherNet/IP™ Port 1/Port 2

M12, 4-pin, D-coded, socket	Pin no.	Description
2 1 3 4	**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□

10.7   55.2   Area close to NFC antenna
47   FCC ID label   Radio Act-compliance label

106

56.4   8

PROFINET IO BUS connector, Port 1   Marker groove   PROFINET IO BUS connector, Port 2

ID label (MAC address, Wireless PID (Product ID))

Model label

PROFINET IO BUS connector, Port 1/Port 2

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

Remote Module

EX600-WSV□

10.7   55.2   Area close to NFC antenna
47   FCC ID label   Radio Act-compliance label

106

56.4   8

Marker groove

ID label (Wireless PID (Product ID))

Model label

43

Dimensions

End Plate (D side)

EX600-ED2

2 x M4 direct mounting hole

85.1

Power supply connector
PWR IN

(4.4)
26
5.5
20.5
8
106
90
30.35

FE terminal

(85.1)
73.6
56.6
30.2
13.2

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

2 x M4 direct mounting hole

85.1

Power supply connector
PWR IN

(4.4)
26
5.5
20.5
8
106
90
30.35
29

Power supply connector
PWR OUT

FE terminal

(86.6)
73.6
56.6
30.2
13.2
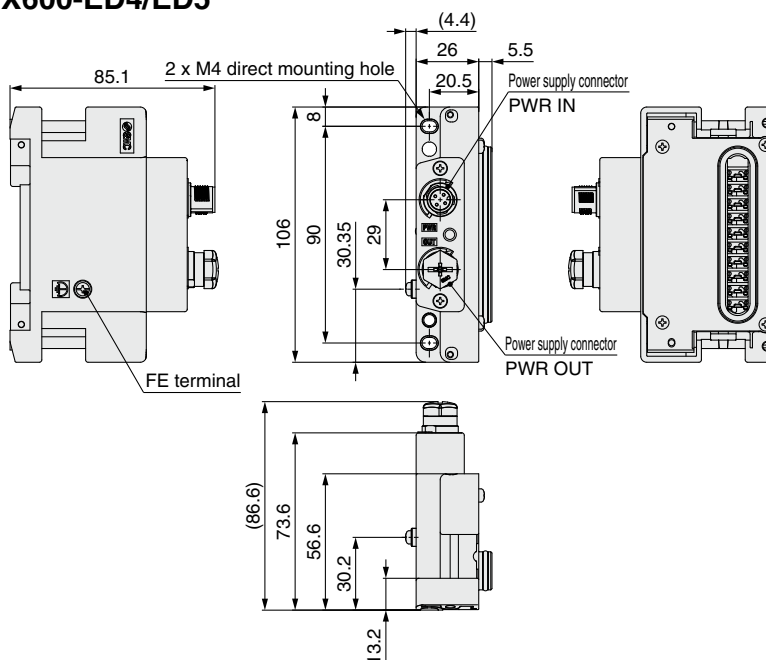
Power supply connector PWR IN: M12 4-pin plug, A-coded

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
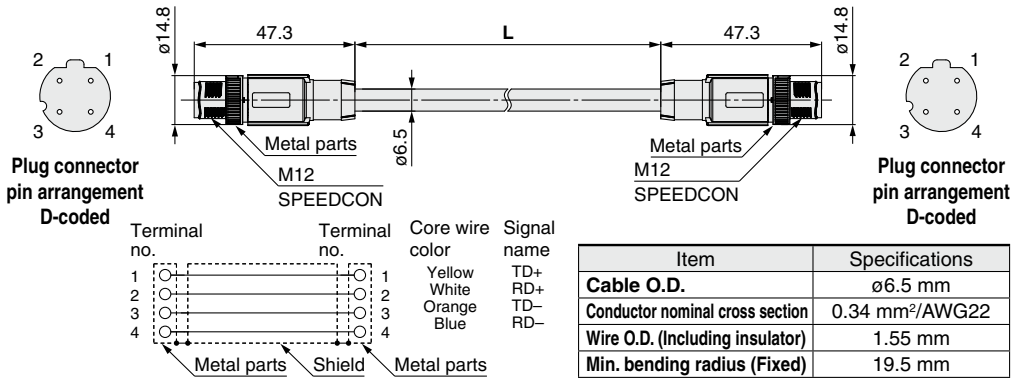
Specific Product Precautions

EX600-W *Series*

Dimensions

End Plate (D side)

EX600-ED3

2 x M4 direct mounting hole

42.5 | 5.5
26
20.5
8
106
90
30.35
56.6
36.65
30.2
13.2
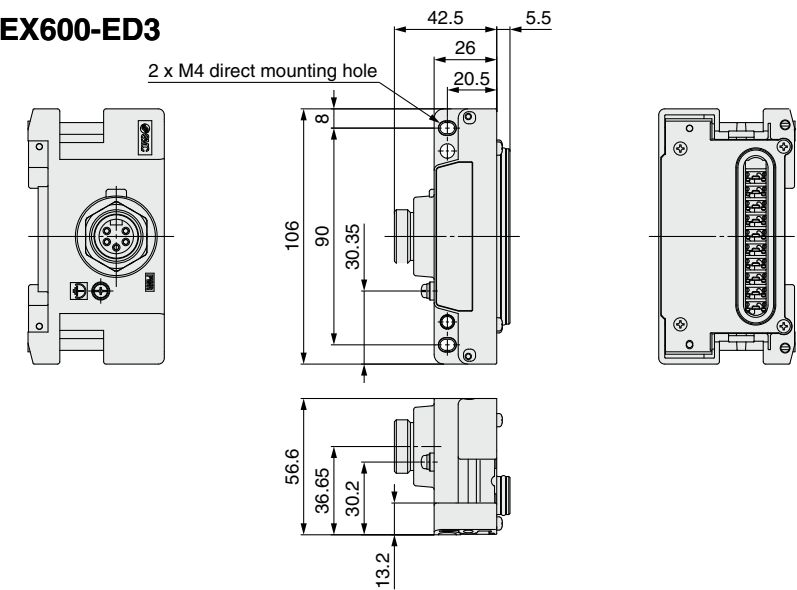
Power supply connector PWR: 7/8 inch 5-pin plug

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

28.2 | 26
20.5
2 x M4 direct mounting hole
8
90
106
4.6

SI unit mounting hole x 2

18.2
13.2
56.6
13
9.1
4.1
6.7

NFC Reader/Writer

EXW1-NT1

(72)
(24)
Cap
(12.3)
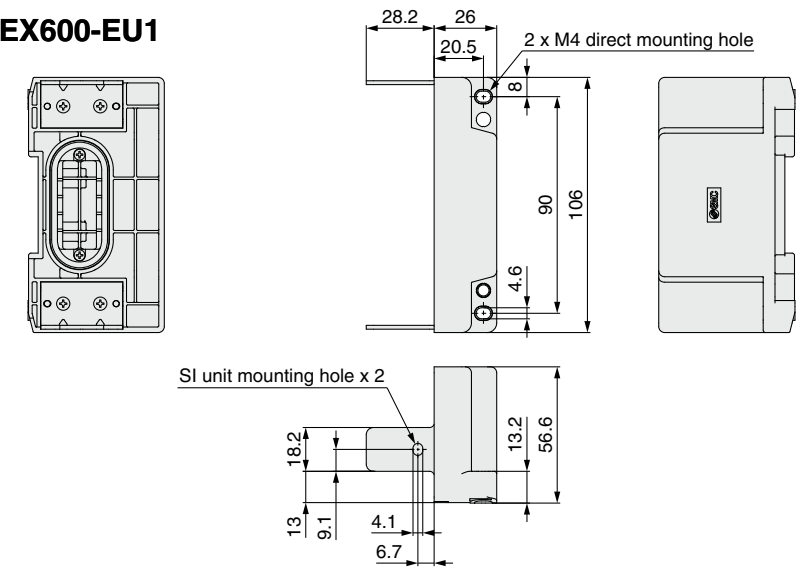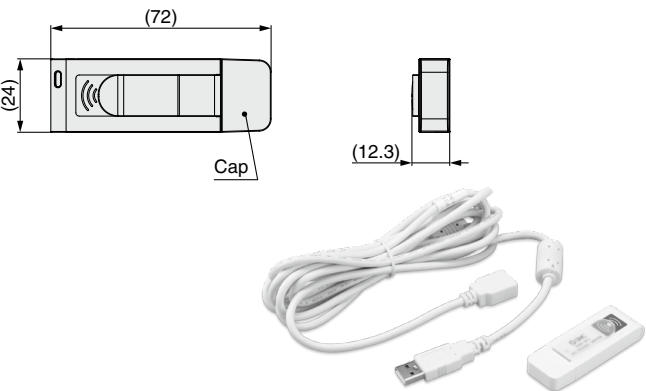
Fixing Bracket

EXW1-AB1 (Option, For EX600-W)

(45.6)
(76.25)
(21)

∗ Order a fixing bracket.

45

SMC

EX600-W Series
Accessories (Optional Parts)

❾ Power Supply Cable (M12 connector, For EX600-ED2)
❿ Power Supply Cable (M12 connector, For EX600-ED4/5)

⓫ Communication Cable
⓬ Field-wireable Communication Connector

❺ Seal Cap (M8)

⓭ I/O Cable with Connector

❻ Marker

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

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

❶ End Plate Bracket

❷ Valve Plate (When the valve manifold is in use)

❺ Seal Cap (M12)

❹ Reinforcing Brace (For direct mounting)

❸ End Plate (U side) (When the valve manifold is not in use)

❹ Reinforcing Brace (For DIN rail mounting)

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

Specific Product Precautions

❶ 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.

❷ 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.

SMC

46
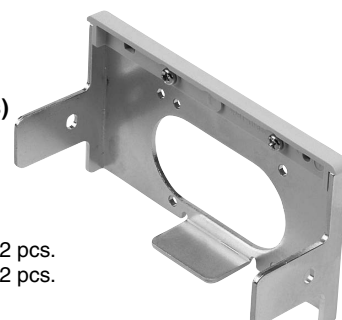
EX600-W *Series*

❸ 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

2 x M4 direct mounting hole

28.2　26
20.5
8
90
106
4.6

SI unit mounting hole x 2
18.2
13
9.1
4.1
6.7
13.2
56.6
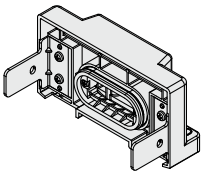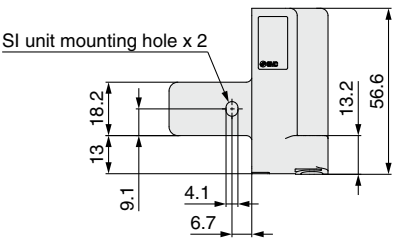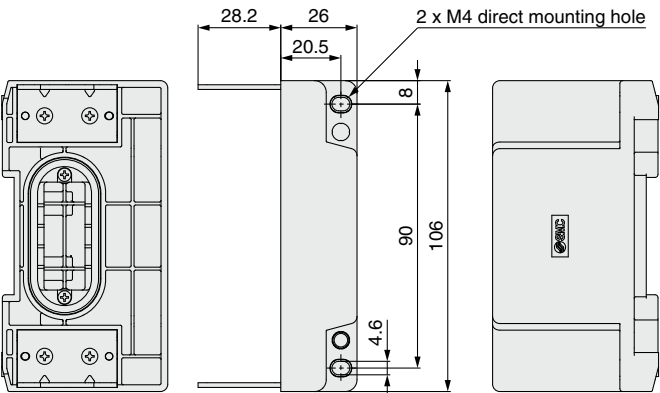
Enclosed parts
Round head screw (M4 x 6) 2 pcs.

❹ 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
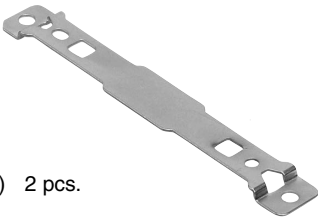
Enclosed parts
Round head screw (M4 x 5)　2 pcs.

For DIN rail mounting
EX600-ZMB2
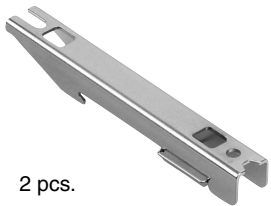
Enclosed parts
Round head screw (M4 x 6)　2 pcs.

❺ 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

❻ 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

SMC

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

Specific Product Precautions
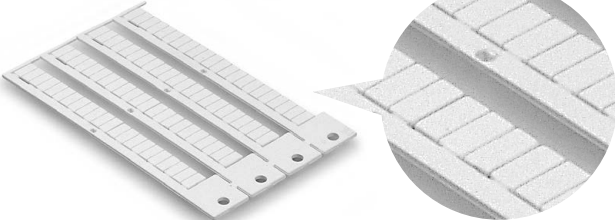
❼ **Power Supply Cable (7/8 inch connector, For EX600-ED3)**

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

49.9
36
ø26
ø7/8"
ø12.58
L

Socket pin arrangement

2 3 4 1 5

Core wire color
1 — Red/White: 0 V (For output)
2 — Red: 0 V (For control and input)
3 — Green: FE
4 — Red/Orange: 24 VDC ±10% (For control and input)
5 — Red/Black: 24 VDC +10%/–5% (For output)

Connections

Angled connector type

53
40.4
26.5
ø7/8"
ø26
ø12.58
L

Socket pin arrangement

1 2 3 5 4

Core wire color
1 — Red/White: 0 V (For output)
2 — Red: 0 V (For control and input)
3 — Green: FE
4 — Red/Orange: 24 VDC ±10% (For control and input)
5 — Red/Black: 24 VDC +10%/–5% (For output)

Connections

Item	Specifications
Cable O.D.	ø12.58 mm
Conductor nominal cross section	1.5 mm²/AWG16
Wire O.D. (Including insulator)	2.35 mm
Min. bending radius (Fixed)	110 mm

❽ **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 mm² AWG22 to 16

❾ **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

SPEEDCON

Straight connector type

ø14.8
44.5
L
50
22.5
ø5.9
Marker tag
Marker tag
M12
SPEEDCON

Terminal no.
Core wire color
1 — Brown: 24 VDC +10%/–5% (For output)
2 — White: 0 V (For output)
3 — Blue: 24 VDC ±10% (For control and input)
4 — Black: 0 V (For control and input)
5 — Gray: Not connected

5 1 2 4 3

Connections

Socket connector pin arrangement B-coded (Reverse key)

Angled connector type

36.3
28
ø14.8
L
50
22.5
ø5.9
Marker tag
Marker tag
M12
SPEEDCON

Terminal no.
Core wire color
1 — Brown: 24 VDC +10%/–5% (For output)
2 — White: 0 V (For output)
3 — Blue: 24 VDC ±10% (For control and input)
4 — Black: 0 V (For control and input)
5 — Gray: Not connected

5 1 2 4 3

Connections

Socket connector pin arrangement B-coded (Reverse key)

Item	Specifications
Cable O.D.	ø5.9 mm
Conductor nominal cross section	0.34 mm²/AWG22
Wire O.D. (Including insulator)	1.27 mm
Min. bending radius (Fixed)	59 mm

SMC

48

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

Socket connector
pin arrangement

**A-coded
(Normal key)**

27
40.7
L
ø14.9
ø6
30
5
50
M12
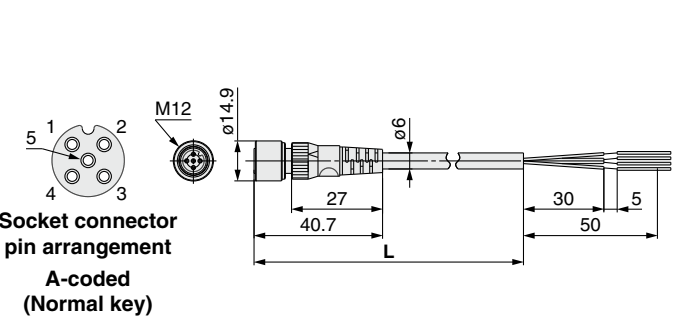
Item	Specifications
Cable O.D.	ø6 mm
Nominal cross section	0.3 mm²/AWG22
**Wire diameter
(Including insulator)**	1.5 mm
Min. bending radius	40 mm (Fixed)

Angled connector type
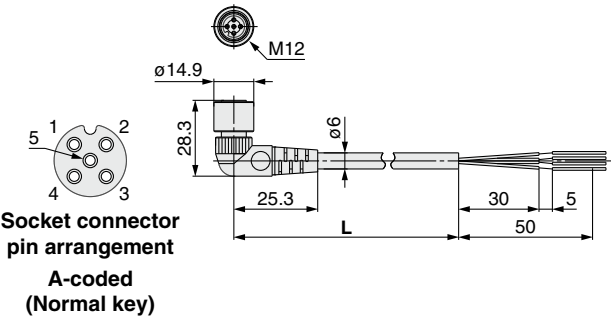
Socket connector
pin arrangement

**A-coded
(Normal key)**

M12
ø14.9
28.3
ø6
25.3
L
30
5
50

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

Terminal no.

Terminal no.	Cable core wire colors
1	Brown
2	White
3	Blue
4	Black
5	Gray

Connections
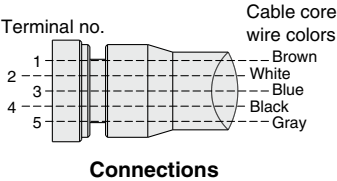
SPEEDCON

PCA- 1401804

Cable length (L)

1401804	1500 mm
1401805	3000 mm
1401806	5000 mm

Socket connector
pin arrangement

**A-coded
(Normal key)**

ø14.8
44.5
L
50
ø5
M12
SPEEDCON
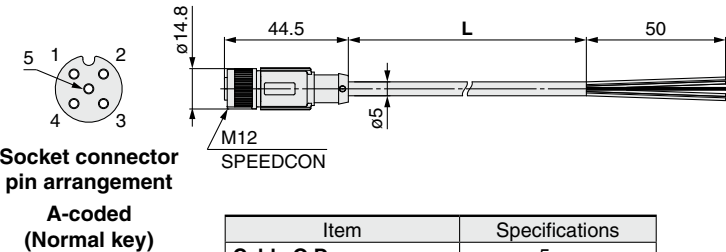
Item	Specifications
Cable O.D.	ø5 mm
Nominal cross section	0.3 mm²/AWG22
**Wire diameter
(Including insulator)**	1.27 mm
Min. bending radius	21.7 mm (Fixed)

Terminal no.

Terminal no.	Cable core wire colors
1	Brown
2	White
3	Blue
4	Black
5	Green/Yellow
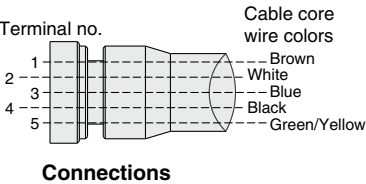
Connections

PCA- 1557769

Cable length (L)

| 1557769 | 3000 mm |

ø14.8
44
L
46.8
ø14.8
ø4.7
M12
SPEEDCON
M12
SPEEDCON

Terminal no.
Terminal no.

Connections

Socket connector
pin arrangement

**A-coded
(Normal key)**

Plug connector
pin arrangement

**A-coded
(Normal key)**

49

SMC
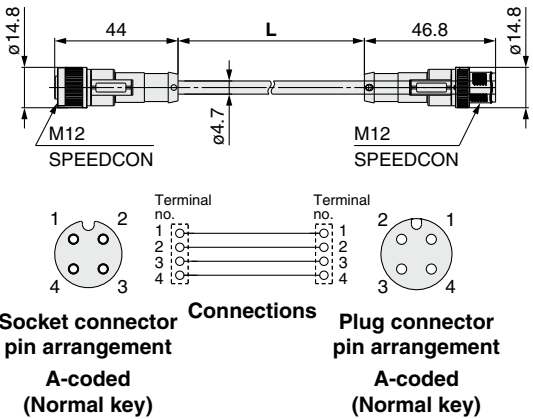
⓫ Communication Cable

| 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

M12

ø14.8

Metal parts   ø6.4   Metal parts   RJ-45

47.3   L   44

Plug connector pin arrangement D-coded

Signal name	Terminal no.		Terminal no.	Core wire color
TD+	1		1	White/Orange
RD+	2		2	Orange
TD–	3		3	White/Green
RD–	4		4	
			5	
			6	Green
			7	
			8	

Metal parts

Shield   Metal parts

Plug connector pin arrangement

Connections (Straight cable)
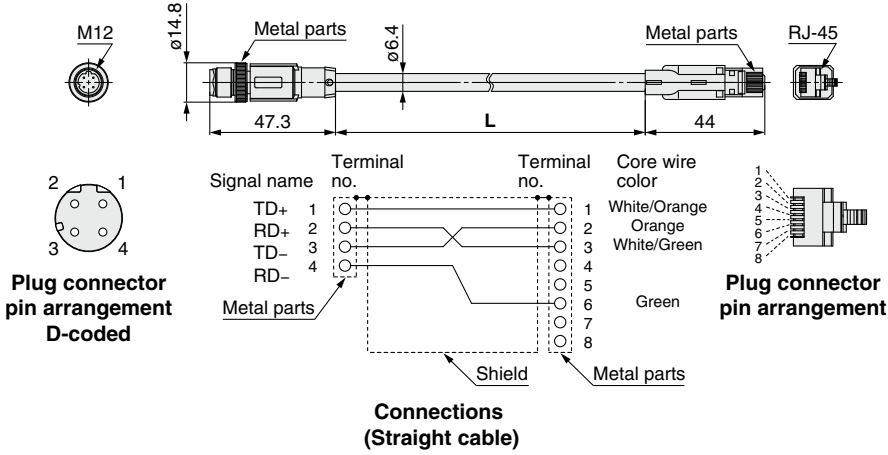
Item	Specifications
Cable O.D.	ø6.4 mm
Conductor nominal cross section	0.14 mm²/AWG26
Wire O.D. (Including insulator)	0.98 mm
Min. bending radius (Fixed)	26 mm

PCA-1446566 (Plug)

ø14.8   47.3   5000   50

ø6.5

M12
SPEEDCON

Plug connector pin arrangement D-coded

Terminal no.	Wire guide color
1	Yellow: TD+
2	White: RD+
3	Orange: TD–
4	Blue: RD–

Connections
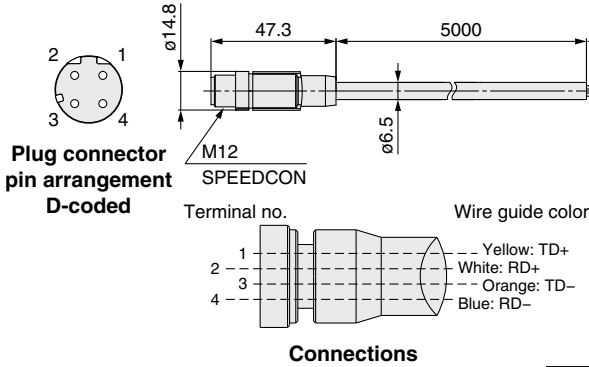
Item	Specifications
Cable O.D.	ø6.5 mm
Conductor nominal cross section	AWG22
Wire O.D. (Including insulator)	1.55 mm
Min. bending radius (Fixed)	45.5 mm

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

Specific Product Precautions

EX600-W Series

⑪ 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

Plug connector
pin arrangement
D-coded

Metal parts
M12
SPEEDCON

Plug connector
pin arrangement
D-coded

Terminal no.	Core wire color	Signal name
1	Yellow	TD+
2	White	RD+
3	Orange	TD–
4	Blue	RD–

Metal parts   Shield   Metal parts

Item	Specifications
Cable O.D.	ø6.5 mm
Conductor nominal cross section	0.34 mm²/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

Plug connector
pin arrangement
D-coded

Metal parts
M12
SPEEDCON
ø15

Plug connector
pin arrangement
D-coded

Terminal no.	Core wire color	Signal name
1	Yellow	TD+
2	White	RD+
3	Orange	TD–
4	Blue	RD–

Metal parts   Shield   Metal parts

Item	Specifications
Cable O.D.	ø6.5 mm
Conductor nominal cross section	0.34 mm²/AWG22
Wire O.D. (Including insulator)	1.55 mm
Min. bending radius (Fixed)	19.5 mm

Connections (Straight cable)

⑫ Field-wireable Communication Connector

Plug

| For PROFINET | For EtherNet/IP™ |

PCA-1446553
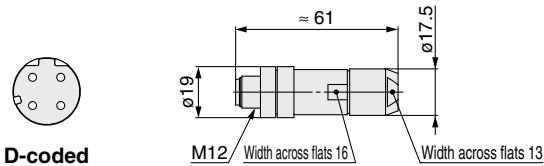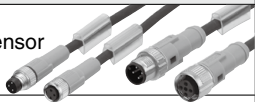
D-coded

M12   Width across flats 16   Width across flats 13

Applicable Cable

Item	Specifications
Cable O.D.	4.0 to 8.0 mm
Wire gauge (Stranded wire cross section)	0.14 to 0.34 mm²/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.

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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.

M12 ⬤ x 2 ➜ **M12** ⬤

M8 ⬤ x 2 ➜ **M12** ⬤

M8/M12 connector

M12 ⬤

| Y connector | Cable with connector | I/O unit |

EXW1 Series

Accessories

Made to Order

EX600-W Series

Accessories

Technical Data

Country-specific Radio Law Compliance Table

Specific Product Precautions
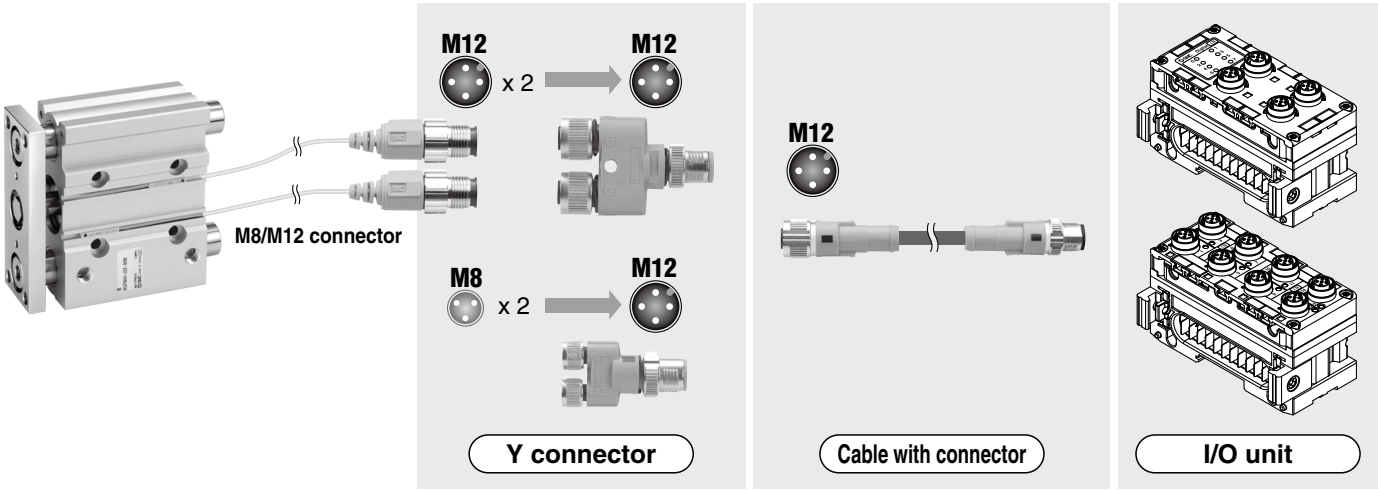
Technical Data

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.

Without frequency hopping

Time

Communication time

Communication packet
(1 data packet for communication)

Transmission frequency f [GHz]

Frequency

With frequency hopping

Time

Communication time

f_t3 ❸ f_t1 ❶ f_t4 ❹ ❷ f_t2 f_t5 Frequency
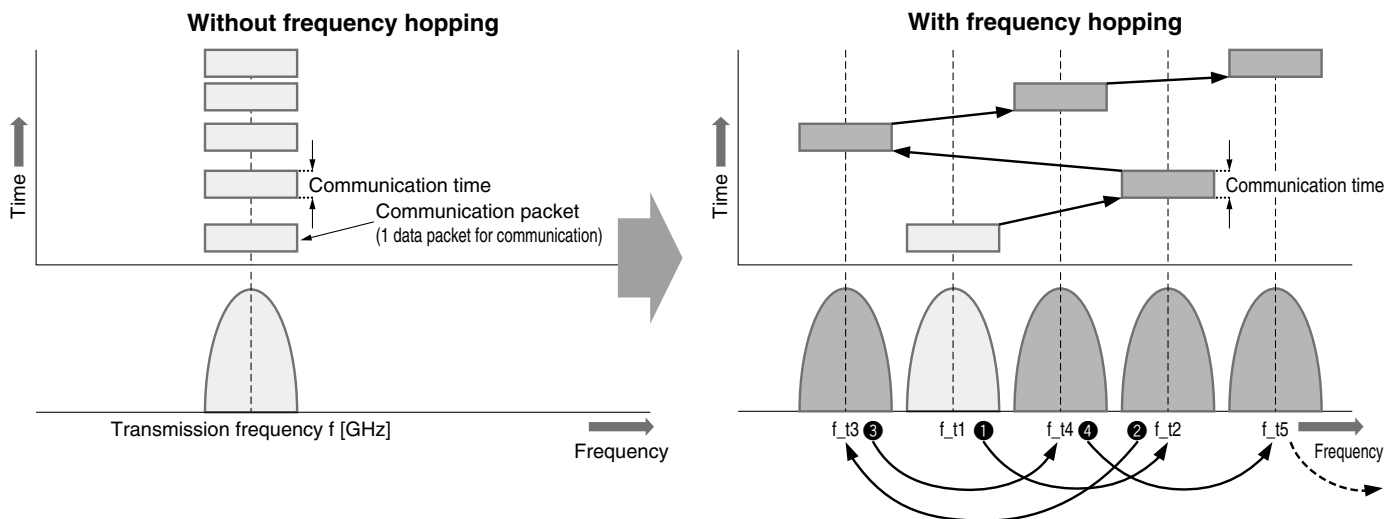
When a source of radio interference is present on a specific frequency, communication is maintained by moving to another frequency.

Frequency band with radio wave interference

Wi-Fi

When the communication competes with other systems (Wi-Fi, etc.), the unit changes to another frequency to continue communicating.

Time

Communication time

Frequency
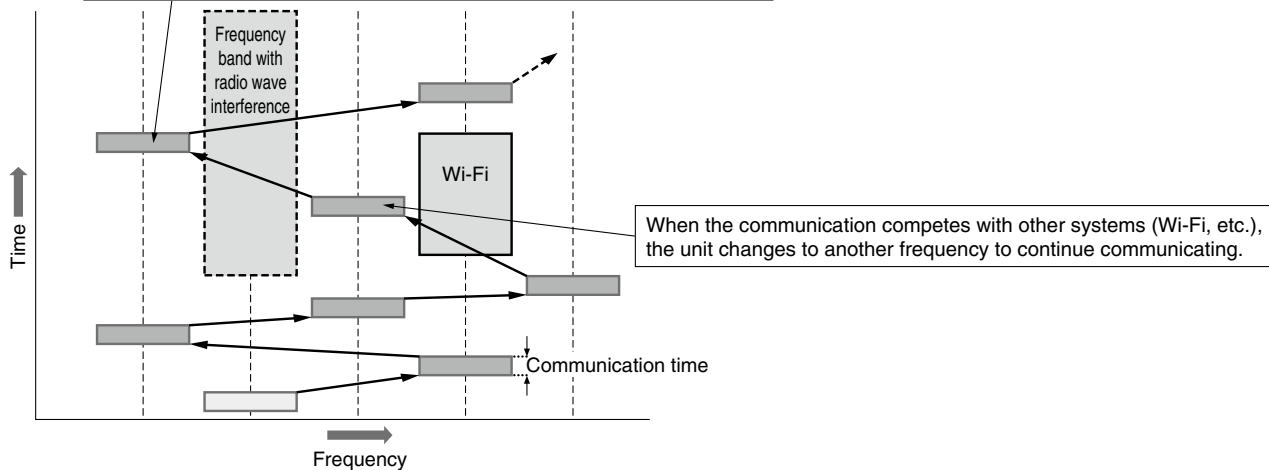
⚠ Warning <Important>

● 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.

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

As of September 2023

Area	Country/Region	Wireless adapter EXW1-A1□ — Part number suffix: E type	Wireless adapter EXW1-A1□ — Part number suffix: N type	Compact base/remote CC-Link/e-CON — Part number suffix: E type	Compact base/remote CC-Link/e-CON — Part number suffix: N type	Modular type EX600-W	NFC reader/writer 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	○	○	—	—	—	—
Africa	South Africa	○	○	—	—	○	○
	Egypt	○	○	—	—	—	—
	Morocco	—	—	—	—	○	○
North, Central, and South America	U.S.	—	○	—	○	○	○
	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.

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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: https://www.smcworld.com

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.

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Revision History					
Edition B	* A U-side end plate (for the SY) has been added.	WT	Edition E	* EtherCAT (protocol) has been added to the EXW1 series (compact type).	
Edition C	* The EXW1 series compact wireless system has been added.	AT		* The number of pages has been increased from 48 to 52.	
Edition D	* UKCA compliance has been added.		Edition F	* IO-Link has been added as a protocol for the compact type EXW1 series wireless remote.	
	* Countries in which the product is Radio Law certified have been added.	AY		* 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.