SMC

Operation Manual

Compact Wireless Remote

EXW1-RAXZA2C

SMC Corporation

Contents

⚠ Safety Instructions

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

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

⚠ **Danger**	**Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
⚠ **Warning**	**Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
⚠ **Caution**	**Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

⚠ Warning

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

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

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

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

⚡**SMC**

⚠ Safety Instructions

⚠ Caution
We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries. **Use in non-manufacturing industries is not covered.** Products we manufacture and sell cannot be used for the purpose of transactions or certification specified in the Measurement Act. The new Measurement Act prohibits use of any unit other than SI units in Japan.

Limited warranty and Disclaimer/Compliance Requirements

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

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.[*2]
   Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
   This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.
 	
       *2) Vacuum pads are excluded from this 1 year warranty.
         A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
         Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited. 2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

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Operator

♦ This operation manual is intended for those who have knowledge of machinery using pneumatic equipment, and have sufficient knowledge of assembly, operation and maintenance of such equipment. Only those persons are allowed to perform assembly, operation and maintenance.
♦ Read and understand this operation manual carefully before assembling, operating or providing maintenance to the product.

■Safety Instructions

⚠ Warning

■Do not disassemble, modify (including changing the printed circuit board) or repair.
An injury or failure can result.

■Do not operate or set with wet hands.
This may lead to an electric shock.

■Do not operate the product outside of the specifications.
Do not use for flammable or harmful fluids.
Fire, malfunction, or damage to the product can result.
Verify the specifications before use.

■Do not operate in an atmosphere containing flammable or explosive gases.
Fire or an explosion can result.
This product is not designed to be explosion proof.

■If using the product in an interlocking circuit:
•Provide a double interlocking system, for example a mechanical system.
•Check the product regularly for proper operation.
Otherwise malfunction can result, causing an accident.

■The following instructions must be followed during maintenance:
•Turn off the power supply.
•Stop the air supply, exhaust the residual pressure and verify that the air is released before performing maintenance.
Otherwise an injury can result.

⚠ Caution

■When handling the unit or assembling/replacing units:
•Do not touch the sharp metal parts of the connector or plug for connecting units.
•Take care not to hit your hand when disassembling the unit.
  The connecting portions of the unit are firmly joined with seals.
•When joining units, take care not to get fingers caught between units.
An injury can result.

■After maintenance is complete, perform appropriate functional inspections.
Stop operation if the equipment does not function properly.
Safety cannot be assured in the case of unexpected malfunction.

■Provide grounding to assure noise resistance of the Fieldbus system.
Individual grounding should be provided close to the product with a short cable.

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Precautions regarding the Radio Law

EXW1-A11*

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

NOTE:
  This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules.
  These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
  However, there is no guarantee that interference will not occur in a particular installation.
  If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  1. Reorient or relocate the receiving antenna.
  2. Increase the separation between the equipment and receiver.
  3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  4. Consult the dealer or an experienced radio/TV technician for help.
 	
  This equipment has been tested and found to comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
  (1) This device may not cause harmful interference
  (2) This device must accept any interference received, including interference that may cause undesired operation.
 	
  This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
  (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
  This device is authorized under Title 47 CFR 15.519 (the FCC Rules and Regulations).
  The operation of this device is subject to the following restriction:
  The changes or substitutions of the antennas which are furnished with the device is prohibited.
  FCC ID : 2AJE7SMC-WEX08

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This device complies with Industry Canada license-exempt RSS standard(s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

⚠Caution

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

"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."

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil nedoit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

"This Class B digital apparatus complies with Canadian ICES-003."

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

"This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter."

Cet appareil et son antenne (s) ne doit pas être co-localisés ou fonctionnant en conjonction avec une autre antenne ou transmetteur.

"This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body"

Cet équipement doit être installé et utilisé à une distance minimale de 20cm entre le radiateur et votre corps.

NCC 警語

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

"Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados"

"Para maiores informações, consulte o site da ANATEL – www.anatel.gov.br"

La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

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Precautions for Handling

○Follow the instructions given below for selecting and handling.

●The instructions on design and selection

∗Product specifications
•Use within the specified voltage.
 Otherwise, failure or malfunction can result.
•The power is supplied from the circuit reinforced or double-insulated from MAINS.
•The direct current power supply used should be UL approved as follows.
 UL1310 Class 2 power supply unit or UL61010-1 LIM (Limited Energy Circuit).
•All external circuits should also be connected to a circuit that is reinforced or double-insulated
 from the MAINS and free from risk of electric shock and fire hazard.
•Reserve a space for maintenance.
 Design the system to allow the required space for maintenance.
•Do not remove the label.
 This can lead to incorrect maintenance, or misreading of the operation manual, which can cause damage or
 malfunction to the product.
 It may also result in nonconformity to safety standards.
•Beware of inrush current when the power supply is turned on.
 An initial charge current may activate the over current protection function depending on the connected load,
 resulting in the unit malfunctioning.
•For UL/cUL certification, install in a distribution box or other container. (EXW1-A1∗).
•Differential type analog sensors cannot be used.

●Product Handling

∗Mounting
•Do not drop, hit or apply excessive shock to the product.
 Otherwise damage to the internal parts can result, causing malfunction.
•Tighten to the specified tightening torque.
 If the tightening torque is exceeded, the mounting screws can be broken.
 If the screws are tightened to a different torque, IP67 will not be achieved.
•Never mount the product in a location that will be used as a foothold.
 The product may be damaged if excessive force is applied by stepping or climbing onto it.

∗Wiring (Including connecting/disconnecting of the connectors)
•Avoid bending or stretching the cables repeatedly, or placing a heavy load or apply force to the product.
 Applying repeated bending and tensile stress to the cable may cause broken wires.
•Wire correctly.
 Incorrect wiring may cause malfunction of or damage to the wireless system.
•Do not perform wiring while the power is on.
 Otherwise the wireless system may be damaged or malfunction.
•Do not route wires and cables together with power or high voltage cables.
 The product can malfunction due to interference of noise and surge voltage from power and high voltage cables
 close to the signal line.
 Route the wires of the wireless system separately from power or high voltage cables.
•Confirm correct insulation of wiring.
 Poor insulation (interference with other circuits, poor insulation between terminals, etc.) can apply excessive
 voltage or current to the wireless system causing damage to it.
•When a wireless system is installed in machinery/equipment, provide adequate protection against noise
 by using noise filters, etc.
 Noise in signal lines may cause malfunction.

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∗Operating environment
 •Select the correct type of enclosure according to the operating environment.
   IP67 protection class is achieved when the following conditions are met.
   (1) The units are connected correctly using power supply cables and communication cables with M12 (or M8) connectors.
   (2) Suitable mounting of each unit and manifold valve.
   (3) Be sure to fit a water resistant cap on any unused connectors.
   If using in an environment that is exposed to water splashes, please take protective measures, such as using a cover.
   Do not use in an atmosphere having water, water steam, or where there is direct contact with any of these. These may cause failure or malfunction.
 •Do not use the product in a place where the product could be splashed by oil or chemicals.
   Operating in environments with coolants, cleaning solvents, various oils or chemicals may cause adverse effects (failure, malfunction) to the unit even in a short period of time.
 •Do not use the product in an environment where corrosive gases or fluids can be splashed.
   Otherwise damage to the unit can result, causing malfunction.
 •Do not use in an area where surges are generated.
   If there is equipment generating large surge near the unit (magnetic type lifter, high frequency inductive furnace, welding machine, motor, etc.), this can cause deterioration of the internal circuitry element of the unit or result in damage. Take measures against the surge sources, and prevent the lines from coming into close contact.
 •When a surge-generating load such as a relay, valve, or lamp is directly driven, use the product with built in surge protection.
   Direct drive of a load generating surge voltage can damage the unit.
 •The product is CE marked, but is not immune to lightning strikes. Take measures against lightning strikes in the system.
 •Prevent foreign matter such as dust or wire debris from entering inside the product.
   Otherwise it can cause damage or malfunction.
 •Mount the product in a place that is not exposed to vibration or impact.
   Otherwise it can cause damage or malfunction.
 •Do not use the product in an environment that is exposed to temperature cycles.
   Heat cycles other than ordinary changes in temperature can adversely affect the inside of the product.
 •Do not expose the product to direct sunlight.
   If using in a location directly exposed to sunlight, shade the product from the sunlight.
   Otherwise it can cause damage or malfunction.
 •Keep within the specified ambient temperature range.
   Otherwise malfunction can result.

 •Do not operate close to a heat source, or in a location exposed to radiant heat.
   Otherwise malfunction can result.

∗Adjustment and Operation
 •Perform settings suitable for the operating conditions.
   Incorrect setting can cause operation failure.
   (Refer to "Setting and Adjustment".)
 •Please refer to the PLC manufacturer's manual, etc. for details of PLC-side programming and addresses.
   For the PLC protocol and programming, refer to the relevant manufacturer's documentation.

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∗Maintenance
  •Turn off the power supply, stop the supplied air, exhaust the residual pressure and verify the release
    of air, before performing maintenance.
      Otherwise safety is not assured due to an unexpected malfunction or incorrect operation.
  •Perform regular maintenance and inspections.
      There is a risk of unexpected operation due to malfunction of the equipment.
  •After maintenance is complete, perform appropriate functional inspections.
      Stop operation if the equipment does not function correctly.
      Otherwise safety cannot be assured due to an unexpected malfunction or incorrect operation.
  •Do not use solvents such as benzene, thinner, etc. to clean each unit.
      These can damage the surface of the body and erase the markings on the product.
      Use a soft cloth to remove stains.
      For heavy stains, use a damp cloth that has been soaked with diluted neutral detergent and fully squeezed, then
      wipe up the stains again with a dry cloth.

Important Instructions concerning the Wireless System

●The wireless adapter must be attached to this product. A wireless adapter must be arranged separately.
●The wireless adapter (EXW1-A11∗) has received construction design certification as a wireless device
    based on the Radio Law (no license application or other procedures are required of the customer for
    use).
 - Do not disassemble or modify the product. Disassembly or modification is prohibited by law.
 - The wireless adapter connected to this product is compliant with the radio laws of each country. Please
    check the catalog at the website below for the latest certification countries. For use in other countries,
    please contact us separately.
    URL https://www.smcworld.com
●This product communicates using radio waves, and the communication may be temporarily interrupted
    due to the ambient environments and operating methods. SMC will not be responsible for any
    secondary failure which may cause an accident or cause damage to other devices or equipment.
●When several units are installed close to each other, the wireless products may interfere with each other,
    resulting in communication error and response delays.
●Radio waves emitted by this product may adversely affect implantable medical devices such as
    implantable cardiac pacemakers and brillators.
    For precautions regarding the use of equipment or devices that may adversely affect performance,
    refer to the catalog or instruction manuals for the equipment or devices, or contact the manufacturers
    directly.
●The communication performance is affected by the ambient environment, so please perform
    communication testing before use.

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SMC Wireless System

Features and Summary

SMC Wireless Products, EX600-W and EXW1 series products, are modular devices consisting of a gateway (hereafter referred to as a Base) and wireless devices (hereafter referred to as Remotes).

From an upper-level (PLC) control component, a Base appears to be a single system including Remotes paired with it. For the number of input/output points per system, refer to the manual of each base.

Bases and Remotes are designed to be identifiable by registering their uniquely assigned PIDs (Product IDs) with each other and operate therefore function without conflicts even when several Bases and Remotes operate in the same area.
The packet of the wireless transmit and receive data is encrypted. It is therefore difficult to manipulate the data.

Reference materials

| No.	Document No.	Content	Supplementary information
1	EX**-OMZ0016	Operation Manual EXW1-BMJA	It can be downloaded from the SMC website. URL: https://www.smcworld.com
2	EX**-OMA1031	Operation Manual EXW1-BECAC	
3	DOC1069997	Operation Manual EXW1-BENAC1	
4	DOC1069999	Operation Manual EXW1-BPNAC1	
5	DOC1089623	Operation Manual EXW1-BDNAC	
6	EX**-OMV0017	Operation Manual I/O Configurator (NFC edition)	

System Configuration

PLC compatible with EX600-W and EXW1 series communication protocols.

\<Base\>
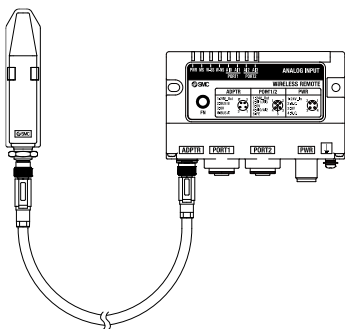
EXW1 series
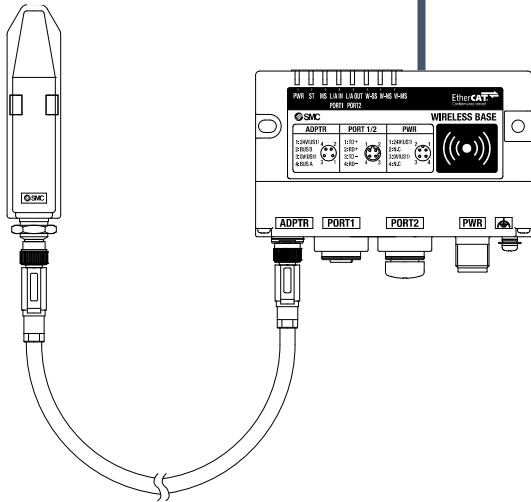
EX600-W series
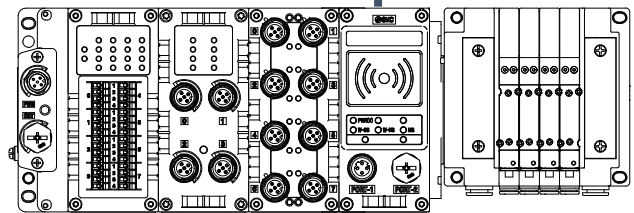
For settings and other information, refer to the operation manual for EX600-WEN/WPN*.
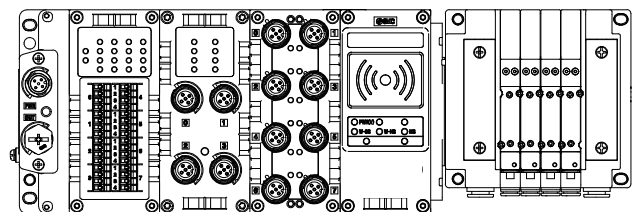
\<Remote\>

EXW1 series

EX600-W series

For settings and other information, refer to the operation manuals for EX600-WSV* and the connected digital and analog units.

Connected input/output devices

System compatibility

Mixed use with EX600-W Series

Although it is possible to use with EX600-W series, the operating conditions must comply with the specifications of the existing wireless system. Note that the following functions may be restricted:

•Communication distance
The maximum communication distance will vary depending upon the system configuration. Please see the details in the table on the next page.

•Protocol
This refers to the wireless communication version. For more details, check the system settings of the Base.

•Frequency channel select function (F.C.S.)
The frequency channel to use can be selected using this function.
* The number of selectable frequency channels varies depending on the country of use.
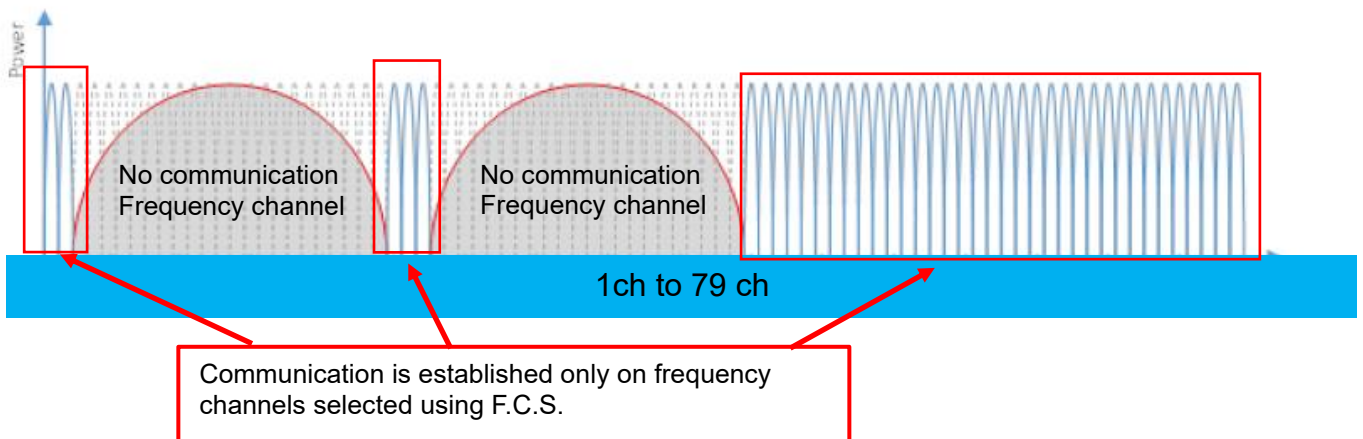For more details, check the product number.

Number of selectable frequency channels	Applicable country
Min. 5 channels, Max. 79 channels	Certified countries except for the U.S., Canada, South Korea, Brazil, Taiwan, Argentina, and Mexico.
Min. 15 channels, Max. 79 channels	Certified countries including the U.S., Canada, South Korea, Brazil, Taiwan, Argentina, and Mexico.

* If no channel is selected, communication is established on 79 channels by default.
* For the latest information, refer to the catalog on the website below.
URL https://www.smcworld.com

The figure below shows an example where only the frequency channels that do not clash with two wireless LAN channels are used for wireless communication.

Power

No communication
Frequency channel

No communication
Frequency channel

1ch to 79 ch

Communication is established only on frequency channels selected using F.C.S.

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Refer to the system configuration example below. For details, check the instruction manual of each product.

| No. | System configuration example | | Applicable function | | |
	Wireless Base	Wireless Remote	Communication distance	Protocol	Frequency channel select function (F.C.S.)
1	EXW1*1	EXW1	Up to 100 m	V.1.0/V.2.0*2	x *3
2	EXW1*1	EXW1+EX600-W	*4	V.1.0	-
3	EX600-W	EXW1	Up to 10 m	V.1.0	-
4	EX600-W	EXW1+EX600-W	Up to 10 m	V.1.0	-
5*5	EXA1	EXW1	Up to 100 m	V.2.0	-

*1 When paired with EXW1-BMJ (CC-Link wireless base), EXW1-RAXZA2C cannot be used in operation mode 1.
*2 For more details, check the system settings of the Base.
*3 Only available in Protocol V.2.0.
*4 Up to 100 m between an EXW1 series Base and Remote, and up to 10 m between an EXW1 series Base and an EX600-W series Remote.
*5 When paired with the EXA1 series air management system, the IO map and parameter settings operate with the values set on the remote.

○ System configuration example 1
  Wireless Base: EXW1 series
  Wireless Remote: EXW1 series

<Wireless Base>

<Wireless Remote>
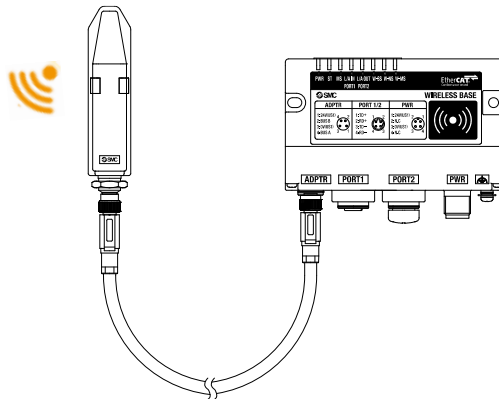
○ System configuration 2
    Wireless Base: EXW1 series
    Wireless Remote: EXW1 series, EX600-W series

<Wireless Base>

- -

<Wireless Remote>

EXW1 series   EX600-W Series

How to Order

The product system, model names and part numbering system of SMC wireless systems are as follows.
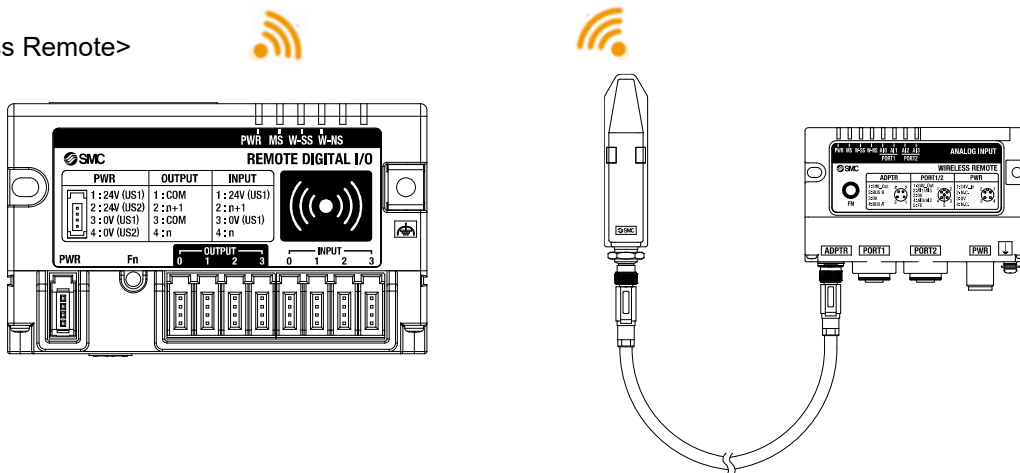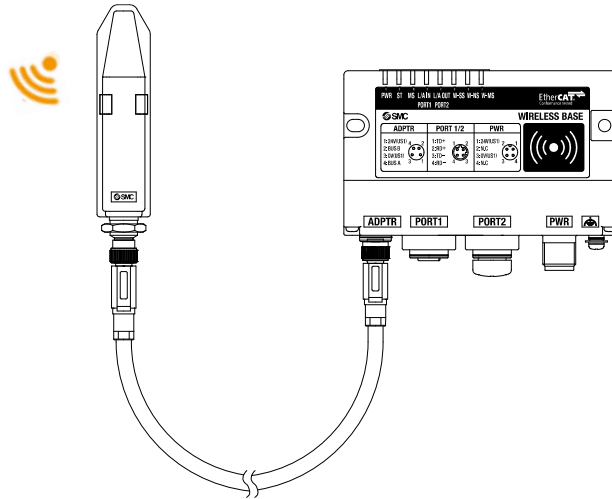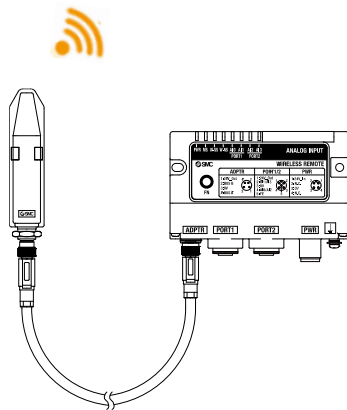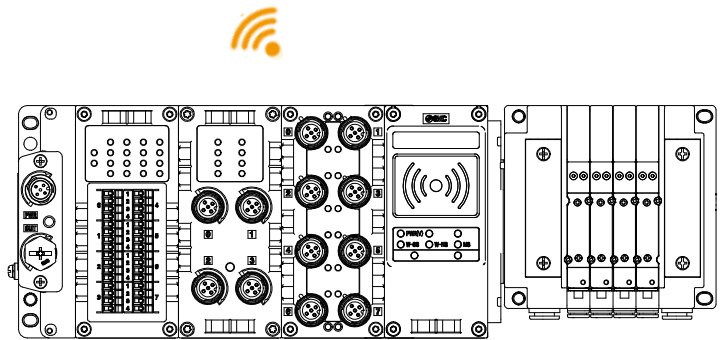
<Compact wireless Remotes>
This product line-up consists of one model, EXW1-RAXZA2C.

<Wireless Adapter>
This product line-up consists of two models, namely EXW1-A11E and EXW1-A11N.

	EXW1: Product series							
		R: Wireless Remote						
		A1: Wireless Adaptor						
			A: Analog					
				X: Input				
					Z: PNP/NPN type none			
						1: Serial number		
							A2: M12 4points	
								C: Wireless Adaptor

E: Certified countries except for the U.S., Canada, South Korea, Brazil, Taiwan, Argentina, and Mexico.
N: Certified countries including the U.S., Canada, South Korea, Brazil, Taiwan, Argentina, and Mexico.

Wireless Adaptor	EXW1-A11E	EXW1	A1	A	X	Z	1		E
	EXW1-A11N								N
Remote	EXW1-RAXZA2C		R	A	X	Z		A2	C

Summary of Product parts

EXW1-RAXZA2C

■Appearance
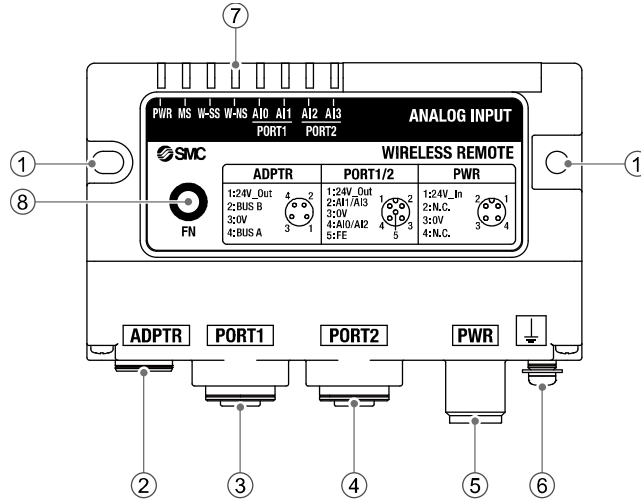
No.	Name	Application
(1)	Screw hole for mounting (2 x M4)	Mounting the compact Wireless Remote.
(2)	Connector for wireless adapter (ADPTR)	Connect the cable for wireless adapter.
(3)	Communication connector (PORT1)	Connection for the cable for device.
(4)	Communication connector (PORT2)	Connection for the cable for device.
(5)	Power supply connector(PWR)	Supplies power to the compact Wireless Remote.
(6)	FE terminal	To be connected to Ground (for improved noise immunity).
(7)	LED indicator	Indicates the status of the compact Wireless Remote or device.
(8)	FN (Pairing button)	Press the button when switching to pairing mode.

* Grounding should be as close as possible to the product and the grounding wire should be as short as possible.

■LED indicator

The LED indicators at the top left corner of the compact Wireless Remote indicate the power supply, communication, and diagnostic status.
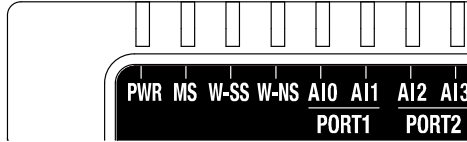
LED indicators of the compact Wireless Remote

LED name	Function	LED status		Description
		Color of LED	ON/Flashing	
PWR	Power supply status indicator	Green	ON	Power supply is ON.
		-	OFF	Power supply is OFF.
MS	Remote system status indicator	Green	ON	Operating normally.
		Green	Flashing(1Hz)	Power supply voltage level is abnormal. (Power Supply voltage monitor is valid)
		Red	Flashing(1Hz)	Recoverable error is detected. (Blinks when diagnostic information is detected) •Wireless adapter internal connection error.
		Red	ON	Unrecoverable error is detected.
		-	OFF	•Power supply is OFF. •Wireless adapter is disconnected.
W-SS	Radio wave receiving intensity	Green	ON	The level of received radio wave power is 3.
		Green	Flashing(1Hz)	The level of received radio wave power is 2.
		Green	Flashing(2Hz)	The level of received radio wave power is 1.
		Red	Flashing	Base that support protocol V.1.0 is not connected.
		Orange	Flashing	Base that support protocol V.2.0 is not connected.
		-	OFF	•Power supply is OFF. •Base not registered.
W-NS	Wireless communication connection status indicator	Green	ON	Base connected correctly.
		Red	Flashing	Base not registered.
		Red	ON	Base not connected (Unrecoverable error in wireless communication)
		Red / Green	Alternate Flashing	Wireless communication connection is being configured (pairing)
		Orange	ON	Force ON mode (Other remote function)
		-	OFF	•Power supply is OFF. •Base not registered.
AI0 AI1 AI2 AI3	Analog channel status indicator	Green	ON	Operating normally.
		Red	Flashing(1Hz)	Power supply short circuit detection •AI0,AI1: PORT1 short circuit •AI2,AI3: PORT2 short circuit
		Orange	ON	Input signal range upper and lower limits exceeded.
		Orange	Flashing(1Hz)	•User setting upper and lower limits exceeded. •Scale 0% > 100% (when scale conversion format is used)
		-	OFF	Power supply is OFF.

■Connectors

•Power supply connector

No.	Signal	Description	M12, 4-pin, plug
			A code
1	24V	DC 24V : Input[*1]	
2	N.C	N.C	
3	0V	DC 0V	
4	N.C	N.C	

*1: 24 VDC ±10%

•Analog device connector PORT1

No.	Signal	Description	M12, 5-pin, socket
			A code
1	24V	24V : Output[*1]	
2	AI1	Analog input	
3	0V	0V	
4	AI0	Analog input	
5	FE	FE	

*1: Do not turn on the power supply.

•Analog device connector PORT2

No.	Signal	Description	M12, 5-pin, socket
			A code
1	24V	24V : Output[*1]	
2	AI3	Analog input	
3	0V	0V	
4	AI2	Analog input	
5	FE	FE	

*1: Do not turn on the power supply.

Circuit diagram
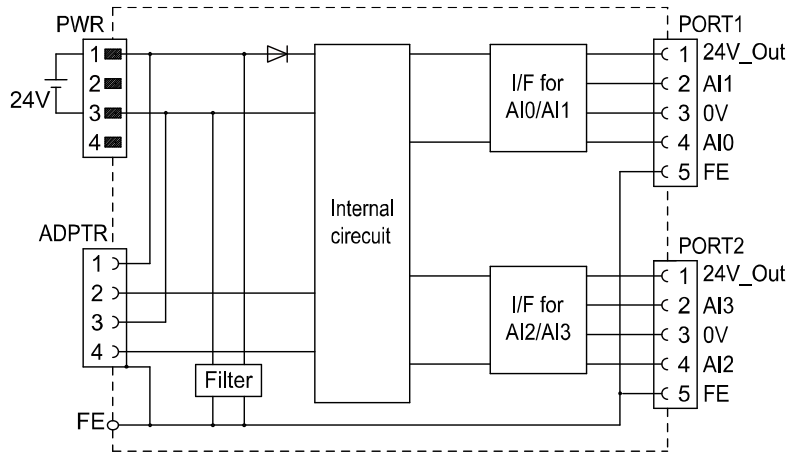
•Connector for wireless adapter[1]

No.	Signal	Description	M8, 4-pin, socket
1	24V	24V : Output[2]	3 4
2	Internal BUS B	Communication B	
3	0V	0V	
4	Internal BUS A	Communication A	1 2

*1: Use the wireless adapter cable specified to connect to the wireless adapter.
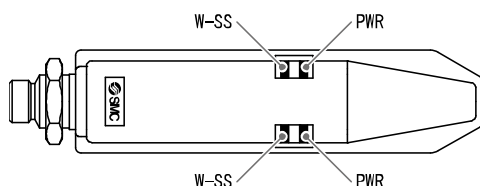*2: Do not turn on the power supply.

EXW1-A11* (Must be ordered separately)

▉ Appearance
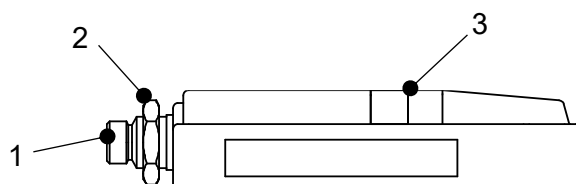
No.	Name	Application
1	Connector	Connector for Wireless Adaptor cable.
2	Nut	For fixing to Air Management system.
3	LED display	Indicates the status of the adaptor.

▉ LED indicator

LED name	Function	LED status Color of LED	LED status ON/Flashing	Description
PWR	Power supply and status indication	Green	ON	Power supply is ON.
		Orange	Flashing	An internal communication error is detected.
		Red	ON	Unrecoverable error is detected.
		-	OFF	Power supply is OFF.
W-SS	Received signal strength indicator	Green	ON	The level of received radio wave power is 3.
		Green	Flashing (1 Hz)	The level of received radio wave power is 2.
		Green	Flashing (2 Hz))	The level of received radio wave power is 1.
		Red	Flashing	Protocol V.1.0 base is not established.
		Orange	Flashing	Protocol V.2.0 base is not established.
		-	OFF	Base or Remote is not registered.

▉ Connector

No.	Signal	Description	M8, 4-pin, socket
1	24V	24V: Input	
2	Internal BUS B	Communication B	
3	0V	0V	
4	Internal BUS A	Communication A	

*Use the wireless adaptor cable specified to connect to the wireless adapter.

▉SMC.

Setting and Adjustment

Flow chart for operating the wireless system

■Flow chart for using the wireless system

To use SMC wireless units (Base and Remotes), they need to be set up using an NFC reader/writer and the I/O Configurator. Refer to the operation manual of the product in use for the further details.
The remote is in pairing mode as shipped from the factory. Transition from normal mode to pairing mode can be switched by push-button operation. (Pairing mode cannot be switched by the NFC reader/writer.)

○Switching pairing modes using a button on the Remote
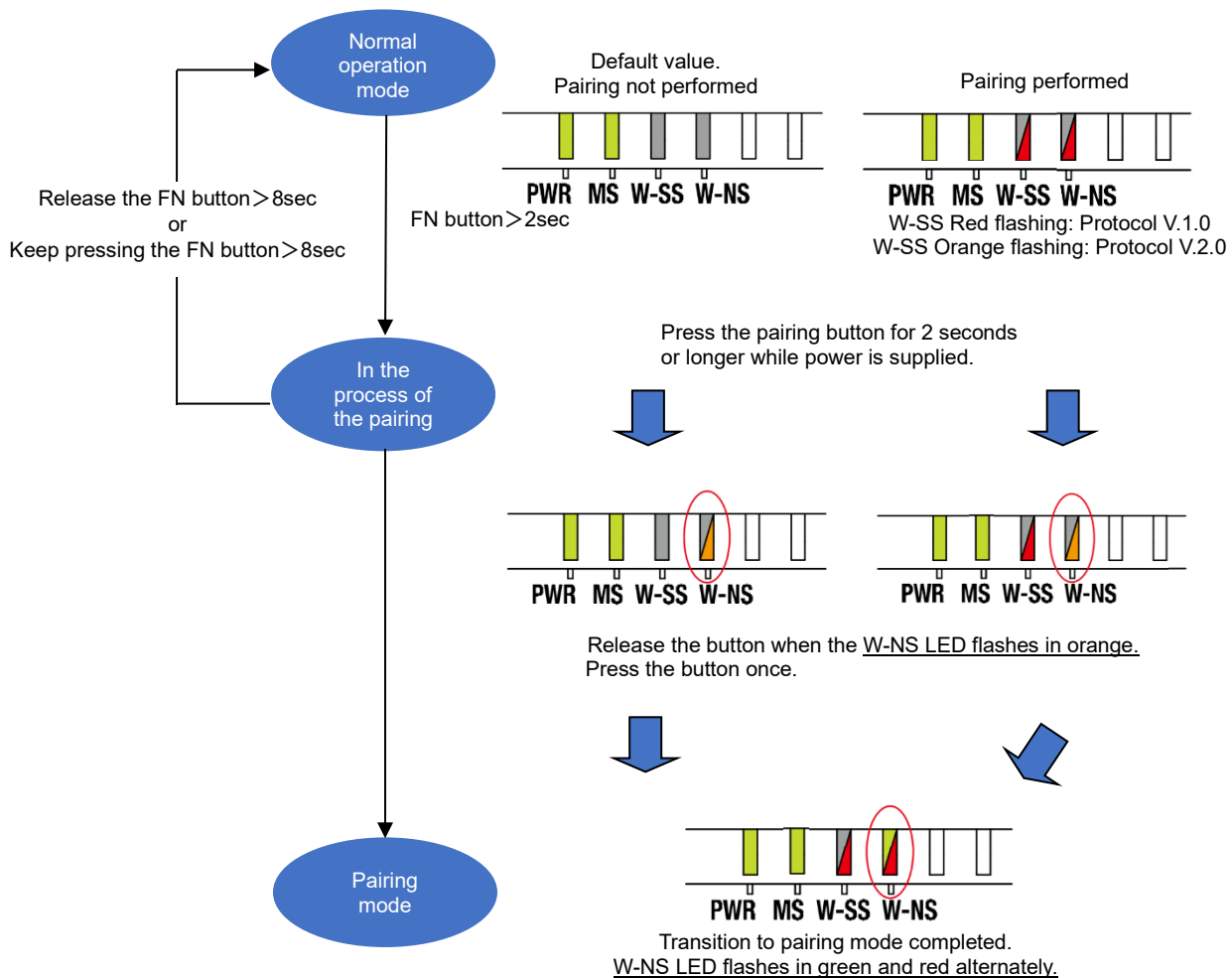
While in pairing mode, it is possible to switch from pairing mode to normal mode by pressing the FN button again for at least 2 seconds, releasing the button when the W-NS LED flashes orange, and then pressing the button once again.

Mounting and Installation of Units

■Installation
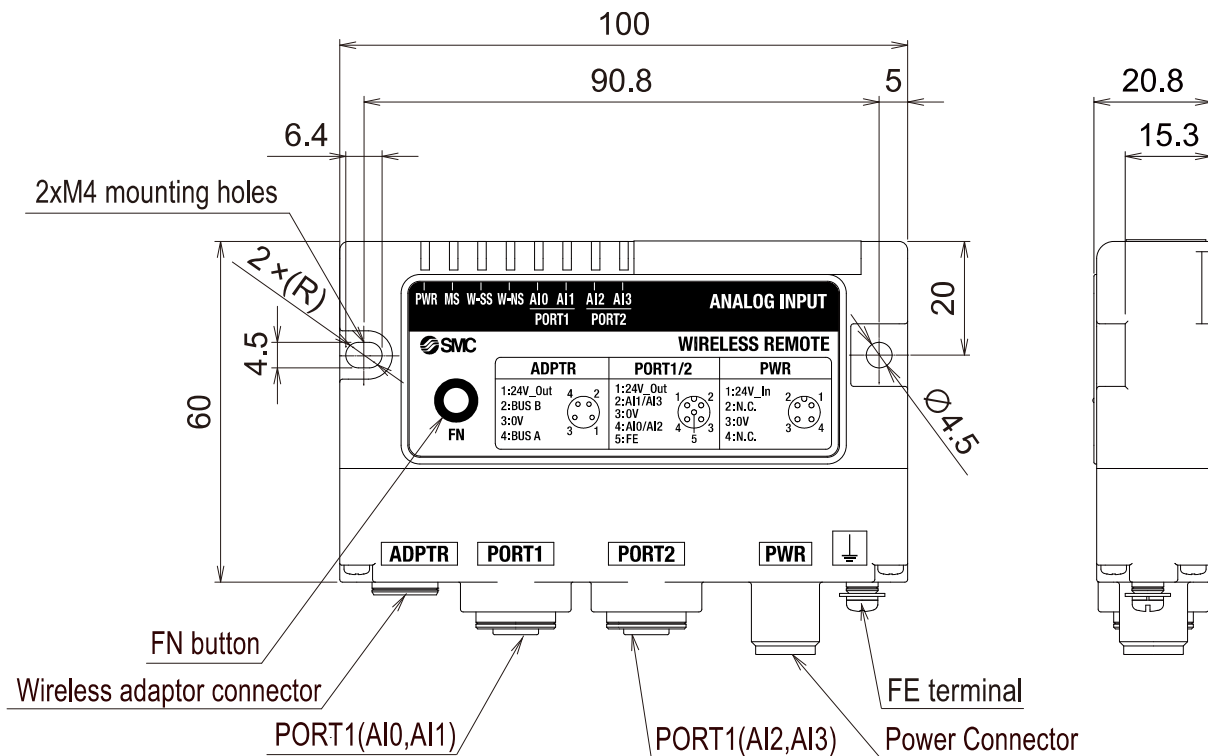
Compact wireless remote

⚠ **Caution**

•To avoid damage to parts, apply the recommended tightening torque.
•Mount the product using two screws.

2 x M4 screws are required (Recommended torque = 0.8+/-10% N·m).

ADPTR
1:24V_Out
2:BUS B
3:0V
4:BUS A

PORT1/2
1:24V_Out
2:AI1/AI3
3:0V
4:AI0/AI2
5:FE

PWR
1:24V_In
2:N.C.
3:0V
4:N.C.

FN button
Wireless adaptor connector
PORT1(AI0,AI1)
PORT1(AI2,AI3)
FE terminal
Power Connector

●Precautions for handling

Be sure to fit a seal cap on any unused connectors. Proper use of the seal cap enables the enclosure to achieve IP67 specification.
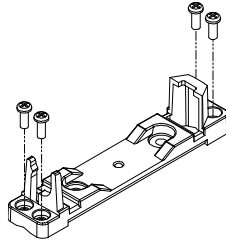
■Wireless adaptor

⚠ Caution

•To avoid damage to parts, apply the recommended tightening torque.
•Refer to the operation manual of the Wireless Adaptor for details.

(1) Attachment of installation plate
Attach the installation plate to the target object by either of the following two methods.

Installation with M3 x 4 positions
The tightening torque should be 0.4 N•m +/-10%.
(Mounting screws are not included.)

Installation with M4 x 2 positions
The tightening torque should be 0.6 N•m +/- 10%.
(Mounting screws are not included.)
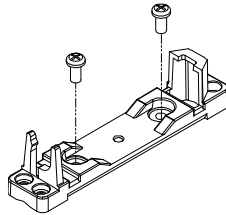
(2) Installation of wireless adaptor
Clip the wireless adaptor onto the installation plate as shown below and secure the adaptor in place using the M10 nut already fitted to the wireless adaptor.
The tightening torque should be 0.9 N•m +/- 10%.
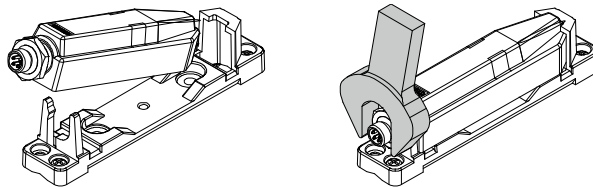
(3) Connection of the cable for wireless adaptor
Connect the cable to the base and the wireless adaptor.

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●Curved surface mounting
(1) Thread the top and bottom cable ties through the installation plate.
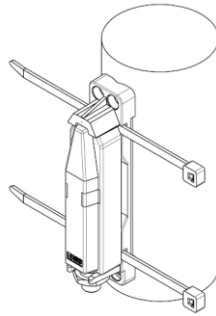
(2) Secure the wireless adaptor to the mount by tightening the cable ties. Trim back the loose ends of the cable ties.
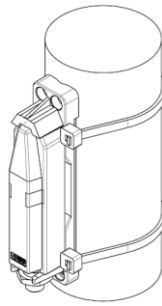
●Mounting the Wireless Adaptor
(1) Attachment of installation plate
   Secure the base and installation plate with the two tapping screws (M3 x 8) included with the wireless adaptor. The tightening torque should be 0.4 N•m +/- 10%.
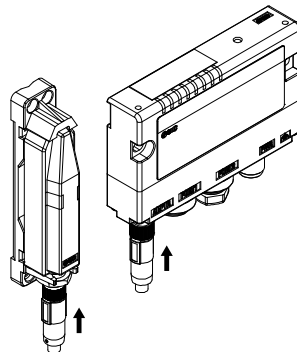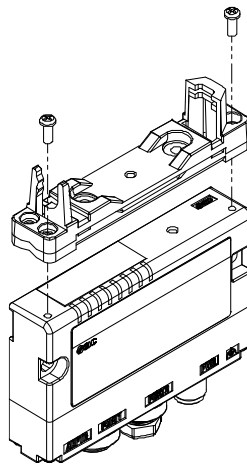
(2) Installation of wireless adaptor
Chip the wireless adaptor onto the installation plate as shown below and secure the adaptor in place using the M10 nut already fitted to the wireless adaptor.
The recommended tightening torque is 0.9 N•m +/- 10%.
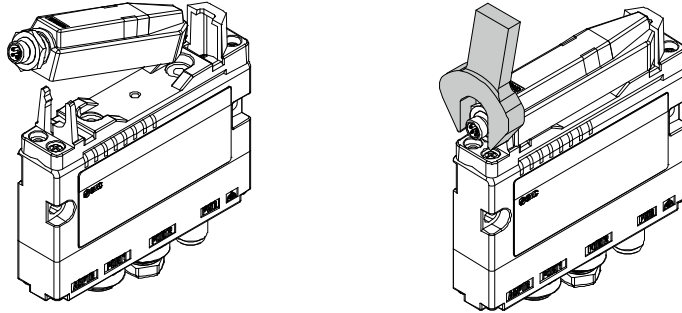
(3) Connecting the cable for the wireless adaptor
Follow the procedure below to connect the cable for the wireless adaptor.
   1) Connect the U-side connector of the cable for the wireless adaptor to the base or remote.
   2) Connect the S-side connector of the cable for the wireless adaptor to the adaptor.

Doc.DOC1104200-1
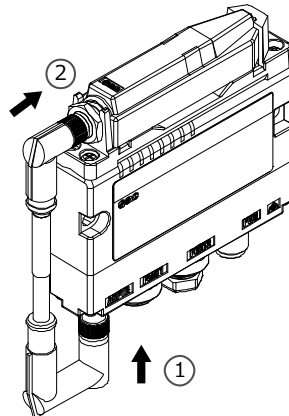
Troubleshooting

When problems occur, take appropriate countermeasures while referring to the LED indication, troubleshooting and parameter settings.
If a cause applicable to the failure cannot be identified, this indicates that the equipment itself is broken.
The fieldbus system damage can be caused by the operating environment. Contact SMC to obtain countermeasures.

•Remote phenomenon

LED	Description	LED status		No.
		Color of LED	ON/Flashing	
-	All LEDs are OFF.	-	-	Problem 1
PWR	Except green ON	-	OFF	Problem 2
MS	Except green ON	Green	Flashing	Problem 3
		Red	Flashing	
		Red	ON	
		-	OFF	
W-SS	Except green ON	Red	Flashing	Problem 4
		Orange	Flashing	
		-	OFF	
W-NS	Except green ON	Red	Flashing	Problem 5
		Orange	ON	
		Red	ON	
		Red / Green	Alternate Flashing	
		-	OFF	
AI0 to AI3	Except green ON	Red	Flashing	Problem 6
		Orange	ON	
		Orange	Flashing	
		-	OFF	

SMC.

•Remote troubleshooting

Problem No.	LED name	LED status		Possible causes	Investigation and countermeasures
		Color of LED	ON/Flashing		
1	All	-	OFF	Power supply is OFF	Supply 24 VDC +/-10% for power source.
2	PWR	-	OFF	Power supply is OFF	Supply 24 VDC +/-10% for power source.
3	MS	Green	Flashing	Power supply voltage level is abnormal. (Power Supply voltage monitor is valid)	Supply 24 VDC +/-10% for power source.
		Red	Flashing	Detects the following diagnostic information Wireless adaptor internal connection error.	Determine the nature of the abnormality using system diagnostic information and LED indications, etc., and refer to the following countermeasures. Communication with the wireless adapter is not working properly. Check for loose connectors or disconnected wires.
		Red	ON	Remote malfunction	Replace the Remote If the error persists after replacement, stop using the equipment and contact your SMC sales representative.
		-	OFF	(1) Power supply is OFF (2) Wireless adapter is disconnected.	(1) Supply 24 VDC +/-10% for power source. (2) Connect wireless adapter.

Problem No.	LED name	LED status		Possible causes	Investigation and countermeasures
		Color of LED	ON/Flashing		
4	W-SS	Red	Flashing	When Protocol V.1.0 is used (1) Power supply for the Base is OFF (2) Outside the wireless coverage area	(1) Supply 24 VDC +/-10% for the US1 (for control) power source of the Base. (2) The distance which wireless communication between wireless systems can be established may have been exceeded. Reconsider the operating environment, such as the installation conditions, of the Base and Remote.
		Orange	Flashing	When Protocol V.2.0 is used (1) Power supply for the Base is OFF (2) Outside the wireless coverage area	(1) Supply 24 VDC +/-10% for power source of the Base. (2) The distance which wireless communication between wireless systems can be established may have been exceeded. Reconsider the operating environment, such as the installation conditions, of the Base and Remote.
		-	OFF	(1) Base not registered (2) Power supply is OFF	(1) Check the registration status of the base and perform pairing correctly. (2) Supply 24 VDC +/-10% for power source.

SMC

Problem No.	LED name	LED status		Possible causes	Investigation and countermeasures
		Color of LED	ON/Flashing		
5	W-NS	Red	Flashing	(1) Power supply for the base is OFF (2) Outside the wireless coverage area	(1) Supply 24 VDC +/-10% for the US1 (for control) power source of the Base. (2) The distance which wireless communication between wireless systems can be established may have been exceeded. Reconsider the operating environment, such as the installation conditions, of the Base and Remote.
		Red	ON	Remote malfunction	Replace the Remote If the error persists after replacement, stop using the equipment and contact your SMC sales representative.
		Red / Green	Alternate Flashing	In pairing mode	Pairing mode is in progress. Do not enter pairing mode if pairing is not to be performed.
		Orange	Flashing(1 Hz)	FN (pairing button) in use	FN is being used. Change the mode according to the application.
		Orange	ON	Force ON mode	Function for other remotes (output remotes). Reboot the remote after using the forced output mode.
		-	OFF	(1) Base not registered (2) Power supply is OFF	(1) Check the registration status of the base and perform pairing correctly. (2) Supply 24 VDC +/-10% for power source.
6	AI0 AI1 AI2 AI3	Red	Flashing	Power supply short circuit detection	Check the wiring in the shorted area or check if the cable and IO device are normal.
		Orange	ON	Input signal range upper and lower limits exceeded.	Input signal exceeds upper or lower limit of specification. Check the signal.
		Orange	Flashing	User setting upper and lower limits exceeded.	The input signal exceeds the upper or lower limit of the set value, or the scale 0% > 100% (when using the scale conversion format) is set. Check the signal or change the set value.
		-	OFF	Power supply is OFF	Supply 24 VDC +/-10% for power source.

SMC

• Wireless adapter phenomenon

LED	Description	LED status		№
		Color of LED	ON/Flashing	
-	All LEDs are OFF.	-		Problem 1
PWR	PWR LED is red or flashes orange or is off.	-	OFF	Problem 2
		Orange	Flashing	
		Red	ON	
W-SS	W-SS LED flashes red or orange or is off.	Red	Flashing	Problem 3
		Orange	Flashing	
		-	OFF	

• Wireless Adaptor troubleshooting

Problem No.	LED name	LED status		Possible causes	Investigation and countermeasures
		Color of LED	ON/Flashing		
1	All	-	OFF	Power supply is OFF	Supply 24 VDC +/-10% for power source.
2	PWR	-	OFF	Power supply is OFF	Supply 24 VDC +/-10% for power source.
		Orange	Flashing	Internal communication error with the wireless adaptor.	Check for loose connectors and broken wires.
		Red	ON	Wireless Adaptor malfunction.	Replace the Wireless Adaptor. If the error persists after replacement, stop using the equipment and contact your SMC sales representative.
3	W-SS	Red	Flashing	When Protocol V.1.0 is used. (1) Power supply of registered Base is OFF. (2) Outside the wireless coverage area.	(1) Supply 24 VDC +/-10% to the US1 (for control / input) power source of the registered Base. (2) The distance which wireless communication between wireless systems can be established may have been exceeded. Reconsider the operating environment, such as the installation conditions, of the Base and Remote.
		Orange	Flashing	When Protocol V.2.0 is used. (1) Power supply of registered Base is OFF. (2) Outside the wireless coverage area.	(1) Supply 24 VDC +/-10% for power source of the Base. (2) The distance which wireless communication between wireless systems can be established may have been exceeded. Reconsider the operating environment, such as the installation conditions, of the Base and Remote.
		-	OFF	(1) Factory condition (2) Power supply is OFF	(1) Factory condition. Perform pairing. (2) Supply 24 VDC +/-10% for power source.

Technical Information

I/O Map

The number of bytes occupied by process data input is shown below.

• Channel assignment

	Input	
	Bit 7	Bit 0
Byte 0	Analog input data AI0	
Byte 1		
Byte 2	Analog input data AI1	
Byte 3		
Byte 4	Analog input data AI2	
Byte 5		
Byte 6	Analog input data AI3	
Byte 7		

• Data Details
Data format: Scaled
Endian type: Little Endian

	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte N	Data Bit 7	Data Bit 6	Data Bit 5	Data Bit 4	Data Bit 3	Data Bit 2	Data Bit 1	Data Bit 0
Byte N+1	Sign	Data Bit 14	Data Bit 13	Data Bit 12	Data Bit 11	Data Bit 10	Data Bit 9	Data Bit 8

Data format: Scaled
Endian type: Big Endian

	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte N	Sign	Data Bit 14	Data Bit 13	Data Bit 12	Data Bit 11	Data Bit 10	Data Bit 9	Data Bit 8
Byte N+1	Data Bit 7	Data Bit 6	Data Bit 5	Data Bit 4	Data Bit 3	Data Bit 2	Data Bit 1	Data Bit 0

Data format: Offset binary
Endian type: Little Endian

	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte N	Data Bit 7	Data Bit 6	Data Bit 5	Data Bit 4	Data Bit 3	Data Bit 2	Data Bit 1	Data Bit 0
Byte N+1	Data Bit 15	Data Bit 14	Data Bit 13	Data Bit 12	Data Bit 11	Data Bit 10	Data Bit 9	Data Bit 8

Data format: Offset binary
Endian type: Big Endian

	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte N	Data Bit 15	Data Bit 14	Data Bit 13	Data Bit 12	Data Bit 11	Data Bit 10	Data Bit 9	Data Bit 8
Byte N+1	Data Bit 7	Data Bit 6	Data Bit 5	Data Bit 4	Data Bit 3	Data Bit 2	Data Bit 1	Data Bit 0

Parameters

Parameters can be changed via paired base. For more details, check the manual of the paired base.
When paired with the EXA1 series air management system, the parameter settings operate with the values set on the remote and cannot be changed.

＜Setting parameters＞

No.	Target Item	Parameter	Definition	Setting Value	Content	Default setting[1]
1	Remote	Brown-out Detection for US1	Generated error when power supply voltage.	Enable	Generating the error is valid	x
				Disable	Generating the error is invalid	
2		Short Circuit Detection(Power)	Detect the short circuit condition.	Enable	Generating the error is valid	x
				Disable	Generating the error is invalid	
3		Byte Order	Type of endian.	Little Endian/ LSB-MSB (0)	Little endian	x
				Big Endian/ MSB-LSB (1)	Big endian	
4		Analog Data Format	Data format.	Offset binary (0)	Offset binary	
				(1)[2]	Reserved	
				(2)[2]	Reserved	
				Scaled (3)	Scale conversyion format	x
5		AD Update Time	Update time for analog input data.	20-60000	Update time as [ms]	500
6		Over Range	Detect the over-range error.	Enable	Generating the error is valid	
				Disable	Generating the error is invalid	x
7		Under Range	Detect the under-range error.	Enable	Generating the error is valid	
				Disable	Generating the error is invalid	x
8	Port （AI0-AI3）	Analog Range	Set the type of analog value unit and range.	0..10 V (3)	0 to 10V	
				0..5 V (4)	0 to 5V	x
				1..5 V (5)	1 to 5V	
				0..20 mA (6)	0 to 20mA	
				4..20 mA (7)	4 to 20mA	

SMC.

No.	Target Item	Parameter	Definition	Setting Value	Content	Default setting*1
9	Port (AI0-AI3)	Analog Filter	Select the filtering values	None (0)	None	
				2AVG (1)	Average of 2 times	x
				4AVG (2)	Average of 4 times	
				8AVG (3)	Average of 8 times	
				16AVG (4)	Average of 16 times	
				32AVG (5)	Average of 32 times	
				64AVG (6)	Average of 64 times	
10		Scaled Upper Value	100% vlue as scaled data format.	-32766 to 32767	-	10000
11		Scaled Lower Value	0% vlue as scaled data format.	-32767 to 32766	-	0
12		Upper Limit	Detection of the upper limit error.	Enable	Generating the error is valid	x
				Disable	Generating the error is invalid	
13		Upper Limit Detection Value	Value of upper limit error detection based on the input signal as the percentage value times 100.	-32766 to 32767	Input signal upper limit value*3	10000
14		Lower Limit	Detection of the lower limit error.	Enable	Generating the error is valid	x
				Disable	Generating the error is invalid	
15		Lower Limit Detection Value	Value of lower limit error detection based on the input signal as the percentage value times 100.	-32767 to 32766	Input signal lower limit value*3	0

*1 Items marked with an 'x' are the default values.
*2 The reserved values (1) or (2) are worked as value (3).
*3 Set the value as a persentage multipuled by 100, based on the input rage selected.

<Diagnostic parameters>

No.	Target Item	Parameter	Definition	Setting Value	Content
1	Port (AI0-AI3)	User Setting Value Lower Limit Error	Detect the Lower limit error or scale 0% > 100% (when using scale conversion format) error	No error (0)	No error
				Error (1)	Error
2		User Setting Value Upper Limit Error	Detect the Upper limit error or scale 0% > 100% (when using scale conversion format) Erro	No error (0)	No error
				Error (1)	Error
3		Under Range Detection	Detect an under analog input range error	No error (0)	No error
				Error (1)	Error
4		Over Range Detection	Detect an over analog input range error	No error (0)	No error
				Error (1)	Error
5		Short Circuit Detection(Input)	Detect a short circuit for the analog input power	No error (0)	No error
				Error (1)	Error
6		Peak Hold Value	Hold of the peak value during the power supply ON or after the clear.	2 Bytes data[*4]	Peak value during the power supply ON or after the clear.
		Bottom Hold Value	Hold of the bottom value during the power supply ON or after the clear.	2 Bytes data[*4]	Bottom value during the power supply ON or after the clear.
7		Data Clear	Peak or bottom hold value clear	(1):Peak clear (2):Bottom clear (3):All clear [*5]	bit1 0 / Don't care / Bottom / Peak

[*4] The meaning changes depending on the data format and endian setting.

[*5] These values are represented in Decimal. Please consider as the bit data when setting the data.

I/O Characteristic

(1) Scale conversion format

This is the default setting for the data format. It is possible to convert the analog data values corresponding to the input signal into any value.

The conversion parameter is able to modify between -32767 and 32767. The initial value is 0 for 0% and 10000 for 100%.

Please refer to Analog Data Format, Scaled Upper Value and Scaled Lower Value regarding the parameter setting detail.
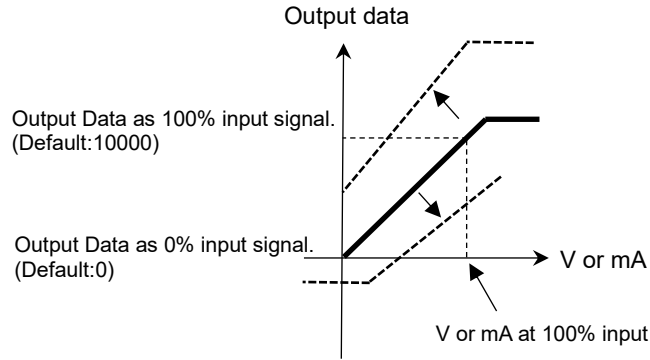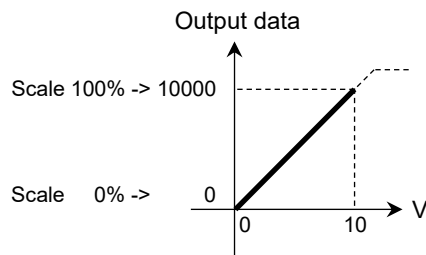

Output data range		
	Hexadecimal	Decimal
100%	0x8002 to 0x7FFF	-32766 to 32767
0%	0x8001 to 0x7FFE	-32767 to 32766

● Precaution for handling

Please make sure that 0% ＜ 100%.

・Input range 0 to 10 V (Default)

Scale	Output data		Voltage [V]
	Hexadecimal	Decimal	
110%	0x2AF8	11000	11
100%	0x2710	10000	10
0%	0x0000	0	0

・Input range 0 to 5 V (Default)

Output data

Scale 100% -> 10000

Scale 0% -> 0

0   5   V
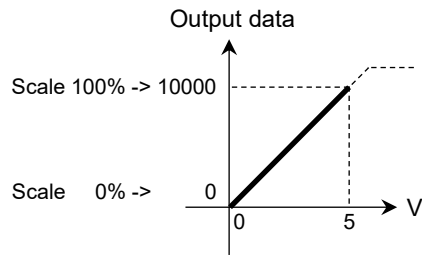
Scale	Output data		Voltage [V]
	Hexadecimal	Decimal	
110%	0x2AF8	11000	5.5
100%	0x2710	10000	5
0%	0x0000	0	0

・Input range 1 to 5 V (Default)

Output data

Scale 100% -> 10000

Scale 0% -> 0
Scale -6.25% -> -625

1   5   V
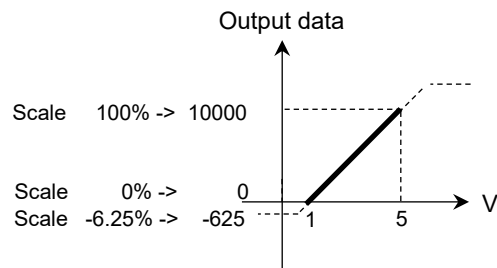
Output data			Voltage [V]
%	Hexadecimal	Decimal	
110%	0x2AF8	11000	5.4
100%	0x2710	10000	5
0%	0x0000	0	1
Same as or less than -6.25%	0xFD8F	-625	Same as or less than 0.75

・Input range 0 to 20 mA (Default)
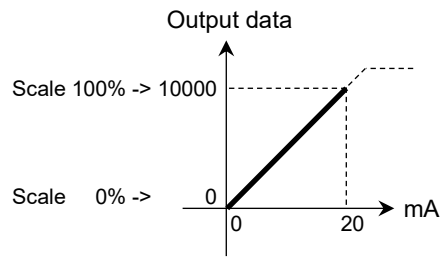
Output data

Scale 100% -> 10000

Scale 0% -> 0

0   20   mA

Output data			Current [mA]
%	Hexadecimal	Decimal	
110%	0x2AF8	11000	22
100%	0x2710	10000	20
0%	0x0000	0	0

・Input range 4 to 20 mA (Default)
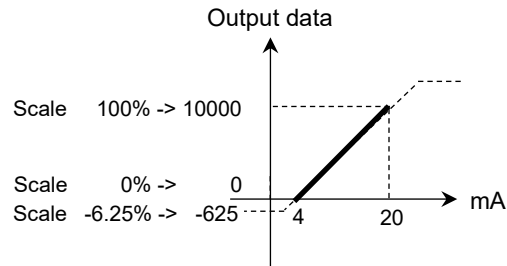
Output data

Scale 100% -> 10000

Scale 0% -> 0
Scale -6.25% -> -625

4   20   mA

Output data			Current [mA]
%	Hexadecimal	Decimal	
110%	0x2AF8	11000	22
100%	0x2710	10000	20
0%	0x0000	0	4
Same as or less than -6.25%	0xFD8F	-625	Same as or less than 3

・Input range 1 to 5 V (Example of scale change)

Output data

Scale 100% -> 5000

Scale 20% -> 1000
Scale 15% -> 750

1   5   V
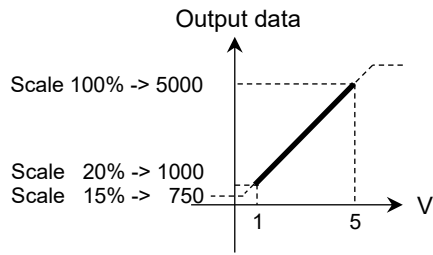
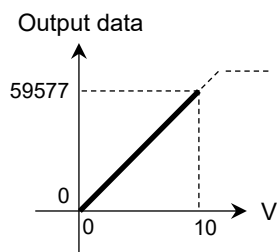| Output data			Voltage [V]
%	Hexadecimal	Decimal	
110%	0x157C	5500	5.5
100%	0x1388	5000	5
20%	0x03E8	1000	1
Same as or less than 15%	0x02EE	750	Same as or less than 0.75

・Input range 4 to 20 mA (Example of scale change)

Output data

Scale 100% -> 20000

Scale 20% -> 4000
Scale 15% -> 3000

4   20   mA
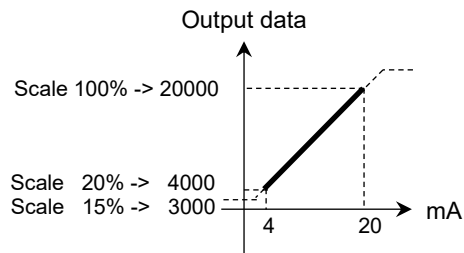
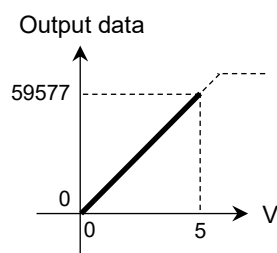| Output data			Current [mA]
%	Hexadecimal	Decimal	
110%	0x55F0	22000	22
100%	0x4E20	20000	20
20%	0x0FA0	4000	4
Same as or less than 15%	0x0BB8	3000	Same as or less than 3

(2) Offset binary format

It is possible to get the analog data more accurate than the scaled format by offset binary format.

The default setting is scaled format. Change the parameter Analog Data Format to Offset binary (0).

・Input range 0 to 10 V

Output data		Voltage [V]
Hexadecimal	Decimal	
0xFFFF	65535	11
0xE8B9	59577	10
0x0000	0	0

・Input range 0 to 5 V

Output data		Voltage [V]
Hexadecimal	Decimal	
0xFFFF	65535	5.5
0xE8B9	59577	5
0x0000	0	0

・Input range 1 to 5 V

Output data

58637	...
3449	...
0.75	

Output data (graph)

(Graph: X-axis "V" with markings at 0, 1, 5 and 0.75; Y-axis "Output data" with markings at 3449 and 58637)
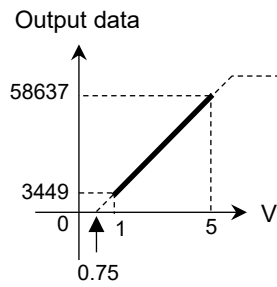
Output data		Voltage [V]
Hexadecimal	Decimal	
0xFFFF	65535	5.5
0xE50D	58637	5
0x0D79	3449	1
0x0000	0	0.75

・Input range 0 to 20 mA

(Graph: X-axis "mA" with markings at 0 and 20; Y-axis "Output data" with marking at 59577)
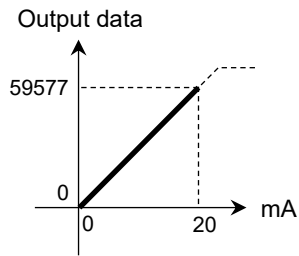
Output data		Current [mA]
Hexadecimal	Decimal	
0xFFFF	65535	22
0xE8B9	59577	20
0x0000	0	0

· Input range 4 to 20 mA
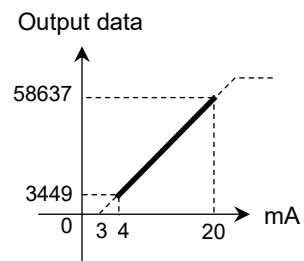
Output data

Output data		Current [mA]
Hexadecimal	Decimal	
0xFFFF	65535	22
0xE50D	58637	20
0x0D79	3449	4
0x0000	0	3

Specifications

Dimensions

○EXW1-RAXZA2C

	ADPTR	PORT1/2	PWR
	1:24V_Out	1:24V_Out	1:24V_In
	2:BUS B	2:AI1/AI3	2:N.C.
	3:0V	3:0V	3:0V
	4:BUS A	4:AI0/AI2	4:N.C.
		5:FE	

100

90.8

5

6.4

20.8

15.3

2×M4 mounting holes

2×(R)

4.5

60

20

Φ4.5

PWR MS W-SS W-NS AI0 AI1 AI2 AI3   ANALOG INPUT
PORT1   PORT2

WIRELESS REMOTE

FN

ADPTR   PORT1   PORT2   PWR

FN button

Wireless adaptor connector

PORT1(AI0,AI1)

PORT1(AI2,AI3)

FE terminal

Power Connector
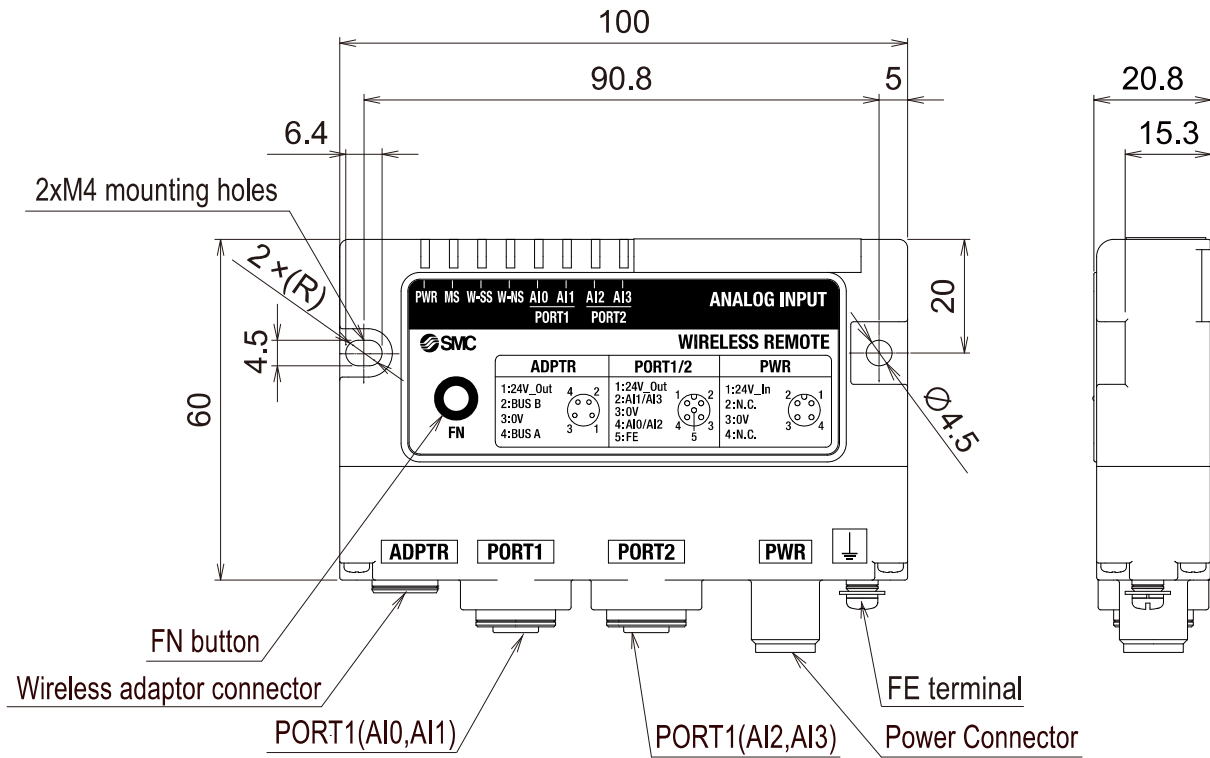
○EXW1-A11*

・Wireless Adaptor

12.5   77.3
8.8
1.2
φ10.5
19.4
M8x1
M10x0.75
LED display

Product label
18.5
5
8
EXW1-A11
Connector

・Installation Plate

2xφ4.2
4xφ3.2
100
90.4
45
20
9
9

24
8
20
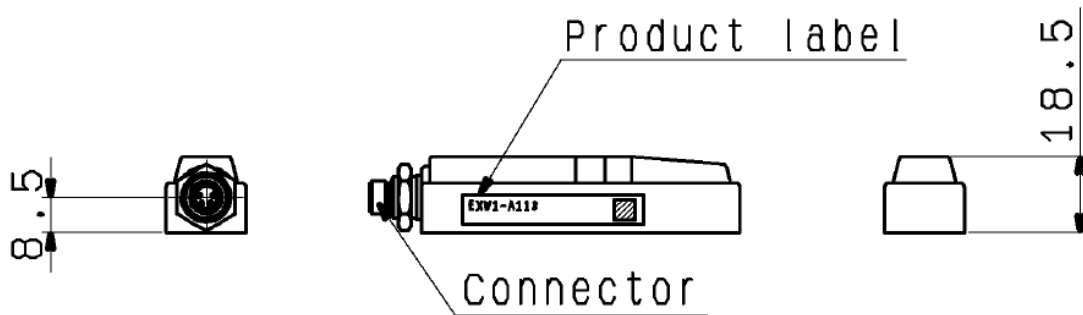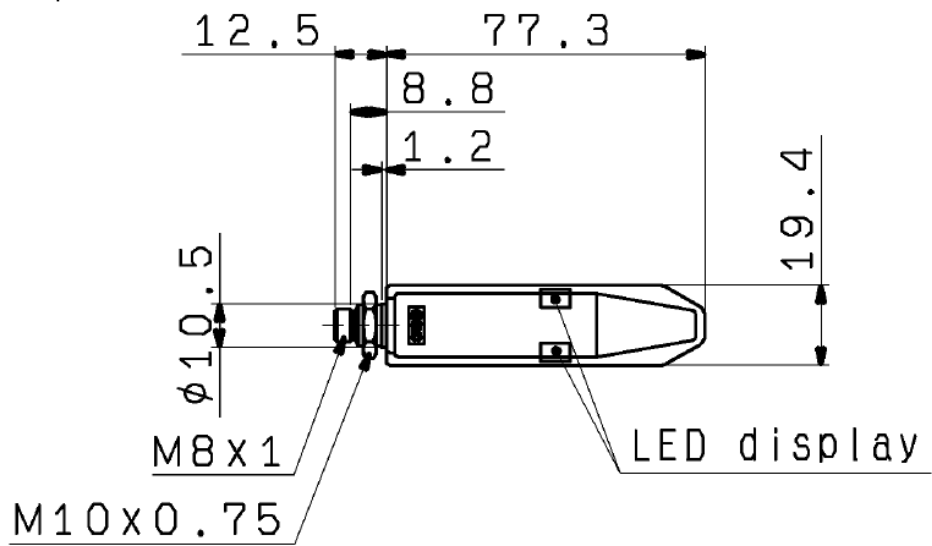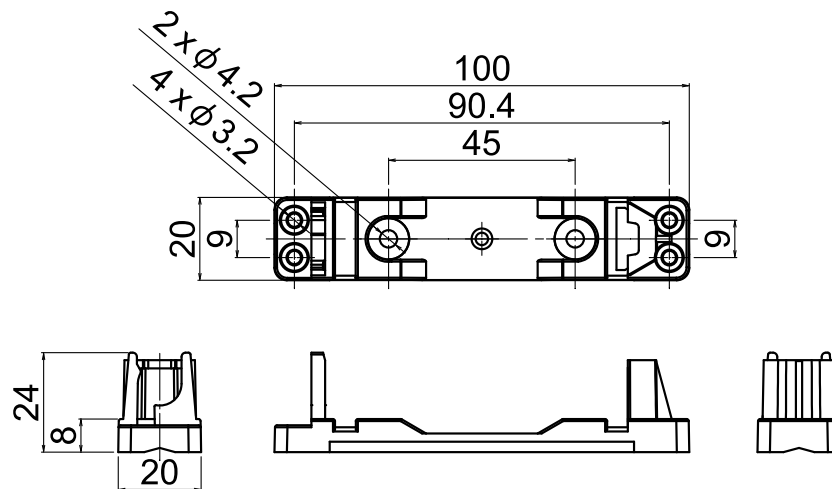
Specifications

○EXW1-RAX*

Electrical specifications

Item	Specification	
Input type	Voltage input type	Current input type
Power supply voltage range	24 VDC+/-10 %	
Current consumption	50 mA or less	
Input connector	M12 connector (5 pin) Socket[*1]	
Number of inputs points	4 points (2 points / Connector)	
Max.sensor supply current	0.5 A / Connector　(1 A / Unit)	
Protective function	Short circuit protection	
Input signal range	0 to 10V, 1 to 5V, 0 to 5V	0 to 20mA, 4 to 20mA
Resolution	16 bits	
Max. rated input signal	+15V	+40mA
Input impedance	220 kΩ	240 Ω
Linearity(25 ºC)	±0.05%F.S. or less	
Repeatability(25 ºC)	±0.15%F.S. or less	
Accuracy(25 ºC)	±0.5%F.S. or less	±0.6%F.S. or less

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

General specifications

Item	Specification
Enclosure	IP67[*1]
Ambient operating temperature	-10 to +55ºC
Ambient storage temperature	-20 to +60ºC
Ambient humidity	35 to 85% RH (no condensation)
Withstand voltage	1000 VAC 1.0 min. External terminals (including the FE terminal) and enclosure screws
Insulation resistance	10 MΩ or more 500 VDC External terminals (including the FE terminal) and enclosure screws
Vibration resistance	EN61131-2 compliant 5≦f<8.4 Hz 3.5 mm 8.4≦f<150 Hz 9.8 m/s2
Impact resistance	EN61131-2 compliant, 147 m/s2, 11 ms
Mounting	Through hole for M4 screw (2 pcs.)
Standards	CE/UKCA marked, UL(CSA)
Weight	150 g (body),

＊1: All unused connectors must have a seal cap fitted.

○EXW1-A11*

Electrical specifications

Item	Specification
Power supply voltage range	24 VDC+/-10 %
Current consumption	50 mA or less

General specifications

Item	Specification
Enclosure	IP67
Ambient operating temperature	-10 to +50ºC
Ambient storage temperature	-20 to +60ºC
Ambient humidity	35 to 85% RH (no condensation)
Vibration resistance	EN61131-2 compliant 5≦f<8.4 Hz 3.5 mm 8.4≦f<150 Hz 9.8 m/s2
Impact resistance	EN61131-2 compliant, 147 m/s2, 11 ms
Standards	CE/UKCA marked, UL (CSA)
Weight	40 g (body), 20 g (installation plate)

Wireless communication specifications

Item	Specification
Protocol	SMC original protocol (SMC encryption)
Radio wave type (spread)	Frequency Hopping Spread Spectrum (FHSS)
Frequency band	2.4 GHz (2403 to 2481 MHz)
Frequency channel select function (F.C.S.)	Supported [1]
Frequency channel	Max. 79 ch (Bandwidth: 1.0 MHz)
Communication speed	250 kbps(V.1.0) / 1 Mbps(V.2.0) [2]
Frequency hopping cycle	5ms(V.1.0) / 2ms(V.2.0)
Communication distance	Up to 100 m line of sight (depending on the environment)
Radio Law certificate	Refer to the official SMC website for the latest information as to which countries the product is certified.

*1: The number of selectable frequency channels varies depending on the product number.
*2: Select a protocol before performing pairing (V.2.0: 1 Mbps, V.1.0: 250 kbps). Different communication speeds are mutually incompatible.

Accessories

Accessory List

For the selection of accessories, refer to the catalog.

(1) Power supply cables
    EX500-AP010-S: Cable with M12 connector, A code, Socket, Straight 1 m
    EX500-AP050-S: Cable with M12 connector, A code, Socket, Straight 5 m
    EX500-AP010-A: Cable with M12 connector, A code, Socket, Angle 1 m
    EX500-AP050-A: Cable with M12 connector, A code, Socket, Angle 5 m

(2)Analog signal cables
    EX9-AC005-SSPS: Cable with M12 connector, Socket, Plug, Straight 0.5 m
    EX9-AC010-SSPS: Cable with M12 connector, Socket, Plug, Straight 1.0 m
    EX9-AC020-SSPS: Cable with M12 connector, Socket, Plug, Straight 2.0 m
    EX9-AC030-SSPS: Cable with M12 connector, Socket, Plug, Straight 3.0 m
    EX9-AC050-SSPS: Cable with M12 connector, Socket, Plug, Straight 5.0 m
    EX9-AC100-SSPS: Cable with M12 connector, Socket, Plug, Straight 10.0 m
    EX9-AC010-7: Cable with M12 connector on one side, Plug, Loose wires, Straight 1.0 m
    EX9-AC030-7: Cable with M12 connector on one side, Plug, Loose wires, Straight 3.0 m

(3) Analog signal cable Y connector
    EXW1-ACY2

(4) Seal cap (10 pcs.)
    EX9-AWTS: For M12

(5) Wireless adaptor cable
    EXW1-AC001-SAPU: 100mm cable with M8 connector on both sides U-shaped angle
    EXW1-AC030-SSPS: 3000mm cable with M8 connector on both sides straight
    EXW1-AC1-X1: 300mm cable with M8 connector on both sides

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