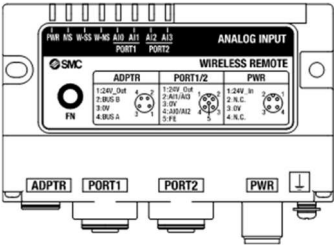




ORIGINAL INSTRUCTIONS

Instruction Manual
SMC Wireless System - Compact Remote
Series EXW1-RAXZA2C



The intended use of this product is to provide a connection from the SMC wireless communication system to pneumatic devices.

1 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)^{*)}, and other safety regulations.

- *) 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.

- Keep this manual in a safe place for future reference.

- Refer to the product catalogue, Operation Manual and Handling Precautions for SMC Products for additional information.

	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

- **Always ensure compliance with relevant safety laws and standards.**
All work must be carried out in a safe manner by a qualified person in compliance with applicable national regulations.

2 Specifications

2.1 General specifications

Item	Specification
Enclosure rating	IP67
Ambient operating temperature	-10 to +55°C
Ambient storage temperature	-20 to +60°C
Ambient humidity	35 to 85% RH (no condensation)
Withstand voltage	500 VAC for 1 minute between external terminals (including the FE terminal) and enclosure screws
Insulation resistance	10 MΩ or more (500 VDC between 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/s ²
Impact resistance	EN61131-2 compliant: 147 m/s ² , 11 ms
Weight (EXW1-RA# + A11#)	150 g + 40 g

2 Specifications (continued)

2.2 Electrical specifications

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

*1: An M12 connector (4 pin) can also be connected,FE is not connected.

2.3 EXW1-A11# wireless adaptor specifications

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

2.4 Wireless Communication specifications

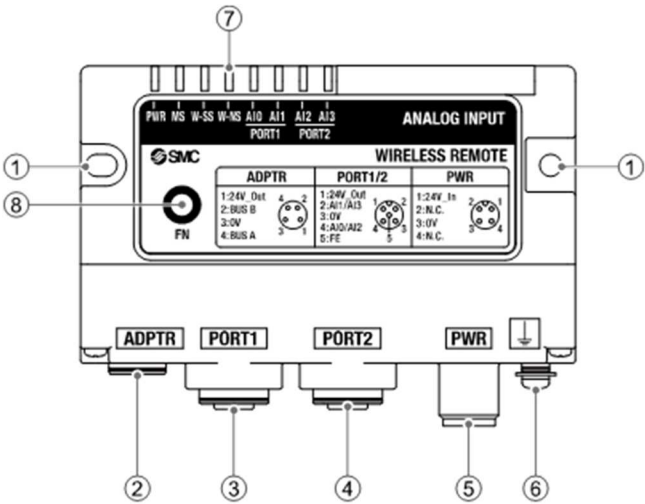
Item	Specifications
Protocol	SMC original protocol (SMC encryption)
Radio wave type (spread)	Frequency Hopping Spread Spectrum (FHSS)
Frequency band	2.4 GHz (2403 to 2481 MHz)
Frequency channel select function (F.C.S.)	Supported *1
Frequency channel	79 ch max. (Bandwidth: 1.0 MHz)
Communication speed	250 kbps (v1.0) / 1 Mbps (v2.0) *2
Frequency hopping cycle	5 ms (v1.0) / 2 ms (v2.0)
Communication distance	Up to 100 m line of sight (depending on the environment)
Radio Law certificates	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 (v2.0: 1 Mbps, v1.0: 250 kbps). Different communication speeds are mutually incompatible.

3 Name and Function of parts

- EXW1-RAXZA2C



No.	Name	Application
1	Mounting hole	Mounting holes for compact wireless remote (2 x M4).
2	ADPTR Connector	Connector for wireless adaptor cable.
3	PORT1 Connector	Connector for analog input device.
4	PORT2 Connector	Connector for analog input device.
5	PWR Power supply connector	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 analog input device.
8	FN (Pairing button)	Press the button to select pairing mode.

- EXW1-A11# (Wireless Adaptor)



No.	Name	Application
1	Connector	Connector for Wireless Adaptor cable.
2	Nut	For mounting.
3	LED display	Indicates the status of the adaptor.

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

- **Ground connection**

The Ground connection to the FE terminal should be as close as possible to the product and the grounding wire should be as short as possible.

4 Installation

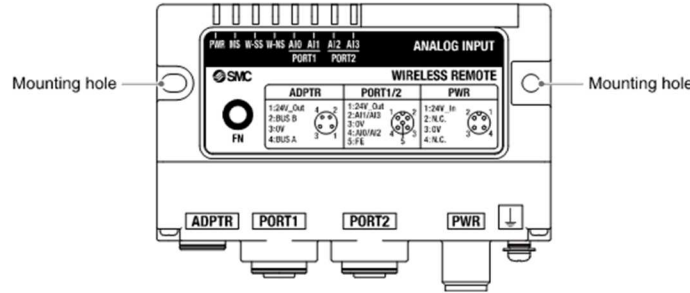
4.1 Installation

Warning

- Do not install the product unless the safety instructions have been read and understood.

4.2 Mounting the Compact Remote unit

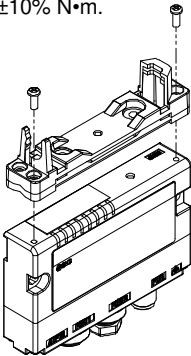
- Mount the unit with M4 screws (not supplied) using the 2 mounting holes in the unit (Recommended torque: 0.8 ±10% N•m).



4.3 Mounting the Wireless Adaptor (EXW1-A11#)

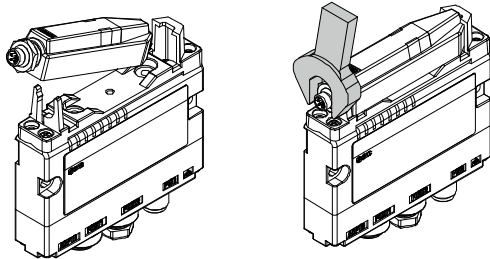
- **Integrated type (installation)**

- (1) Connection of the remote and installation plate.
Secure the installation plate to the remote using the two self-tapping screws (M3 x 8) included with the wireless adaptor. The tightening torque should be 0.4 ±10% N•m.



- (2) Installation of wireless adaptor

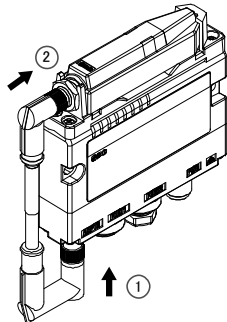
Clip the wireless adaptor onto the installation plate as shown below and secure the adaptor in place using the M10 nut already fitted to the wireless adaptor. The recommended tightening torque is 0.9 ± 10% N•m.



- (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 to the remote.
2) Connect the S-side connector of the cable to the adaptor.



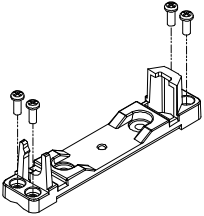
4 Installation (continued)

• Mounting on a flat surface

- (1) Attachment of installation plate
Attach the installation plate in the required location using either of the following two methods.

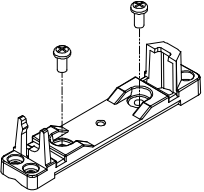
Installation using M3 screws x 4 positions

The recommended tightening torque is 0.4 ± 10% N·m (screws are not included).



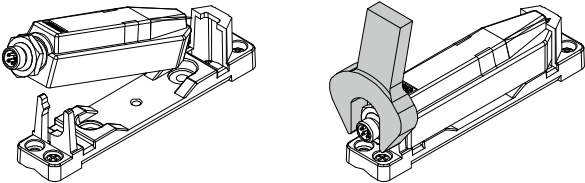
Installation using M4 screws x 2 positions

The recommended tightening torque is 0.6 ± 10% N·m (screws are not included).



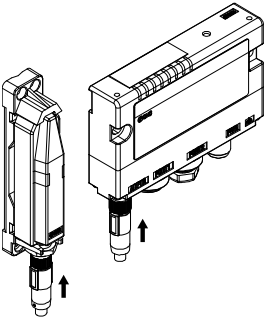
- (2) Installation of wireless adaptor

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 recommended tightening torque is 0.9 ± 10% N·m.



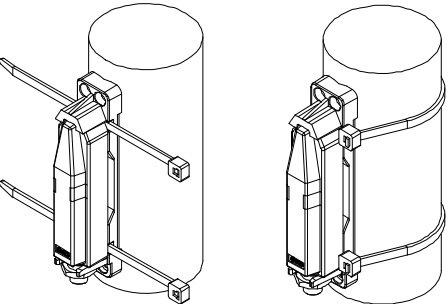
- (3) Connection of the cable for wireless adaptor

Connect the cable between the compact remote and the wireless adaptor.



• Mounting on a curved surface

- (1) Thread 2 x cable ties through the installation plate at the top and bottom.
(2) Secure the wireless adaptor to the installation plate and then secure in the required position by tightening the cable ties.



4 Installation (continued)

4.4 Environment



Warning

- Do not use in an environment where corrosive gases, chemicals, salt water or steam are present.
- Do not use in an explosive atmosphere.
- Do not expose to direct sunlight. Use a suitable protective cover.
- Do not install in a location subject to vibration or impact in excess of the product specifications.
- Do not mount in a location exposed to radiant heat that would result in temperatures in excess of the product's specifications.

5 Wiring

5.1 Wiring Connections

Always perform wiring with the power supply turned OFF.

- Power supply connector (PWR)

No.	Signal	Description	M12, 4-pin, plug A code
1	24 V _{In}	24 VDC : Input	
2	N.C	N.C	
3	0 V	0 VDC	
4	N.C	N.C	

- Communication connector for analog input device (PORT1/PORT2)

No.	Signal	Description	M12, 5-pin, socket A code
1	24 V _{Out}	24 VDC : Output	
2	AI1/AI3	Analog Input	
3	0 V	0 VDC	
4	AI0/AI2	Analog Input	
5	FE	FE	

- Connector for wireless adaptor (ADPTR)

No.	Signal	Description	M8, 4-pin, socket
1	24V _{Out}	24 VDC : Output	
2	Internal BUS B	Communication B	
3	0V	0VDC	
4	Internal BUS A	Communication A	



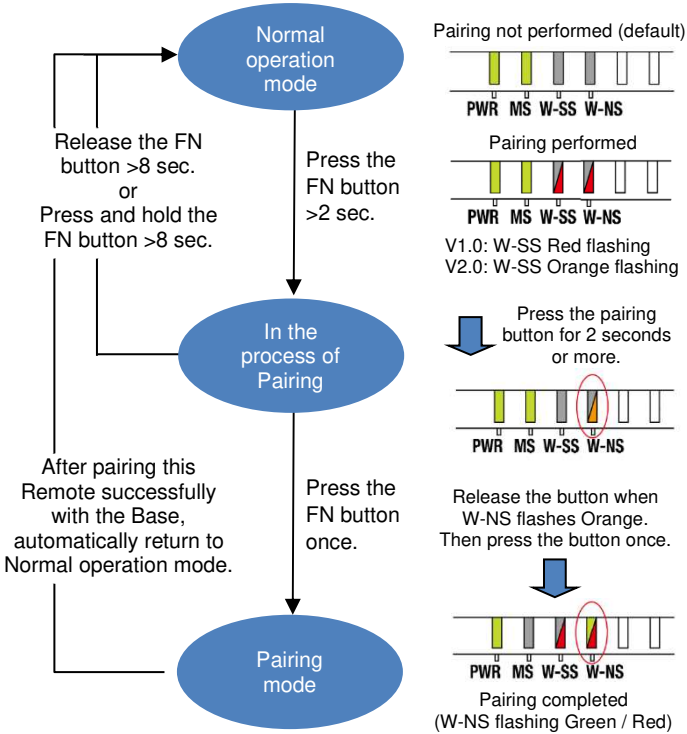
Caution

- Use the dedicated wireless adaptor cable to connect the compact wireless remote to the wireless adaptor.

6 Setting

6.1 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 for the product in use for further details.
- The EXW1-RA* series compact remote does not support the NFC and the default mode is pairing mode. The operating mode can be changed from pairing mode to operating mode using the FN button.



7 LED Display

7.1 The LED indicators on the Compact Wireless Remote indicate the power supply, communication and diagnostic status.

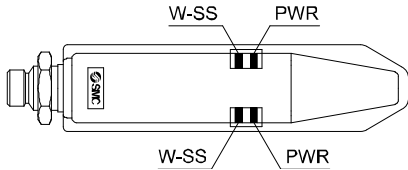


LED	LED status	Operation
PWR	Green LED ON	Power supply is ON.
	OFF	Power supply is OFF.
MS	Green LED ON	Operating normally.
	Green LED flashing	Power supply voltage level is abnormal. (Power Supply voltage monitor is valid)
	Red LED flashing	Recoverable error is detected. • Wireless adaptor internal connection error.(during operations)
	Red LED ON	Unrecoverable error is detected.
	OFF	• Power supply is OFF. • Wireless adaptor is disconnected. (when power is supplied)
W-SS	Green LED ON	The level of received radio wave power is 3.
	Green LED flashing (1 Hz)	The level of received radio wave power is 2.
	Green LED flashing (2 Hz)	The level of received radio wave power is 1.
	Red LED flashing	Base that support protocol V.1.0 is not connected.
	Orange LED flashing	Base that support protocol V.2.0 is not connected.
	OFF	• Power supply is OFF. • Base not registered.

LED	LED status	Operation
W-NS	Green LED ON	Base connected correctly.
	Red LED flashing	Base not connected.
	Red LED ON	Base not connected . (Unrecoverable error in wireless communication)
	Red / Green flashing	Wireless communication connection is being configured. (pairing)
	Orange LED ON	Forced ON mode. (System in forced ON mode)
	OFF	• Power supply is OFF. • Base not registered.
AI0 AI1 AI2 AI3	Green LED ON	Operating normally.
	Red LED flashing (1 Hz)	Power supply short circuit detection.
	Orange LED ON	Input signal range upper and lower limits exceeded.
	Orange LED flashing	User setting upper and lower limits exceeded.
	OFF	Power supply is OFF.

7 LED Display (continued)

7.2 The LED indicators on the Wireless Adaptor (EXW1-A11#) indicate the power supply, communication and diagnostic status.



LED	LED status	Operation
PWR	Green LED ON	Power supply voltage is ON.
	Orange LED flashing	An internal communication error is detected.
	Red LED ON	Unrecoverable error is detected.
	OFF	Power supply voltage is OFF.
W-SS	Green LED ON	The level of received radio wave power is 3.
	Green LED flashing (1 Hz)	The level of received radio wave power is 2.
	Green LED flashing (2 Hz)	The level of received radio wave power is 1.
	Red LED flashing	Base that support protocol V.1.0 is not connected.
	Orange LED flashing	Base that support protocol V.2.0 is not connected.
	OFF	Base is not registered.

8 How to Order

Refer to the Operation manual or catalogue on the SMC website (URL: <https://www.smcworld.com>) for How to Order information.

9 Outline Dimensions (mm)

Refer to the Operation manual or catalogue on the SMC website (URL: <https://www.smcworld.com>) for Outline dimensions.

10 Maintenance

10.1 General Maintenance



Caution

- Not following proper maintenance procedures could cause the product to malfunction and lead to equipment damage.
- If handled improperly, compressed air can be dangerous.
- Maintenance of pneumatic systems should be performed only by qualified personnel.
- Before performing maintenance, turn off the power supply and be sure to cut off the supply pressure. Confirm that the air is released to atmosphere.
- After installation and maintenance, apply operating pressure and power to the equipment and perform appropriate functional and leakage tests to make sure the equipment is installed correctly.
- If any electrical connections are disturbed during maintenance, ensure they are reconnected correctly and safety checks are carried out as required to ensure continued compliance with applicable national regulations.
- Do not make any modification to the product.
- Do not disassemble the product, unless required by installation or maintenance instructions.

11 Limitations of Use

11.1 Limited warranty and Disclaimer/Compliance Requirements

Refer to Handling Precautions for SMC Products.

NOTE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction 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.

• Influence of radio frequency on implantable medical devices:

The radio frequency generated by this product may give an adverse effect on implantable medical devices, such as implantable cardiac pacemakers and implantable cardioverter defibrillators. Please read catalogues or instruction manuals of the equipment and device which may be affected by radio frequencies for any instructions for use or contact their manufacturers.

12 Product Disposal

This product shall not be disposed of as municipal waste. Check your local regulations and guidelines to dispose of this product correctly, in order to reduce the impact on human health and the environment.

13 Contacts

Refer to www.smcworld.com or www.smc.eu for your local distributor / importer.

SMC Corporation

URL: <https://www.smcworld.com> (Global) <https://www.smceu.com> (Europe)
SMC Corporation, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, Japan
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