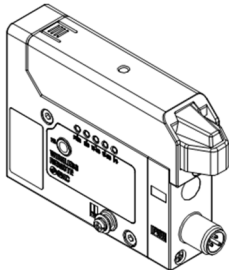




ORIGINAL INSTRUCTIONS

Instruction Manual

SMC Wireless System - Compact Remote  
Series EXW1-RDY#M5C-#



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)<sup>\*)</sup>, 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: Robotics - Safety requirements - Part 1: Industrial robots.

- Refer to product catalogue, Operation Manual and Handling Precautions for SMC Products for additional information.
- Keep this manual in a safe place for future reference.

	<b>Danger</b>	Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
	<b>Warning</b>	Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
	<b>Caution</b>	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 <sup>2</sup>
Impact resistance		EN61131-2 compliant: 147 m/s <sup>2</sup> , 11 ms
Weight	EXW1-RDY#M5	140 g
	EXW1-RDY#M5C-#	200 g

2 Specifications (continued)

2.2 Electrical specifications

Item		Specification
For Control and input (US1)	Operating voltage	24 VDC +/-10 %
	Internal current consumption	50 mA or less (at 24 VDC)
For Output (US2) <sup>*1</sup>	Operating voltage	24 VDC +/-10 %
	Max. current	2 A

\*1: This is the power supply voltage for the SI unit. Refer to the operation manual for the solenoid valve for the solenoid valves specifications.

2.3 Solenoid valve specifications

Item		Specification
Applicable valve series		SY3000,5000,7000 JSY1000,3000,5000 VQC1000,2000,4000,5000
Valve output	Maximum output points	32
	Output type	Source / PNP    Sink / NPN
	Connected load	24 VDC and 1.5 W solenoid valve with surge voltage suppressor (manufactured by SMC)
	Protection	Short circuit protection

2.4 EXW1-A11# wireless adapter specifications

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

2.5 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 <sup>*1</sup>
Frequency channel	79 ch max. (Bandwidth: 1.0 MHz)
Communication speed	250 kbps (V1.0) / 1 Mbps (V2.0) <sup>*2</sup>
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.

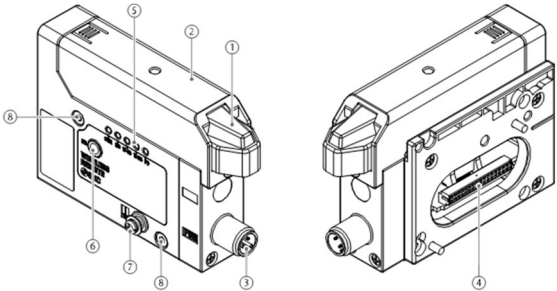
\*1: The number of selectable frequency channels varies depending on the product number.

\*2: Select a protocol before performing pairing (V2.0: 1 Mbps, V1.0: 250 kbps). Different communication speeds are mutually incompatible.

2 Specifications (continued)

2.6 Name and function of parts

- EXW1-RDY#M5C-#



No.	Name	Application
1	Wireless adapter	Performs wireless communication. (Factory installed if the wireless adapter option is selected in the order code)
2	Wireless adapter cover <sup>*1</sup>	Secures the wireless adapter. (Factory installed if the wireless adapter option is selected in the order code)
3	PWR Power supply connector	Supplies power to the compact wireless remote.
4	Output connector	Output connection for valve manifold.
5	LED indicator	Indicates the status of the compact wireless remote and Outputs.
6	FN (Pairing button)	Press the button to select pairing mode.
7	FE terminal <sup>*2</sup>	To be connected to Ground (for improved noise immunity).
8	Mounting hole	Mounting hole for connection to the valve manifold.

\*1: Be sure to mount the wireless adapter cover if the wireless adapter is directly installed.

\*2: Grounding should be as close as possible to the product and the grounding wire should be as short as possible.

- EXW1-A11#



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

2 Specifications (continued)

2.7 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 (US1)	24 VDC (US1): Input	
2	24 V (US2)	24 VDC (US2): Input	
3	0 V (US1)	0 VDC (US1)	
4	0V (US2)	0 VDC (US2)	

- Connector for wireless adapter

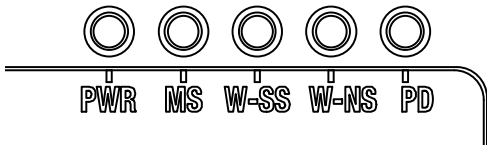
No.	Signal	Description	M8, 4-pin, socket
1	24V Out	24 VDC: Output	
2	Internal BUS B	Communication B	
3	0 V	0 VDC	
4	Internal BUS A	Communication A	

**Caution**

- For cabled installation, connect the compact wireless remote control to the wireless adapter using the dedicated wireless adapter cable.

2.8 LED Display (For EXW1-RDY#M5C)

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



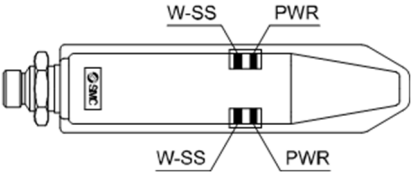
LED	LED status	Operation
PWR	Green LED ON	US1 (for control and input) power supply is ON.
	Green LED flashing	US2 (for output) power supply voltage level is abnormal.
	OFF	US1 (for control and input) power supply is OFF.
MS	Green LED ON	Operating normally.
	Green LED flashing	US1 (for control and input) power supply voltage level is abnormal.
	Red LED flashing	Recoverable error is detected. (LED flashes when more than one diagnostic information item is detected.) - ON/OFF Counter Limit Detection. - US1 (for control and input) power supply short circuit detection. - US2 (for output) power supply short circuit detection. - Open Circuit Detection. - Wireless adapter internal connection error.
	Red LED ON	Unrecoverable error is detected.
	OFF	- US1 (for control and input) power supply is OFF. - Wireless adapter is disconnected.

2 Specifications (continued)

LED	LED status	Operation
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 supports protocol V.1.0 is not connected.
	Orange LED flashing	Base that supports protocol V.2.0 is not connected.
	OFF	- US1 (for control and input) power supply is OFF. - Wireless adapter is disconnected.
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	- US1 (for control and input) power supply is OFF. - Wireless adapter is disconnected.
PD	Green LED ON	Blinks twice when output state changes (twice per second) Displays all 32 points in OR.
	OFF	Valve output maintained (no change).

2.9 LED Display (For EXW1-A11#)

The LED indicators on the Wireless Adapter 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 supports protocol V.1.0 is not connected.
	Orange LED flashing	Base that supports protocol V.2.0 is not connected.
	OFF	Base is not registered.

Warning

Special products (-X) might have specifications different from those shown in this section. Contact SMC for specific drawings.

3 Installation

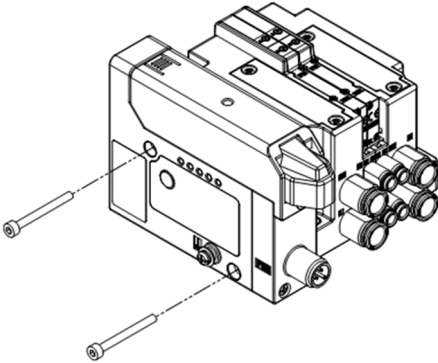
3.1 Installation

Warning

- Do not install the product unless the safety instructions have been read and understood.
- Assemble the remote unit to the valve manifold using the 2 screws supplied (Hexagon socket wrench size 3 mm).
- Tighten the screws while holding the remote unit and the valve manifold so that there is no gap between them.
- Tighten the screws with the tightening torque specified: 0.6 N•m. For a protection rating of IP67 to be ensured, apply the recommended tightening torque.
- Install the valve manifold before turning on the power to the remote unit.

3.2 Assembly Precautions

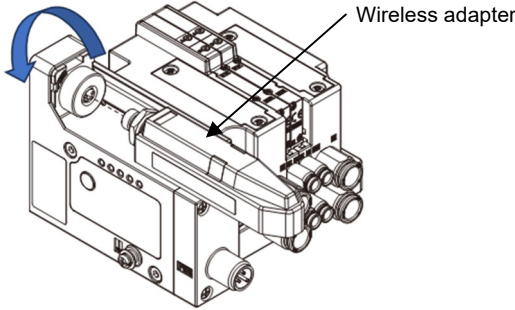
- Be sure to switch OFF the power.
- Check there is no foreign matter inside the remote unit.
- Check there is no damage and no foreign matter stuck to the gasket.



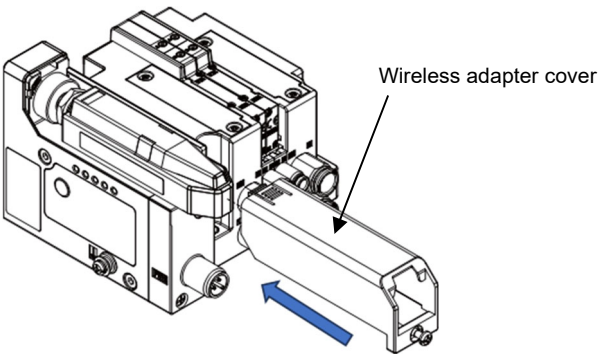
3.3 Mounting the Wireless Adapter (EXW1-A11#)

- Direct mounting

(1) Attach the wireless adapter to the product.



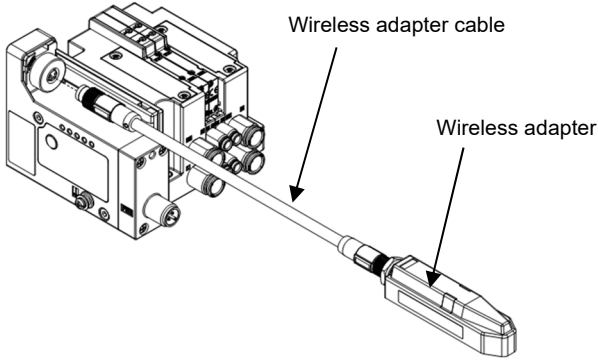
(2) Secure the wireless adapter cover using a screw. The recommended tightening torque is 0.3 N•m.



3 Installation (continued)

- Mounting the wireless adapter cable

Connect the wireless adapter cable and the wireless adapter to the product.



3.4 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's specifications.
- Do not mount in a location exposed to radiant heat that would result in temperatures in excess of the product specifications.

3.5 Piping

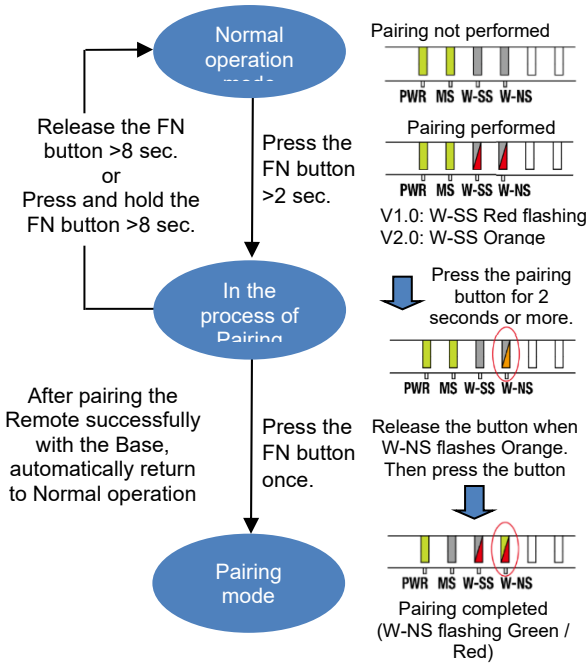
Caution

- Before connecting piping make sure to clean up chips, cutting oil, dust etc.
- When installing piping or fittings, ensure sealant material does not enter inside the port. When using seal tape, leave 1 thread exposed on the end of the pipe/fitting.
- Tighten fittings to the specified tightening torque.

4 Settings

4.1 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-RDY# 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.



5 How to Order

Refer to drawings or catalogue for 'How to Order'.

6 Outline Dimensions

Refer to drawings or catalogue for outline dimensions.

7 Maintenance

7.1 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.

8 Limitations of Use

8.1 Limited warranty and disclaimer/compliance requirements

Refer to Handling Precautions for SMC Products.

Caution

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.

9 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.

10 Contacts

Refer to [www.smcworld.com](http://www.smcworld.com) or [www.smc.eu](http://www.smc.eu) for your local distributor/importer.

SMC Corporation

URL : <https://www.smcworld.com> (Global) <https://www.smc.eu> (Europe)  
SMC Corporation, 1-5-5, Kyobashi, Chuo-ku, Tokyo 104-0031, JAPAN  
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