ORIGINAL INSTRUCTIONS

# Instruction Manual
## *Wireless System*
## *PROFINET compatible*
## *Series EX600-WPN# / EX600-WSV#*

The intended use of this product is to provide a connection from the PROFINET communication protocol to a pneumatic valve manifold or I/O system via wireless communication.

## 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) [*1)], and other safety regulations.

[*1)] ISO 4414: Pneumatic fluid power - General rules relating to systems.
ISO 4413: Hydraulic fluid power - General rules relating to systems.
IEC 60204-1: Safety of machinery - Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots -Safety. etc.

- 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.

| | |
|---|---|
| ⚠ **Caution** | Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury. |
| ⚠ **Warning** | Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury. |
| ⚠ **Danger** | Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious 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 Base specifications (EX600-WPN#)

| Models | | | EX600-WPN1 | EX600-WPN2 |
|---|---|---|---|---|
| Communication | Communication protocol | | PROFINET IO | |
| | Conformance class | | Class C (only for IRT switch function) | |
| | Transmission medium (cable) | | Standard Ethernet cable (CAT5 or higher, 100BASE-TX) | |
| | Transmission speed | | 100 Mbps | |
| | Configuration file | | GSDML file [*1] | |
| | FSU (Fast start up) | | Applicable | |
| | MRP (Media Redundancy Protocol) | | Applicable | |
| | Web server function | | Applicable | |
| Electrical | Control and input (US1) | Power supply voltage | 24 VDC ±10% | |
| | | Current consumption | 150 mA or less | |
| | Output (US2) | Power supply voltage | 24 VDC ±10% | |
| | | Max. supply current | 4 A | |

## 2 Specifications (continued)

| | | | | |
|---|---|---|---|---|
| Input / Output | Number of inputs | System input size | Max. 1280 points together with the registered remote | |
| | | Input size | Max. 128 points (increase or decrease by 16 points) | |
| | Number of outputs | System output size | Max. 1280 points together with the registered remote | |
| | | Output size | Max. 128 points (increase or decrease by 16 points) | |
| | Analogue input / output | AD refresh time | 10 ms or less (input connected to the base) 0.1/0.2/0.5/1/2/5/10/30/60 s (input connected to remote) | |
| | | DA refresh time | 10 ms or less (the output connected to the base) 0.1/0.2/0.5/1/2/5/10/30/60 s (output connected to remote) | |
| | Valve output | Output type | Source / PNP (-COM) | Sink / NPN (+COM) |
| | | Number of outputs | Max. 32 points (0/8/16/24/32 points) | |
| | | Connected load | Solenoid valve with surge voltage suppressor of 24 VDC and 1.5W or less (manufactured by SMC) | |
| | | Output condition at communication error | Clear / Hold / Software control | |
| | | Protection | Built-in short circuit prevention | |
| | Number of connected Remotes | | Maximum 31 pcs. (0 / 15 / 31 pcs.) | |
| | Number of connected EX600 I/O units | | Maximum 9 x EX600 I/O units (I/O = 128. I/O above 128 cannot be recognized) | |
| Wireless communication | Protocol | | SMC original protocol (SMC encryption) | |
| | Radio wave type (spread) | | Frequency Hopping Spread Spectrum (FHSS) | |
| | Frequency | | 2.4 GHz (2403 to 2481 MHz) | |
| | Frequency channel | | 79 ch (Bandwidth: 1.0 MHz) | |
| | Communication speed | | 250 kbps | |
| | Communication distance | | Within 10 m (depending on the operating environment) | |
| | Radio Law certificate | | Japanese radio law, RE [*2], FCC | |
| NFC [*3] | Communication standard | | ISO/IEC14443B (Type-B) | |
| | Frequency | | 13.56 MHz | |
| | Communication speed | | 20 to 100 kHz (I2C) | |
| | Communication distance | | Up to 1 cm | |
| Environmental | Enclosure rating | | IP67 (with manifold assembled) | |
| | Ambient operating temperature | | -10 to +50°C | |
| | Ambient storage temperature | | -20 to +60°C | |
| | Ambient humidity | | 35 to 85% RH (no condensation) | |
| | Withstand voltage | | 500 VAC-1 minute between external terminals and metallic parts | |
| | Insulation resistance | | 10 MΩ or more (500 VDC between external terminals and metallic parts) | |
| | Vibration resistance (excluding valve manifold) | | EN61131-2: 5 ≤ f < 8.4 Hz 3.5 mm 8.4 ≤ f < 150 Hz 9.8 m/s² | |
| | Impact resistance (excluding valve manifold) | | EN61131-2: 147 m/s², 11 ms | |
| Weight | | | 300 g | |

∗1: The GSDML configuration file can be downloaded from the SMC website: (URL: https://www.smcworld.com)

∗2: Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, U.K., Turkey. (as of March 2018)

∗3: The NFC communication RFID tag of the 13.56 MHz passive type.

## 2 Specifications (continued)

### 2.2 Remote specifications (EX600-WSV#)

| Models | | | EX600-WSV1 | EX600-WSV2 |
|---|---|---|---|---|
| Electrical | Control and input (US1) | Power supply voltage | 24 VDC ±10% | |
| | | Current consumption | 70 mA or less | |
| | Output (US2) | Power supply voltage | 24 VDC ±10% | |
| | | Max. current | 4 A | |
| Input / Output | Number of inputs | Input size | Max. 128 points (increase or decrease by 16 points) | |
| | Number of outputs | Output size | Max. 128 points (increase or decrease by 16 points) | |
| | AD / DA refresh time | | 0.1/0.2/0.5/1/2/5/10/30/60 s [*1] | |
| | Number of connected EX600 I/O units | | Maximum 9 x EX600 I/O units (I/O = 128. I/O above 128 cannot be recognized) | |
| | Valve output | Output type | Source / PNP (-COM) | Sink / NPN (+COM) |
| | | Number of outputs | Max. 32 points (0/8/16/24/32 points) | |
| | | Connected load | Solenoid valve with surge voltage suppressor of 24 VDC and 1.5W or less (manufactured by SMC) | |
| Wireless communication | Protocol | | SMC original protocol (SMC encryption) | |
| | Radio wave type (spread) | | Frequency Hopping Spread Spectrum (FHSS) | |
| | Frequency | | 2.4 GHz (2403 to 2481 MHz) | |
| | Frequency channel | | 79 ch (Bandwidth: 1.0 MHz) | |
| | Communication speed | | 250 kbps | |
| | Communication distance | | Within 10 m (depending on the operating environment) | |
| | Radio Law certificates | | Japanese radio law, RE [*2], FCC | |
| NFC [*3] | Communication standard | | ISO/IEC14443B (Type-B) | |
| | Frequency | | 13.56 MHz | |
| | Communication speed | | 20 to 100 kHz (I2C) | |
| | Communication distance | | Up to 1 cm | |
| Environmental | Enclosure rating | | IP67 (with manifold assembled) | |
| | Ambient operating temperature | | -10 to +50°C | |
| | Ambient storage temperature | | -20 to +60°C | |
| | Ambient humidity | | 35 to 85% RH (no condensation) | |
| | Withstand voltage | | 500 VAC-1 minute between external terminals and metallic parts | |
| | Insulation resistance | | 10 MΩ or more (500 VDC between external terminals and metallic parts) | |
| | Vibration resistance (excluding valve manifold) | | EN61131-2: 5 ≤ f < 8.4 Hz 3.5 mm 8.4 ≤ f < 150 Hz 9.8 m/s² | |
| | Impact resistance (excluding valve manifold) | | EN61131-2: 147 m/s², 11 ms | |
| Weight | | | 280 g | |

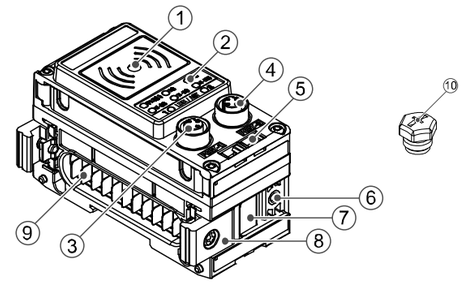
∗1: Varies depending on the wireless communication status and the surrounding environment.

∗2: Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, U.K., Turkey. (as of March 2018).

∗3: The NFC communication RFID tag of the 13.56 MHz passive type.

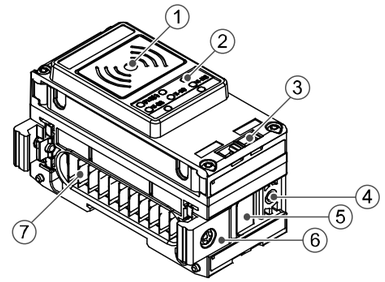
## 3 Name and Function of parts

- **Base module (EX600-WPN#)**




| No. | Item | Description |
|---|---|---|
| 1 | NFC antenna area | This area is for close contact with the NFC reader/writer. "O" marks the centre of the NFC antenna. |
| 2 | Status indication LED | LED display to indicate the unit status. |
| 3 | Connector (PORT-1) | Fieldbus input / output connection. |
| 4 | Connector (PORT-2) | Fieldbus input / output connection. |
| 5 | Marker groove | Marker (EX600-ZT1) can be mounted. |
| 6 | Valve plate mounting | Screw hole for mounting the valve plate. |
| 7 | Valve plate mounting groove | Groove to insert the valve plate. |
| 8 | Joint bracket | Bracket for mounting adjacent units. |
| 9 | Unit connector (plug) | Connector to transfer signals and power to the next unit. |
| 10 | Seal cap (1 pc.) | To be mounted on unused connectors (PORT 1 or 2). |

- **Remote module (EX600-WSV#)**




| No. | Item | Description |
|---|---|---|
| 1 | NFC antenna area | This area is for close contact with the NFC reader/writer. "O" marks the centre of the NFC antenna. |
| 2 | Status indication LED | LED display to indicate the unit status. |
| 3 | Marker groove | Marker (EX600-ZT1) can be mounted. |
| 4 | Valve plate mounting | Screw hole for mounting the valve plate. |
| 5 | Valve plate mounting groove | Groove to insert the valve plate. |
| 6 | Joint bracket | Bracket for mounting adjacent units. |
| 7 | Unit connector (plug) | Connector to transfer signals and power to the next unit. |

# 4 Installation

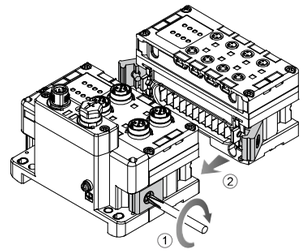
## 4.1 Installation

**Warning**

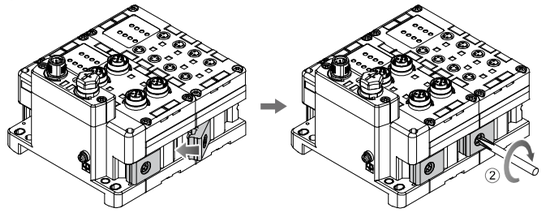
- Do not install the product unless the safety instructions have been read and understood.

- **Assembling the unit as a manifold**

(1) Connect a unit to the end plate.
Digital and analogue units can be connected in any order.
(Tightening torque: 1.5 to 1.6 N•m)



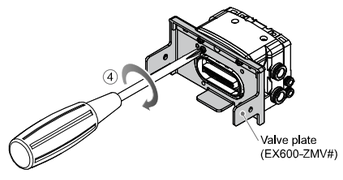
(2) Add more units.
Up to 9 units can be connected to one manifold.



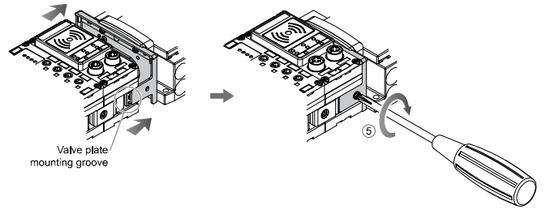
(3) Connecting the wireless unit
After connecting the required I/O units, connect the wireless unit.

The connection method is as above.
(4) Mounting the valve plate. (Valve manifold not connected)
Mount the valve plate (EX600-ZMV*) to the valve manifold using the set screws (M3 x 8) provided with the product. (Tightening torque: 0.6 to 0.7 N•m)

Screw mounting places
SV: 2 places
S0700: 2 places
VQC1000: 2 places
VQC2000: 3 places
VQC4000: 4 places
SY: 2 places

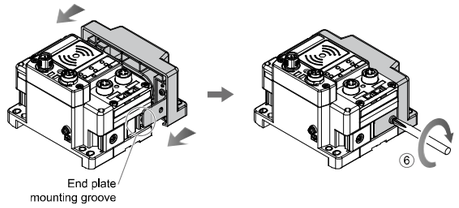



(5) Connect the wireless unit to the valve manifold.
Insert the valve plate into the valve plate mounting groove on the side of the wireless unit, and then fix both surfaces of the plate using the valve plate mounting screws (M4 x 6) provided with the product.
(Tightening torque: 0.7 to 0.8 N•m)



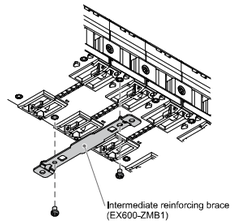

(6) When valve manifold is not connected.
Insert the end plate (EX600-EU1) into the valve plate mounting groove on the side of the wireless unit, and then fix both surfaces of the plate using the valve plate mounting screws (M4 x 6) provided with the product. (Tightening torque: 0.7 to 0.8 N•m)

# 4 Installation (continued)




- **Direct mounting**

(1) When joining six or more units, fix the middle part of the complete EX600 unit with an intermediate reinforcing brace (EX600-ZMB1) before mounting, using 2-M4 x 5 screws.
(Tightening torque: 0.7 to 0.8 N•m)

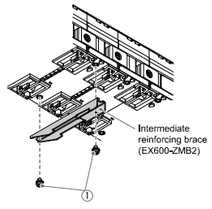


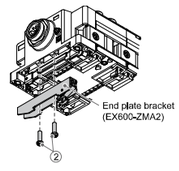

(2) Mount and tighten the end plate and the valve manifold (intermediate reinforcing brace if necessary) at one end of the unit. (M4)
(Tightening torque: 0.7 to 0.8 N•m)
Refer to the Operation Manual of the applicable valve manifold for the mounting method of the valve side.

- **DIN rail mounting**

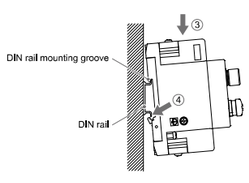
(1) When joining six or more units, fix the middle part of the complete EX600 unit with an intermediate reinforcing brace (EX600-ZMB2) for DIN rail before mounting, using 2-M4 x 6 screws.
(Tightening torque: 0.7 to 0.8 N•m)

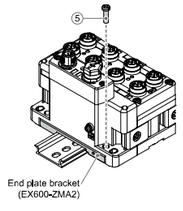
(2) Mount the end plate bracket (EX600-ZMA2) to the end plate using 2-M4 x 14 screws.
(Tightening torque: 0.7 to 0.8 N•m) For the SY series, use the end plate bracket (EX600-ZMA3).




(3) Hook the DIN rail mounting groove on to the DIN rail.
(4) Press the manifold using its side hooked to the DIN rail as a fulcrum until the manifold is locked.
(5) Fix the end plate bracket (EX600-ZMA2) to the manifold using the M4 x 20 screws provided with the product. (Tightening torque: 0.7 to 0.8 N•m)
Refer to the Operation Manual of the applicable valve manifold on the SMC website (URL: https://www.smcworld.com) for the mounting method of the valve side.

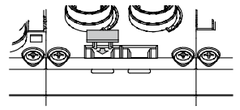



# 4 Installation (continued)

- **Mounting the marker**

The signal name of the input or output devices and unit address can be written on the marker and can be installed on each unit.
Mount the marker (EX600-ZT1) into the marker groove as required.



## 4.2 Wiring connections

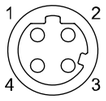
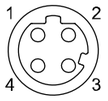
- **Connector (Base only)**

This system is operated using power supplied from the EX600-ED# end plate. Refer to the end plate details for the power supply connection.

The base is connected to the upper level communication (PROFINET). The connection has 2 ports, PORT-1 and PORT-2, and both ports can connect to Ethernet.
The PROFINET topology corresponds to star, line, tree and ring.

- **Communication Connector**

M12 4-pin Socket D code

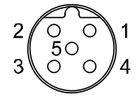
| Connector | | Pin No. | Signal name |
|---|---|---|---|
| PORT-1 | PORT-2 | | |
|  |  | 1 | TD+ |
| | | 2 | RD+ |
| | | 3 | TD- |
| | | 4 | RD- |



PROFINET connector of base

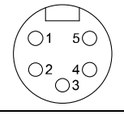
- **Power Supply Connector**

(1) EX600-ED2-#
PWR IN: M12 5-pin Plug B code

| Configuration | Pin No. | Signal name |
|---|---|---|
|  | 1 | 24 V (Output) |
| | 2 | 0 V (Output) |
| | 3 | 24 V (Control and Input) |
| | 4 | 0 V (Control and Input) |
| | 5 | F.E. |

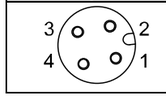


(2) EX600-ED3-#
PWR IN: 7/8 inch 5-pin Plug

| Configuration | Pin No. | Signal name |
|---|---|---|
|  | 1 | 0 V (Output) |
| | 2 | 0 V (Control and Input) |
| | 3 | F.E. |
| | 4 | 24 V (Control and Input) |
| | 5 | 24 V (Output) |

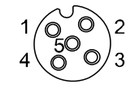


(3) EX600-ED4-#
PWR IN: M12 4-pin Plug A code

| Configuration | Pin No. | Signal name |
|---|---|---|
|  | 1 | 24 V (Control and Input) |
| | 2 | 24 V (Output) |
| | 3 | 0 V (Control and Input) |
| | 4 | 0 V (Output) |



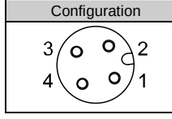
PWR OUT: M12 5-pin Socket A code

| Configuration | Pin No. | Signal name |
|---|---|---|
|  | 1 | 24 V (Control and Input) |
| | 2 | 24 V (Output) |
| | 3 | 0 V (Control and Input) |
| | 4 | 0 V (Output) |
| | 5 | Not used |



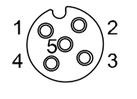
# 4 Installation (continued)

(4) EX600-ED5-#
PWR IN: M12 4-pin Plug A code

| Configuration | Pin No. | Signal name |
|---|---|---|
|  | 1 | 24 V (Output) |
| | 2 | 0 V (Output) |
| | 3 | 24 V (Control and input) |
| | 4 | 0 V (Control and input) |



PWR OUT: M12 5-pin Socket A code

| Configuration | Pin No. | Signal name |
|---|---|---|
|  | 1 | 24 V (Output) |
| | 2 | 0 V (Output) |
| | 3 | 24 V (Control and input) |
| | 4 | 0 V (Control and input) |
| | 5 | Not used |



## 4.3 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's specifications.

# 5 Settings

- Flow chart for using the wireless system

**Step 1 Preparation before use (PC, Application)**

(1) Install the NFC reader/ writer and drivers.

↓

(2) Install the I/O Configurator for NFC.

↓

**Step 2 Setting / installation of the wireless unit**

(1) Set the number of occupied I/O points for the module and each parameter of the "remote".

↓

(2) Set the number of occupied I/O points for the module and each parameter of the "base".
∗ Different from the I/O points of the whole system.

↓

(3) Set the "base" system.

↓

(4) Registration of remote base. (pairing)

↓

(5) I/O unit assembly.

↓

(6) Installation and wiring.

↓

**Step 3 Connection to PLC**

Note) Refer to the operation manual of the PLC manufacturer for connection to a PLC and Configurator.

With the above settings, it is possible to control the upper level controller.

Refer to the I/O Configurator for NFC operation manual and I/O Configurator (Web) operation manual on the SMC website (URL: https://www.smcworld.com) for details of the I/O Configurator.

## 6 LED Display

### 6.1 Base (EX600-WPN#)

| LED | LED Colour | Operation |
|---|---|---|
| PWR | Green LED ON. | Power supply voltage for control and input (US1) is normal.<br>Power supply voltage for output (US2) is normal. |
| | Red LED flashing | Power supply voltage for control and input (US1) is normal.<br>Power supply voltage for output (US2) is abnormal.<br>(Power Supply voltage monitor (Output) is valid). |
| | Red LED flashing | Power supply voltage for control and input (US1) is abnormal.<br>(Power Supply voltage monitor (Control / Input) is valid). |
| | OFF | Power supply voltage for control and input (US1) is not supplied. |
| SF | OFF | Base Normal operation |
| | Green LED flashing | Node flashing test command received |
| | Red LED flashing | Restorable error is detected<br>(LED flashes when more than one diagnostic information item is detected)<br>• Abnormal power supply voltage level for control and input (US1)<br>(Power Supply voltage monitor (Control / Input) is valid)<br>• Abnormal power supply voltage level for output (US2)<br>(Power Supply voltage monitor (Output) is valid)<br>• Excessive I/O setting inputs/outputs<br>• Analogue I/O upper and lower set limit exceeded<br>• Analogue Input range upper and lower limit exceeded<br>• Abnormal number of remote connections<br>• Error in communication between units<br>• EX600 I/O unit detects diagnostic information<br>• Valve diagnostic information detected |
| | Red LED ON | Non-restorable error is detected (e.g. hardware failure). |
| BF | OFF | PROFINET communication is established. |
| | Red LED flashing | PROFINET controller settings and EX600 configuration data do not match. |
| | Red LED ON | PROFINET communication is not established<br>• PROFINET controller power supply is OFF<br>• Cable connection error between PROFINET controller and base<br>• PROFINET controller or the base are faulty<br>• PROFINET controller settings and base Device name do not match |
| W-SS | Green LED ON | Received Radio wave intensity power level from all remote is 3 |
| | Green LED flashing (1 Hz) | There are connected remote with received power level 2. |
| | Green LED flashing (2 Hz) | There are connected remote with received power level 1. |
| | Red LED flashing | No remote connected. |
| | OFF | Remote is not registered. |

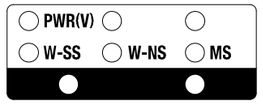
## 6 LED Display (continued)

| LED | LED Colour | Operation |
|---|---|---|
| W-NS | Green LED ON | All remote are connected correctly. |
| | Green LED flashing | There are unconnected remote. |
| | Red LED flashing | All remote are unconnected. |
| | Red LED ON | All remote are unconnected.<br>(non-restorable error in wireless communication) |
| | Red / Green | Wireless communication connection is under construction (Pairing) |
| | Orange LED ON | Forced output mode is ON |
| | OFF | Remote is not registered. |
| W-MS | Green LED ON | Remote status is normal. |
| | Red LED flashing | Restorable error is detected (LED flashes when more than one diagnostic information item is detected)<br>• Abnormal power supply voltage level for control and input (US1)<br>• Abnormal power supply voltage level for output (US2)<br>• Excessive I/O setting inputs/outputs<br>• Analogue I/O upper and lower set limit exceeded<br>• Analogue Input range upper and lower limit exceeded<br>• Error in communication between units<br>• EX600 I/O unit detects diagnostic information<br>• Valve diagnostic information detected |
| | Red LED ON | Non-restorable error is detected (e.g. Hardware failure) |
| | OFF | No remote connected. |
| LINK / ACT1<br>LINK / ACT2 | Green LED ON | Link, No Activity |
| | Green LED flashing | Link, Activity |
| | OFF | No Link, No Activity |

* If there are multiple conditions for LED ON / Flashing, the detailed information can be seen only when the setting of the diagnostic information is "Simple" or "Detailed".

## 6 LED Display (continued)

### 6.2 Remote (EX600-WSV#)




| LED | LED Colour | Operation |
|---|---|---|
| PWR (V) | Green LED ON | Power supply voltage for output (US2) is normal. |
| | Red LED flashing | Power supply voltage for output (US2) is abnormal (Indication only. The product can be operated).<br>(Power Supply voltage monitor (Output) is valid) |
| | OFF | Power supply for control and input (US1) is not supplied. |
| W-SS | Green LED ON | Received Radio wave intensity power level is 3. |
| | Green LED flashing (1 Hz) | Received power level is 2. |
| | Green LED flashing (2 Hz) | Received power level is 1. |
| | Red LED flashing | Wireless communication is not connected. |
| | OFF | Base is not registered. |
| W-NS | Green LED ON | Remote is connected correctly. |
| | Red LED flashing | No remote connected. |
| | Red LED ON. | No remote connected (non-restorable error in wireless communication) |
| | Red / Green | Wireless communication connection is under construction (Pairing) |
| | Orange LED ON | Forced output mode is ON |
| | OFF | Base is not registered. |
| MS | Green LED ON | Remote status is Normal. |
| | Red LED flashing | Restorable error is detected.<br>(LED flashes when more than one diagnostic information item is detected).<br>• Abnormal power supply voltage level for control and input<br>(Power Supply voltage monitor (Control / Input) is valid)<br>• Excessive I/O setting inputs / outputs<br>• Analogue I/O upper and lower set limit exceeded<br>• Analogue Input range upper and lower limit exceeded<br>• Error in communication between units<br>• EX600 I/O unit detects diagnostic information<br>• Valve diagnostic information detected |
| | Red LED ON. | Non-restorable error is detected (e.g. Hardware failure) |
| | OFF | Power supply for control and input (US1) is not supplied. |

* If there are multiple conditions for LED ON / Flashing, the detailed information can be seen only when the setting of the diagnostic information is "Simple" or "Detailed".

Refer to the Operation manual on the SMC website (URL: https://www.smcworld.com) for further LED Display details.

## 7 How to Order

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

## 8 Outline Dimensions (mm)

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

## 9 Maintenance

### 9.1 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.

- **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.

## 10 Limitations of Use

**10.1 Limited warranty and Disclaimer/Compliance Requirements**

Refer to Handling Precautions for SMC Products.

## 11 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.

## 12 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)
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