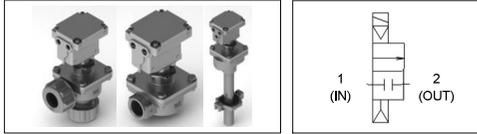


## Instruction Manual

### Pulse Valve SMARTVENT™ Type for Dust Collector

#### Series JSXF(E,F,H)-###-5P(B,R,P)-#



The intended use of this product is to provide a pulse of air in dust collector and similar systems.

## 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>(1)</sup>, and other safety regulations.  
<sup>(1)</sup> 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: Robots and robotic devices - Safety requirements for industrial robots - Part 1: 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>Caution</b>	Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate 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>Danger</b>	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.

### Caution

- The product is provided for use in manufacturing industries only. Do not use in residential premises.

## 2 Specifications

### 2.1 Valve specifications

Valve part number	Base valve	JSXF###-###-5(P/PB)B-##
	Remote valve	JSXF###-###-5PRB-##
Valve construction	Diaphragm type pilot operated	
Valve type	Normally closed (N.C.)	
Piping	JSXFE	Compression fitting <sup>Note 1)</sup>
	JSXFF	Direct piping
	JSXFH	Tank mounting (immersion) <sup>Note 2)</sup>
Fluid	Air	
Withstand pressure [MPa]	1.5	
Minimum operating pressure differential [MPa]	0.1	
Maximum operating pressure differential [MPa]	0.9	
Maximum system pressure [MPa]		
Fluid temperature [°C] <sup>Note 3)</sup>	-40 to 60 (no freezing and condensation)	
Ambient temperature [°C]		
Flow characteristics	Contact SMC	
Response time [ms]		

## 2 Specifications – continued

Duty cycle	≤5.5% (Max ON 234ms)
Minimum operating frequency	1 cycle / 30 days
Maximum operating frequency	Contact SMC
Lubrication	Not required
Impact/vibration resistance [m/s <sup>2</sup> ] <sup>Note 4)</sup>	150/30
Mounting orientation	Unrestricted
Enclosure <sup>Note 5)</sup> (based on IEC60529)	IP67
Weight	Refer to catalogue

Table 1.

- Note 1) Seals and washers included.  
 Note 2) Valve and piping packed together, unassembled.  
 Note 3) No condensation.  
 Note 4) Impact resistance: No malfunction occurred when it was tested with a drop tester in the axial direction and at right angles to the main valve and armature; in both energized and de-energized states and for every time in each condition (Values quoted are for a new valve).  
 Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Tests are performed at both energized and de-energized states in the axial direction and at right angles to the main valve and armature (Values quoted are for a new valve).  
 Note 5) The IP rating stated is achieved when the input hole is wired or plugged.

### 2.1.1 Orifice and tank size

Port size [inch]	3/4	1	1 1/2	2 <sup>Note 1)</sup>
Orifice, φ [mm]	32	40	JSXFE/F-50 JSXFH-45	55 <sup>Note 1)</sup>
Tank size ANSI [inch] <sup>Note 1)</sup>	4, 5	5, 6	6, 8	8, 10

Note 1) Only available for JSXFH models.

### 2.2 Solenoid specification

Rated voltage [V]	DC	24	
Electrical entry	Terminal block		
Coil insulation type	Class B		
Allowable voltage fluctuation	± 10% of rated voltage (See 3.6)		
Allowable leakage voltage	DC	≤ 2% of rated voltage	
Power consumption [W] <sup>Note 1)</sup>	18		
Current consumption	25 mA	15 mA <sup>Note 2)</sup>	
ON setting [ms]	Set range	100 to 234	-
	Minimum unit	Approx. 14 to 15	-
	How to set	Rotary switch	-
OFF setting [s]	Set range	4 to 29	-
	Minimum unit	Approx. 1	-
	How to set	Rotary switch	-
Valve connection <sup>Note 3)</sup>	1 pc	Max. 31 pcs	
Differential pressure sensor input	Applicable sensors [mA]	2-wire 4 to 20	-
	How to set	Rotary switch	-

Table 2.

Note 1) The power consumption stated is the value at an ambient temperature of 20°C and when the coil is turned on after the rated voltage is applied (deviation ±10%).

Note 2) The current consumption stated is the value for one remote valve. Current consumption increases as the number of valves increases.

Note 3) The same address can be assigned to up to two remote valves. Setting the same address to more than two remote valves may not operate properly. No base valve to base valve connection is allowed.

### 2.3 Special products

#### 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.

### 3.2 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.
- Products compliant with IP67 enclosures are protected against dust and water, however, these products cannot be used in water.
- Products compliant with IP67 enclosures satisfy the specifications by mounting each product properly. Be sure to read the Specific Product Precautions for each product.

### 3.3 Piping

#### Warning

- The compression fitting is used to seal the connection between the valve and the pipework. Do not rely on the compression fitting to support the piping as it could become detached. Ensure that inlet and outlet piping is secured with separate fixings.
- During use, deterioration of the tubes or damage to the fittings could cause the tubes to become loose from their fittings and thrash about. To prevent uncontrolled tube movement, install protective covers or fasten tubes securely in place.

#### 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.
- Avoid connecting ground lines to piping, as this may cause electric corrosion of the system.

- Use steel tubing for the inlet and outlet piping
- Tighten fittings to the specified tightening torque.

Connection thread	Tightening torque [N·m]
1/4	8 to 12
3/8	15 to 20
1/2	20 to 25
3/4	28 to 30
1	36 to 38
1 1/2	40 to 42

Table 3.

### 3.4 Fluid supply

#### Warning

- Use clean air. If the compressed air supply includes chemicals, synthetic materials (including organic solvents), salinity, corrosive gas, etc., it can lead to damage or malfunction.
- If there is a possibility of back pressure being applied to the valve, take countermeasures such as mounting a check valve on the downstream side of the valve.

#### Caution

- Compressed air that includes excessive drainage may cause malfunction of valves and other pneumatic equipment. To prevent this, install an air dryer or after cooler, etc.
- The use of a fluid that contains foreign objects can cause problems such as malfunction and seal failure by promoting wear of the valve seat and armature and by sticking to the sliding parts of the armature etc. Install a suitable filter (5 μm or less) immediately upstream from the valve.
- If excessive carbon powder is generated by the compressor, it may adhere to the inside of the valves and cause a malfunction. Install mist separators upstream of the valves to eliminate it.

## 3 Installation - continued

### 3.5 Mounting

#### Warning

- Ensure sufficient space for maintenance activities.
- Avoid sources of vibration or adjust the distance from the body to a minimum length so that resonance will not occur.
- Do not apply external force to the coil section: When tightening fittings, apply a wrench or other tool to the outside of the piping connection parts.
- Do not warm the coil assembly with a heat insulator, etc. They can cause the coil to burn out. Use tape, heaters, etc. for freeze prevention on the piping and body only.
- Valve becomes hot during and after energization. Do not touch it with bare hands as it may cause burns.

#### Caution

- If a regulator, or a restrictor, is installed immediately before or after the IN port of the valve, the main valve will oscillate (chatter). Install them away from the valve or change the restriction.
- The header tank capacity should be sufficient. (Install sufficient air volume immediately upstream from the IN side) This is a valve for large flow rate, so if the capacity is small, the main valve may not open or may oscillate due to pressure drop or insufficient air supply.

### 3.5.1 JSXFE

- Mount the valve to secured metal piping.
- Insert the piping into the valve body until it stops to prevent misalignment of the piping in relation to the valve body.
- Tighten the compression nut.

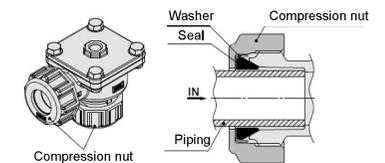


Figure 1.

- Tighten the compression nut sufficiently to prevent the nut becoming loose and causing leakage, looseness, and rattling. Hand tighten, then secure with a wrench.

Wrench tightening angle after hand tightening	
Size	Wrench tightening angle
3/4 (20A)	90° to 270°
1 (25A)	135° to 315°
1 1/2 (40A)	150° to 330°

Table 4.

### 3.5.2 JSXFH

#### Caution

- Mount the valve to the tank as shown below.

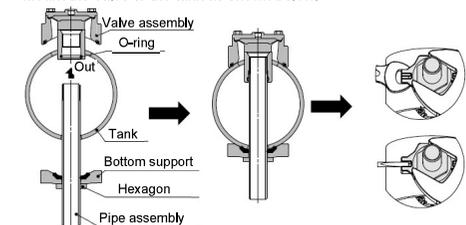


Figure 2.

### 3 Installation - continued

- Refer to catalogue for additional information.
- Pipe assembly tightening guide.

Size	Tightening torque [N·m]
3/4 (20A)	30
1 (25A)	50
1 1/2 (40A)	120
2 (50A)	120

Table 5.

Note 1) Excessive tightening may damage the valve or deform or damage the tank.  
 Note 2) The pipe assembly may become loose due to vibration when discharging air.

Note 3) The recommended tank is the ANSI sch 40. If making your own tank, ensure that it has sufficient strength to prevent it from becoming deformed when the valve is being screwed in.

### 3.6 Electrical connection

#### Warning

- The solenoid valve is an electrical product. For safety, install an appropriate fuse and circuit breaker before use according to local regulations. When using a number of solenoid valves, installing one fuse on the primary side is not enough. To protect the device more safely, select and install a fuse for each circuit.
- Take measures to prevent static electricity since some fluids can generate static.

#### Caution

- Use electrical wire of AWG20 to AWG16 size.
- Do not apply more than 10 N of force to the lead wires or damage may occur.
- Use electrical circuits that do not generate chattering in their contacts.
- Use voltage that is within ± 10% of the rated voltage.
- Do not bend or pull lead wires and cables repeatedly.

### 3.7 Wiring

#### 3.7.1 Wiring example and internal circuit

The SMARTVENT™ system allows the user to control up to 31 remote valves using a power supply to just one base valve. It is the user's responsibility to prepare wiring accessories (lead wires, grommets, code grips, etc.) according to the operating environment.

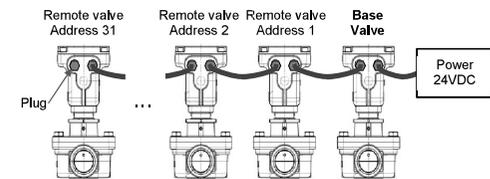
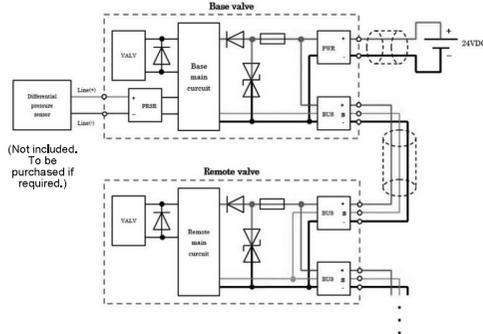


Figure 7.

When the BUS terminals are connected, voltage can be supplied from the base valve to a remote valve. The voltage will then be supplied from one remote valve to all remaining remote valves.

### 3 Installation - continued



(Not included. To be purchased if required.)

Figure 3.

Note) Install a fuse or a circuit breaker if necessary to protect the power supply.

#### 3.7.2 SMARTVENT™ wiring

Note: Turn off the power supply to the valves before wiring.

- Loosen the screws using a hexagon socket wrench (size 4) and remove the top cover leaving the screws installed. The screws have been machined to prevent them dropping out.
- Pass the lead wire through the input hole and connect it to each of the terminal blocks using a screwdriver.
- Secure the lead wire using wiring accessories (such as grommets or cord grips). The input hole is Rc1/4", NTP1/4" or G1/4" thread as shown in the "How to order" information.

Note) Attach a plug at the end in the input hole of the last remote valve.

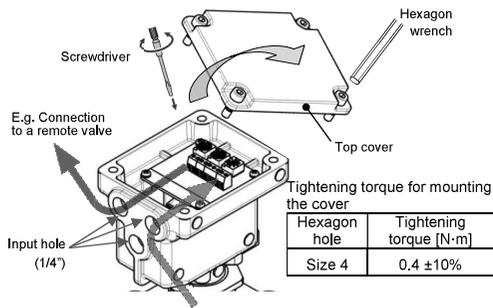


Figure 4.

#### 3.7.3 Wiring diagram

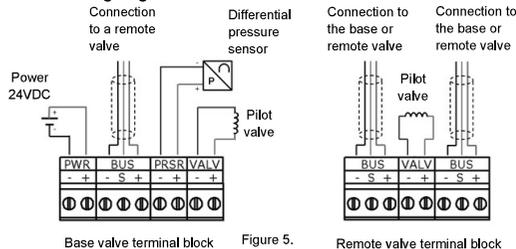


Figure 5.

### 3 Installation - continued

- Note 1) The pilot valves for the base and remote valves are pre-wired at the factory.  
 Note 2) Connection of a differential pressure sensor is an option, therefore is not required. Leave the differential pressure sensor port unconnected if no differential pressure sensor is used.

#### 3.7.4 Terminal block wiring

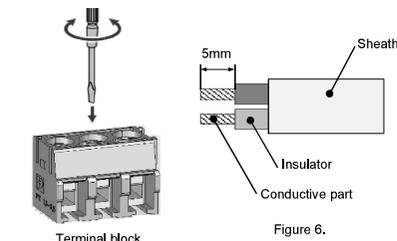


Figure 6.

Terminal block Lead wire specification	
Applicable wire size	AWG 26 to 16
Recommended wire strip length [mm]	5
Terminal block tightening torque [N·m]	0.22 to 0.25

Table 6.

- Connect all strands of wire to the terminal block, to avoid splitting. If a split wire comes into contact with another part, it may cause damage or malfunction.
- Use as thick a lead wire as possible for the power and BUS lead wires to reduce voltage drop and power deficiency. AWG20 or above is recommended.
- Ensure that no foreign objects enter mating areas. If foreign objects attach to a mating area, contact failure or heating may occur.
- Insert or remove the lead wire horizontally or vertically. Excessive stress when inserting or removing the lead wire may result in damage or contact failure. Ensure that the connected lead wire is fastened with no tension applied.

- Even with the recommended strip length, the conductive part may be too long or too short depending on the lead wire you use. In that case, adjust the strip length to ensure conductivity.
- When connecting, hold the terminal block to avoid putting excessive stress on the soldering pins.
- Do not wire with wet hands or allow water to enter the circuit boards.

### 3.8 Circuit board parts description

#### 3.8.1 Base valve circuit board

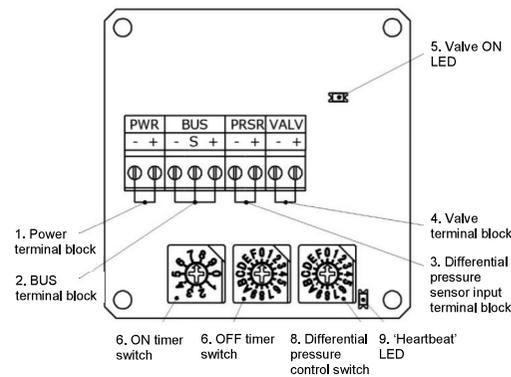


Figure 7.

### 3 Installation - continued

No.	Name	Indication	Description
1	Power terminal block	PWR	Terminal block for connecting to a 24VDC power supply. Once connected, voltage is supplied to the base and remote valves. Ensure correct polarity when connecting.
2	BUS terminal block	BUS	Terminal block for connecting to a remote valve. Connect this block with the remote valve's terminal block. Ensure correct polarity when connecting. '+/-' is for the power to the remote valve and 'S' is for communication signals.
3	Differential pressure sensor input terminal block	PRSR	Terminal block for connecting a differential pressure sensor (two-wire analogue output: 4-20mA). Ensure correct polarity when connecting.
4	Valve terminal block	VALV	Terminal block for output of supply voltage to valves. This terminal block is pre-wired at the factory.
5	Valve ON LED	DS1	The LED light is ON green when the valve is turned on.
6	ON timer switch	ON	The switch for setting the time when the valve is turned on. The default setting is 0: 100ms
7	OFF timer switch	OFF	The switch for setting the time when the valve is turned off. The default setting is 0: 4 sec
8	Differential pressure control switch	PRSR	The switch for setting a threshold value for the differential pressure at which the valve is turned on, providing that the differential pressure sensor is connected. The default setting is 0: OFF.
9	"Heartbeat" LED	DS2	This LED lights green once per second when the circuit operates normally.

Table 7.

Note 1) Select JSXF##-###-5PPB-## for the base valve when using a differential pressure sensor.

#### 3.8.2 Remote valve circuit board

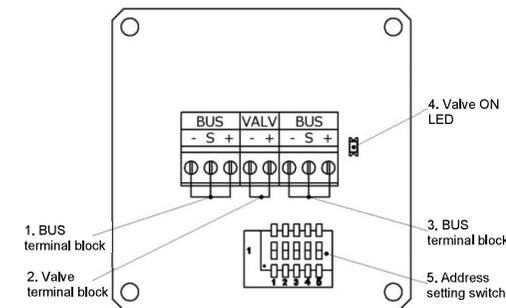


Figure 8.

**3 Installation - continued**

No.	Description	Indication	Description
1	BUS terminal block	BUS	Terminal block for connecting to the base or remote valves. Ensure correct polarity when connecting. '+L' is for the power to the remote valve and 'S' is for communication signals.
2	Valve terminal block	VALV	Terminal block for output of supply voltage to valves. This terminal block is pre-wired at the factory.
3	BUS terminal block	BUS	Terminal block for connecting to the base or remote valves. Ensure correct polarity when connecting. '+L' is for the power to the remote valve and 'S' is for communication signals.
4	Valve ON LED	DS1	The LED light is ON green when the valve is turned on.
5	Address setting switch	SW1	The switch for setting a remote valve's address. The default setting is "No address".

Table 8.

Note 1) The remote valves are turned on in the order of the assigned address numbers, not the order of physical installation. The remote valves can be turned on in a variety of combinations by assigning an address in the order that the remote valves are to be turned on.

**3.9 Operation modes and setting procedures**

**3.9.1 Continuous operation mode**

- Continuous operation mode allows the base valve and remote valves to be turned on when the supply voltage is applied.
- The valves are turned on in series, starting with the base valve and proceeding to remote valves from Address 2 to Address 32, which consists of one cycle. This cycle continues while the supply voltage is applied.
- ON and Off times (interval of each valve's ON duration) are set on the base valve, which controls all valves.

**3.9.1.1 Examples**

- Base valve + 2 remote valves  
Base valve: ON → Address 1: ON → Address 6: ON → Base valve: ON → Address 1: ON → ...

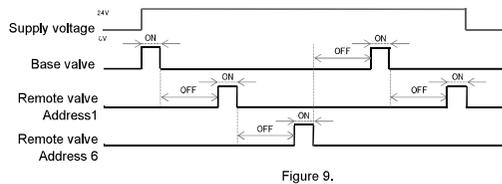


Figure 9.

If there are any skipped addresses as shown in the diagram above, the next remote valve in the sequence is turned on automatically.

**3 Installation - continued**

- Base valve + 31 remote valves  
Base valve: ON → Address 1: ON → Address 2: ON ... → Address 31: ON → Base valve: ON → ...

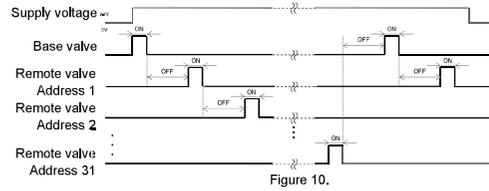


Figure 10.

**3.9.2 Differential pressure detection mode**

- Differential pressure detection mode is set by connecting a differential pressure sensor to the base valve and setting a threshold value with the differential pressure control switch.
- When output from the differential pressure sensor exceeds the threshold, one cycle of continuous operation begins.
- Once the output falls below the threshold and one cycle is completed, the differential pressure detection mode will stop automatically.
- The threshold value of the differential pressure sensor is set on the base valve.
- ON and OFF times as well as other settings are the same as for the continuous operation mode.

**3.9.2.1 Examples**

- Base valve + 2 remote valves  
Base valve: ON → Address 1: ON → Address 6: ON

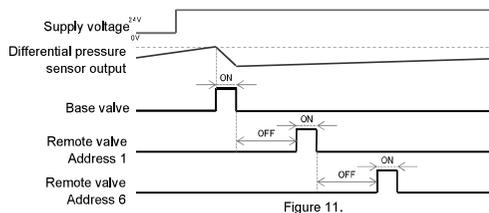


Figure 11.

If there are skipped addresses as shown in the diagram above, the next remote valve in the sequence is turned on automatically.

- Base valve + 31 remote valves  
Base valve: ON → Address 1: ON → Address 2: ON ... → Address 31: ON

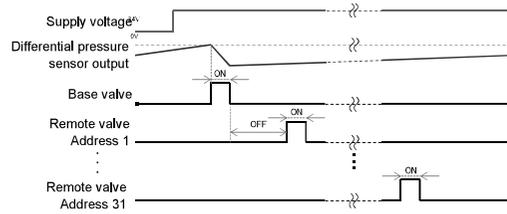


Figure 12.

**3 Installation - continued**

**3.9.3 Settings procedure**

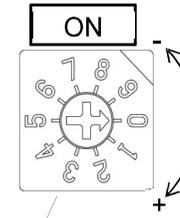
Note: Turn off the power supply to the valves before starting the setting. Note: Use a screwdriver matching the groove size and avoid applying excessive stress.

**3.9.3.1 ON timer switch (main valve)**

The ON timer switch controls when the valve is turned on. The ON time can be set between 100 and 234ms. Refer to the table below for the switch set value and corresponding ON time. The default setting is 0: 100ms.

Set value	ON time (ms)
0	100
1	114
2	130
3	144
4	160
5	174
6	190
7	204
8	220
9	234

Table 9.



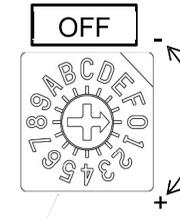
ON timer switch

Figure 13.

**3.9.3.2 OFF timer switch (main valve)**

The OFF timer switch controls the duration within which each valve is turned on (OFF time). The Off time can be set between 4 s and 29 s. See the table below for the switch set value and corresponding OFF time. The default setting is 0: 4s.

Set value	OFF time (s)
0	4
1	5
2	6
3	7
4	8
5	9
6	10
7	11
8	12
9	14
A	16
B	18
C	20
D	23
E	26
F	29



OFF timer switch

Figure 14.

**3.9.3.3 Differential pressure control switch (base valve)**

The differential pressure control switch allows switching from continuous operation to differential pressure detection modes. When in differential pressure detection mode, set the threshold value at which differential pressure detection mode initiates, by setting the switch to 1 to F indicated on the switch. When output from the connected differential pressure sensor (two-wire, 4-20mA output) exceeds the threshold value, continuous operation mode starts, and once the output falls below the threshold, it stops after one cycle.

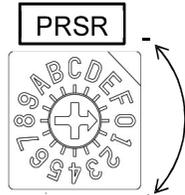
When the value is set to '0' or no sensor is connected, continuous operation mode is activated. The default setting is 0: OFF.

Refer to the table below for examples of threshold values of differential pressure sensor (PSE550-28-X505: 5 kPa).

**3 Installation - continued**

Set	Mode	mA	kPa	PSI
0	Continuous	OFF	OFF	OFF
1		5	0.31	0.05
2		6	0.63	0.09
3		7	0.94	0.14
4		8	1.25	0.18
5		9	1.56	0.23
6		10	1.88	0.27
7	Differential pressure detection	11	2.19	0.32
8		12	2.50	0.36
9		13	2.81	0.41
A		14	3.13	0.45
B		15	3.44	0.50
C		16	3.75	0.54
D		17	4.06	0.59
E		18	4.38	0.63
F		19	4.69	0.68

Table 11.



Differential pressure control switch

Figure 15.

Note 1) The ON, OFF and differential pressure set values in the table above are only for reference, and SMC will not guarantee these values. The user is advised to adjust the values to suit the operating environment.  
Note 2) The rotary switch provides a click sensation when turned, and its structure prevents it from stopping in the middle. Do not use the product by stopping the switch in the middle, which may result in a malfunction.

**3.9.3.4 Address setting switch (for remote valve)**

Set the address of each remote valve referring to the table below. The default setting is "No address".

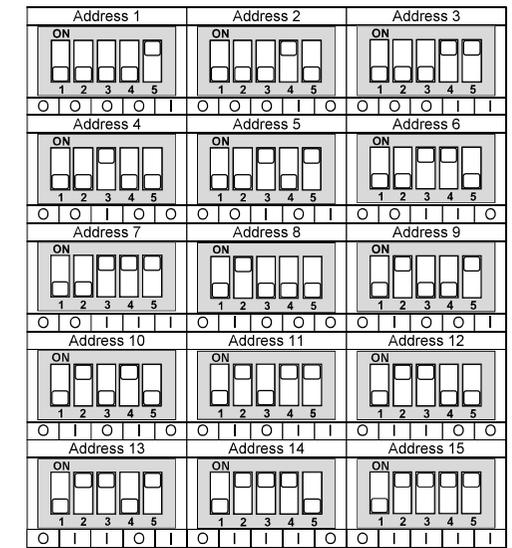


Figure 16.

### 3 Installation - continued

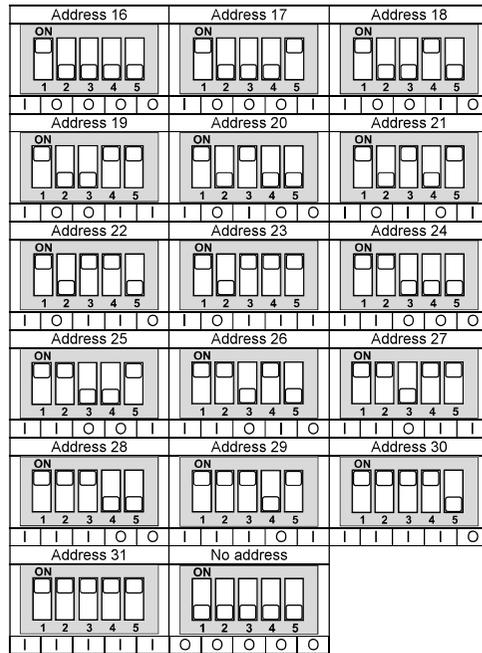


Figure 17.

Note 1) Remote valve assigned with no address will not be turned on and skipped even if it is connected.

Note 2) The same address can be assigned to up to two remote valves. The product may not operate properly if the same address is set to more than two remote valves.

#### 3.10 Extended period of continuous energization

##### Warning

This product is a pulse operating valve. Do not energise for a prolonged period. It consumes a large flow, which causes a lack of supply on the inlet of the valve, resulting in chattering of the diaphragm and failure.

### 4 How to Order

Refer to catalogue for 'How to Order'.

### 5 Outline Dimensions

Refer to catalogue for outline dimensions.

### 6 Maintenance

#### 6.1 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.

### 6 Maintenance - continued

- Do not disassemble the product, unless required by installation or maintenance instructions.
- Periodic maintenance of filter and strainer:
  - Replace filter element every 1 year or when the pressure drop becomes 0,1 MPa, whichever comes first.
  - Wash strainer when the pressure drop becomes 0,1 MPa.
- Exhaust the drainage from the air filters periodically. If the drainage overflows and enters the air line, this may cause malfunction of pneumatic equipment.
- If a silencer is used for a long period of time, clogging may occur and the response characteristics may change. Depending on the quality of the fluid and the energizing time, replace the silencer after 500,000 cycles.

#### 6.2 Storage

##### Caution

In the case of long-term storage after use, thoroughly remove all moisture to prevent rust and deterioration of rubber materials, etc.

#### 6.3 Replacement parts

Refer to catalogue.

#### 6.4 Disassembly procedure

##### Caution

- Before starting the disassembly work, be sure to shut off the power supply and pressure supply, and then release the residual pressure.
- Make sure that the temperature of the solenoid coil has dropped sufficiently before removing it.
- Loosen the hexagon bolts or hexagon socket head cap screws and remove the bonnet assembly, O-ring, and main valve (sub-valve). See below.

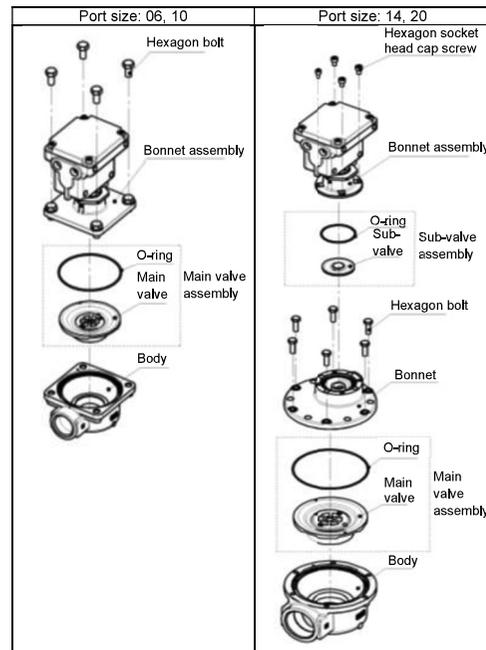


Figure 18.

### 6 Maintenance - continued

#### 6.5 Assembly procedure

##### Caution

- Assemble the main valve (sub-valve) to the body, with reference to mounting orientation shown in Figure 19. Incorrect assembly can lead to product malfunction.
- After installation, make sure that the O-ring is fully seated in the groove (see Figure 20). If the O-ring has fallen out of the groove, it may cause external leakage or malfunction.

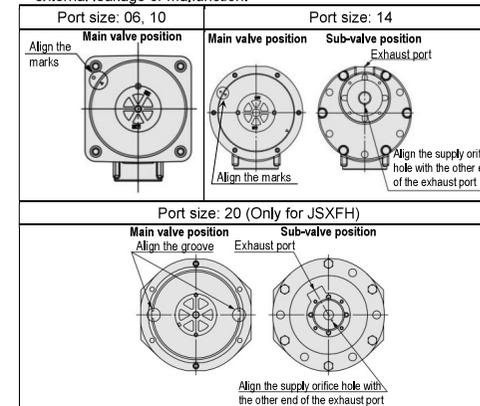


Figure 19.

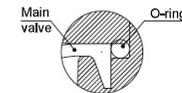


Figure 20. O-ring position

##### Caution

#### 6.5.1 How to change the electrical entry

Change the electrical entry when piping if desired, as shown in the figure below:

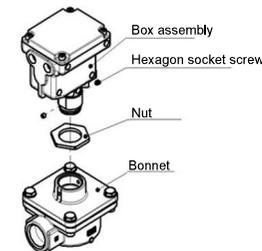


Figure 21.

#### 6.5.1.1 Disassembly

- 1) Loosen the nut and remove the hexagon socket screw to remove the box assembly from the bonnet.

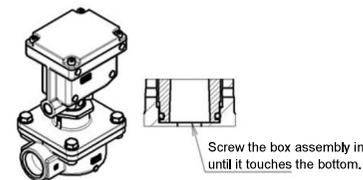


Figure 22.

### 6 Maintenance - continued

#### 6.5.1.2 Assembly:

- 1) Insert the nut in the thread of the box assembly.
- 2) Screw the box assembly into the thread of the bonnet until it touches the bottom.
- 3) Turn the box assembly back, not exceeding one turn.
- 4) Tighten the nut.
- 5) Tighten the hexagon socket screw to fit the assembly in place.
- 6) Tighten fittings to the specified tightening torque.

Part description	Size	Tightening torque [N·m]
Nut	46mm (across flats)	50
Hexagon socket screw	M5	1.35 to 1.65

Table 12.

### 7 Limitations of Use

#### 7.1 Limited warranty and disclaimer/compliance requirements

Refer to Handling Precautions for SMC Products.

##### Caution

#### 7.2 Low temperature operation

##### Warning

- The valve can be used in an ambient temperature of -40°C. However, take measures to prevent freezing or solidification of impurities, etc.

- A high dew point in low ambient temperature or a high flow rate may cause freezing. In such cases, take measures to prevent freezing by, for example, installing an air dryer or keeping the body warm.

#### 7.3 Holding of pressure

##### Warning

Since valves are subject to air leakage, they cannot be used for applications such as holding pressure (including vacuum) in a system.

#### 7.4 Cannot be used as an emergency shut-off valve

##### Warning

This product is not designed for safety applications such as an

emergency shut-off valve. If the valves are used in this type of system, other reliable safety assurance measures should be adopted.

#### 7.5 Normally closed valves

##### Warning

Although the valves are normally closed (IN and OUT port blocked), and flow is blocked from Port 1 to Port 2, the fluid will not be blocked if Port 2 pressure is greater than Port 1 pressure, and fluid will flow from Port 2 to Port 1.

#### 7.6 Leakage voltage

##### Caution

Ensure that any leakage voltage caused by the leakage current when the switching element is OFF causes  $\leq 2\%$  of the rated voltage across the valve.

### 8 Product Disposal

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

### 9 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

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