

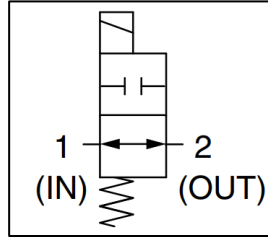


ORIGINAL INSTRUCTIONS



Refer to Declaration of Conformity for relevant Directives

Instruction Manual
Solenoid Pinch Valve
LPV22-X1 Series



The intended use of LPV is for on/off flow control of fluid by pinching tubing and so avoiding fluid contact with the moving parts of the valve.

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.

- *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 General Specifications

Model	LPV22-X1
Applicable Tubing <small>Note 1)</small>	Silicone O.D.: \varnothing 4 I.D.: \varnothing 2 O.D.: \varnothing 5/32" I.D.: \varnothing 1/32"
Type of Actuation	Direct operated solenoid
Valve Type	N.O.
Rated Voltage	12 / 24 VDC
Allowable voltage fluctuation	\pm 10% of the rated voltage
Power Consumption	Starting: 8 W, Holding: 1.5 W [Built-in power saving circuit]
Ambient Temperature	0 to 50°C
Operating pressure	0 to 0.2 MPa
Impact/vibration resistance <small>m/s² Note 2)</small>	150/30
Mounting Orientation	Unrestricted
Enclosure	IP40 equivalent

Table 1

2 Specification - continued

Notes:

- 1) Silicone tubing is not provided with the valve.
- 2) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the armature in both energized and de-energized states for each condition. (Value in the initial state)
Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states for each condition. (Value in the initial state)

Warning

Special products 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.

3.3 Piping

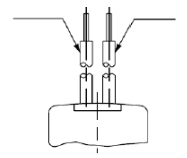
Caution

- Before connecting tubing make sure to clean up chips, cutting oil, dust etc.
- When tubing is inserted into the clamp, ensure it is properly fitted in the pinch valve without causing damage to the tubing.
- Make sure the tubing used is silicone tubing with the dimensions given in Table 1.

3.4 Wiring

Caution

- Use electrical circuits which do not generate chattering in their contacts.
- Use voltage which is within \pm 10% of the rated voltage.
- Apply the correct voltage.
Applying incorrect voltage may cause a malfunction or a burned coil.
- **Polarity.**
LPV has an in-built circuit with polarity, ensure that the positive terminal is connected to the red lead wire and negative terminal is connected to the black lead wire. Otherwise malfunction could occur.



Lead wire colour
Red (+), Black (-)

Figure 1

- **Lead wire is AWG22**

Ensure that the connecting wire is sufficient to allow for inrush current.

3 Installation - continued

- Connect the wires so that an external force of 10N or greater is not applied to the lead wire.

3.5 Mounting

- There are 2 patterns of mounting. See Figure 1 and Figure 2.

Direct Mounting

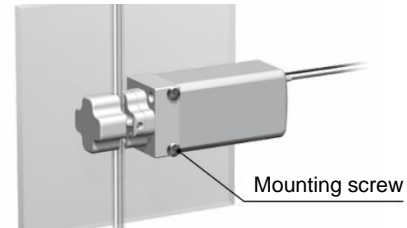


Figure 2

Panel Mounting

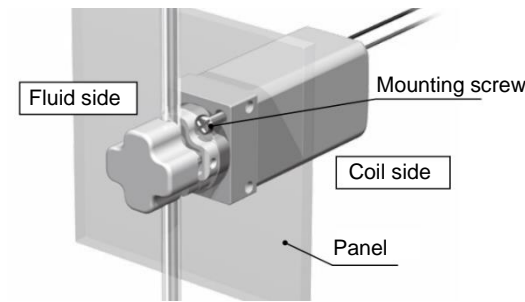


Figure 3

Recommended panel hole dimensions for valve mounting

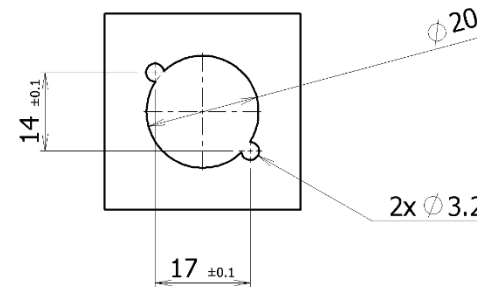


Figure 4

Caution

- **Always tighten threads with the proper tightening torque.**
When mounting the solenoid valve, tighten it with the proper tightening torque shown below.

Type of Mounting	Thread size	Tightening torque (N.m)
Direct mounting	M2.5	0.25 to 0.35
Panel mounting	M3	0.4 to 0.6

Table 2

- **If equipment does not operate properly, stop operation.**
After mounting, perform suitable function and leak tests to confirm that the mounting is correct.

4 How to Order

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

5 Outline Dimensions (mm)

Refer to *catalogue or drawings* 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.
- Do not disassemble the product, unless required by installation or maintenance instructions.
- Ensure that the valve is installed in a sufficient space to allow maintenance of the valve and the changing of the tubing.

7 Limitations of Use

7.1 Limited warranty and Disclaimer/Compliance Requirements

Refer to Handling Precautions for SMC Products.

Caution

- Do not exceed any of the specifications in section 2 in this document.
- Cannot be used as an emergency shutoff valve.
- When continuously energised, ensure the temperature does not exceed the allowable ambient temperature range.
- Operate valves once every 30 days minimum to prevent malfunction.

- Fluid properties such as pressure and viscosity etc. will effect valve performance, response time etc. Verify performance and product suitability through testing.

8 Product disposal

This product should 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 or www.smc.eu for contacts.

SMC Corporation

URL : <http://www.smcworld.com> (Global) <http://www.smc.eu> (Europe)
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