



ORIGINAL INSTRUCTIONS

Instruction Manual
Air Checker: Electronic Pressure Switch
PS1000 / PS1100 / PS1200



The intended use of the compact pressure switch is to measure, monitor and display pressure and provide an output signal.

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: 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.

	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

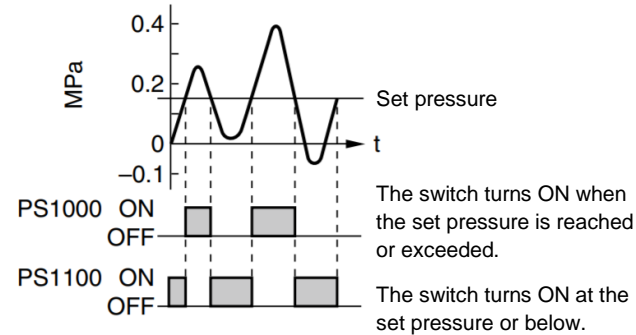
- Always ensure compliance with relevant safety laws and standards.
- All work must be carried out in a safe manner by a qualified person in compliance with applicable national regulations.
- This product is class A equipment intended for use in an industrial environment. There may be potential difficulties in ensuring electromagnetic compatibility in other environments due to conducted or radiated disturbances.
- Refer to the operation manual or catalogue on the SMC website (URL: <https://www.smcworld.com>) for more safety instructions.

2 Specifications

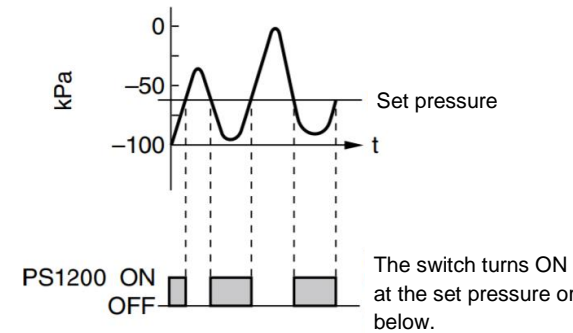
2.1 General specifications

Model No.	PS1000	PS1100	PS1200
Switch output	Pressure ≥ Set pressure: ON	Pressure ≤ Set pressure: ON	
Max. operating pressure	1 MPa		500 kPa
Setting pressure range	-0.1 to 0.45 MPa	-0.1 to 0.4 MPa	-100 to 0 kPa
Applicable fluids	Air, non-corrosive gas, non-flammable gas		
Indicator light	Switch ON: Red LED turns ON		
Temp. characteristics	±3% F.S.		
Repeatability	±1% F.S.		
Hysteresis	4% F.S. or less	10% F.S. or less	
Load voltage	12 to 24 VDC ±10%, ripple (p-p) 10% or less		
Load current	5 to 40 mA		
Leakage current	1 mA max.		
Internal voltage drop	5 V max.		
Operating temperature range	0 to 60°C (no condensation)		
Insulation resistance	2 MΩ or more at 500 VDC (between live parts and case)		
Withstand voltage	1000 VAC, 1 minute (between live parts and case)		
Port sizes	R06	φ6 reducer	
	R07	φ1/4" reducer	
Weight	5 g (excluding lead wire)		
Enclosure rating	IP40		
Lead wire	Oil resistant vinyl cabtyre cable 2 cores, φ2.55, 3 m long Conductor cross section 0.18 mm ² Insulator O.D. 0.96 mm		
Material of wetted parts	Sensor: Silicon, Body: PBT, O-ring: HNBR		

2.2 PS1000 / PS1100 switch specification



2.3 PS1200 switch specification



3 Installation

3.1 Installation

Warning

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

3.2 Piping

Caution

- Before connecting piping make sure to clean up chips, cutting oil, dust etc.

3.3 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. Check the product specifications.
- Do not mount in a location exposed to radiant heat.

3.4 Lubrication

Caution

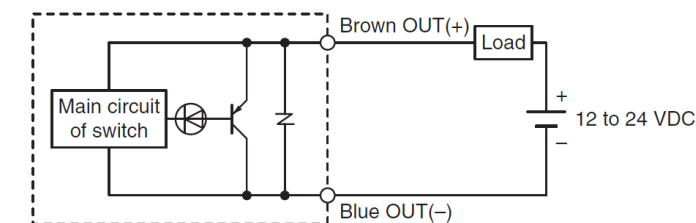
- SMC products have been lubricated for life at manufacture, and do not require lubrication in service.
- If a lubricant is used in the system, use turbine oil Class 1 (no additive), ISO VG32. Once lubricant is used in the system, lubrication must be continued because the original lubricant applied during manufacturing will be washed away.

4 Wiring

4.1 Wiring

- Connections should be made with the power supply turned OFF.
- Use a separate route for the product wiring and any power or high voltage wiring. Otherwise, malfunction may result due to noise.
- Incorrect wiring may cause damage to the pressure switch, breakdown and malfunction. Confirm the colour of the wires with the operation manual before wiring.
- Wiring applying repeated bending and tensile stress to the lead wire can break the circuit.
- The recommended bend radius of the lead wire is 6 times the outside diameter of the sheath, or 33 times the outside diameter of the insulation material, whichever is larger.
- Avoid defective insulation (crossed lines with other circuit, ground fault, defective insulation between terminals, etc.) with the wiring. Excessive current can flow through the pressure switch, which may cause damage.
- If the pressure switch is turned on with no load connected to the switch, over current will flow, causing the pressure switch to break instantly.
- The pressure switch has no reverse connection protection for the brown (+) and blue (-) of the power supply line.
- Do not exceed the maximum allowable load (24 VDC, 40 mA) specified.

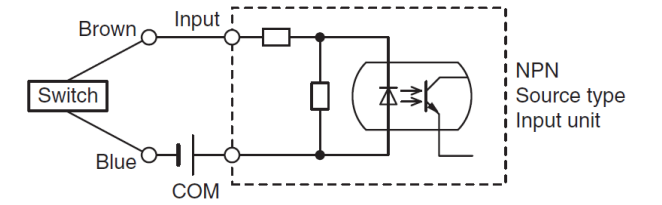
4.2 Circuit Diagram



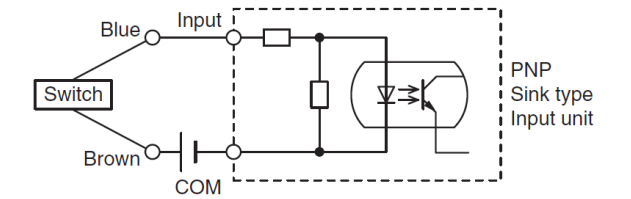
4 Wiring (continued)

4.3 Wiring diagram

Example of connection to a PLC (sequence controller). (Source Input type)

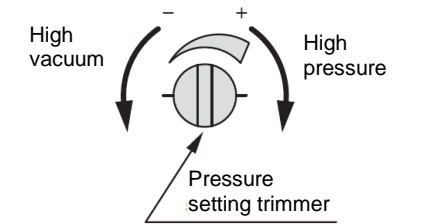


(Sink Input type)



5 Setting

- Adjust the calibration adjustment to set the ON pressure.
- Rotate clockwise to increase the set pressure. For setting vacuum pressure rotate anticlockwise.
- For setting, use a flat blade screwdriver suitable for a trimmer. Rotate lightly to adjust.
- The rotation angle of the trimmer is 220°.
- There is a stop provided to prevent the trimmer from rotating beyond its limits. Rotation beyond the limits can damage the trimmer. Adjust the trimmer gently within the rotation angle.

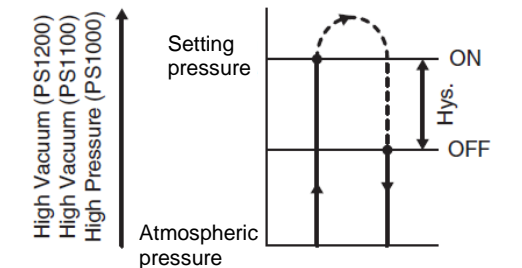


Caution

- Do not use a large screwdriver as this may damage the trimmer groove.
- Gently turn the trimmer and do not exceed the trimmer adjustment range.

5.1 Hysteresis

Hysteresis is the pressure difference between the ON and OFF pressure. The set pressure is the pressure selected to switch from OFF to ON.



6 How to Order

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

7 Outline Dimensions

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

8 Maintenance

8.1 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.
- Perform regular maintenance and inspections.
It may not be impossible to guarantee safety due to unexpected malfunction or erroneous operation. Perform regular inspections and confirm normal operation.
- Use a soft cloth to clean the pressure switch. For heavy stains, use a cloth soaked with diluted neutral detergent and fully squeezed, then wipe up the stains again with a dry cloth.

9 Limitations of Use

9.1 Limited warranty and Disclaimer/Compliance Requirements

Refer to Handling Precautions for SMC Products.

Caution

- **SMC products are not intended for use as instruments for legal metrology.**
Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country.
Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

10 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.

11 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.smc.eu> (Europe)
SMC Corporation, 1-5-5, Kyobashi, Chuo-ku, Tokyo 104-0031, JAPAN
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