



# Installation and Maintenance Manual

## PS1000 Series Pressure Switch, PS1100 Series Vacuum Switch

For future reference, please keep this manual in a safe place

This manual should be read in conjunction with the current product catalogue

### Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by label of "Caution", "Warning" or "Danger". To ensure safety, be sure to observe ISO4414 (Note1), JIS B 8370 (Note2) and other safety practices.

Note 1: ISO 4414: Pneumatic fluid power – Recommendations for the application of equipment to transmission and control systems.

Note 2: JIS B 8370: Pneumatic system axiom.

**CAUTION** : Operator error could result in injury or equipment damage.

**WARNING**: Operator error could result in serious injury or loss of life.

**DANGER** : In extreme conditions, there is a possible result of serious injury or loss of life.

### WARNING

#### 1. The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.

Since the products specified here are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or after analysis and/or tests to meet your specific requirements.

#### 2. Only trained personnel should operate pneumatically operated machinery and equipment.

Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced operators.

#### 3. Do not service machinery/equipment or attempt to remove component until safety is confirmed.

- 1) Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
- 2) When equipment is to be removed, confirm the safety process as mentioned above. Switch off air and electrical supplies and exhaust all residual compressed air in the system.
- 3) Before machinery/equipment is re-started, ensure all safety measures to prevent sudden movement of cylinders etc. (Bleed air into the system gradually to create back-pressure, i.e. incorporate a soft-start valve).

#### 4. Contact SMC if the product is to be used in any of the following conditions:

- 1) Conditions and environments beyond the given specifications, or if product is used outdoors.
- 2) Installations in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverage, recreation equipment, emergency stop circuits, press applications, or safety equipment.
- 3) An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

### CAUTION

Ensure that the air supply system is filtered to 5 micron.

### Specifications

Model	PS1000-R06L	PS1100-R06L
Switch output	Present pressure $\geq$ Set pressure: ON	Present pressure $\leq$ Set pressure: ON
Fluid	Air, Non corrosive gas	
Max. operating pressure	1MPa(10.2 kgf/cm <sup>2</sup> )	
Set pressure range	-0.1~0.45MPa	-0.1~0.4MPa
Temp. characteristics	$\pm 3\%$ F.S. or less	
Repeatability	$\pm 1\%$ F.S. or less	
Hysteresis	4%F.S.	
Supply voltage	12~24VDC (Ripple $\pm 10\%$ or less)	
Load current	5~40mA	
Leakage current	1mA or less	
Internal voltage drop	5V or less	
Operating display	ON: when red LED turns on	
Operating temp. range	0~60°C (Prevent bedewing)	
Insulation resistance	Between wires and case 2M $\Omega$ (500VDC by megameter)	
Breakdown voltage	Between whole wires and case 1000VAC 50/60Hz (1 minute)	
Vibration resistance	10~500Hz, 1.5mm or acceleration 10G (Choose the smaller vibration) to X, Y, Z direction, 2 hours for each direction	
Shock resistance	100G X, Y, Z directions (3 times for each direction)	
Weight	5g (Excluding lead wire)	
Port size	$\phi 6$ port for one-touch fitting	
Enclosure	IP40	
Lead wire	Grommet type oil-proof captive cord 2 wires $\phi 2.55$ , 0.18mm <sup>2</sup> , 3m	

### Installation

### WARNING

Ensure all air and power supplies are ISOLATED before commencing installation.  
Do NOT use this product in explosive atmospheres.  
Protect the product from oil and water splashes.  
Do NOT subject this product to excessive shock loads.  
If it is intended to energise this product for extended periods of time please consult SMC.



Fig 1

### Switch specifications

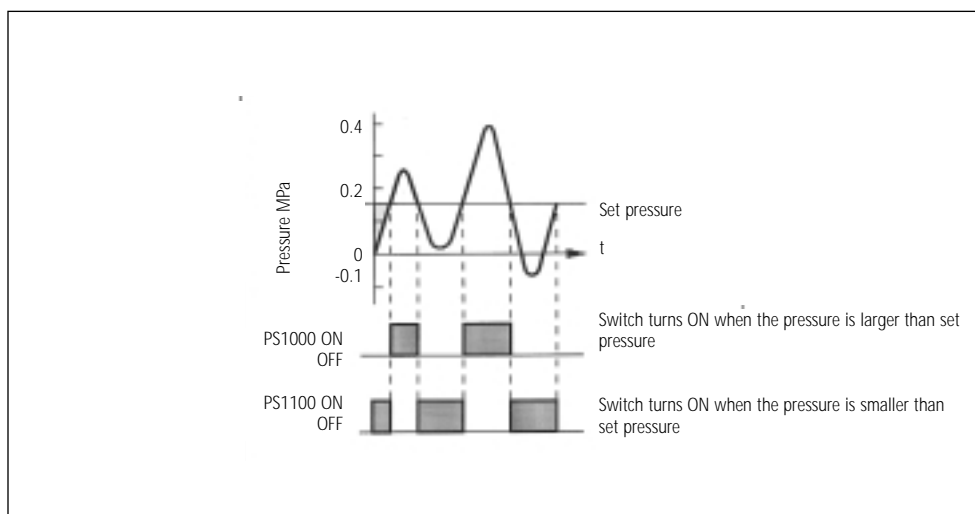


Fig 2

### Internal wiring circuit

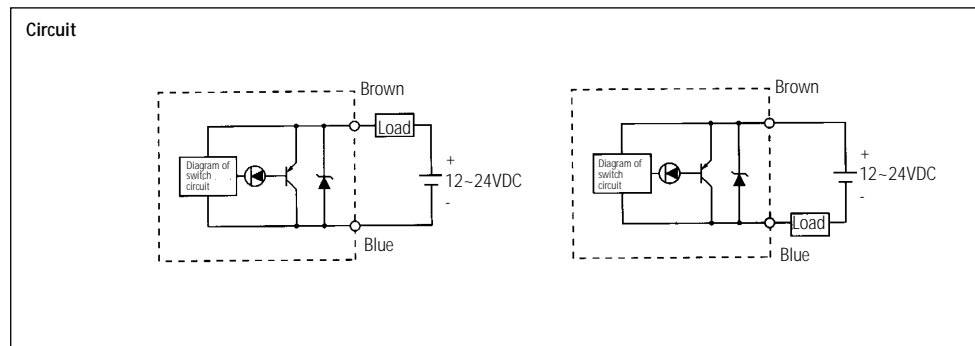


Fig 3

### Connection to a PLC

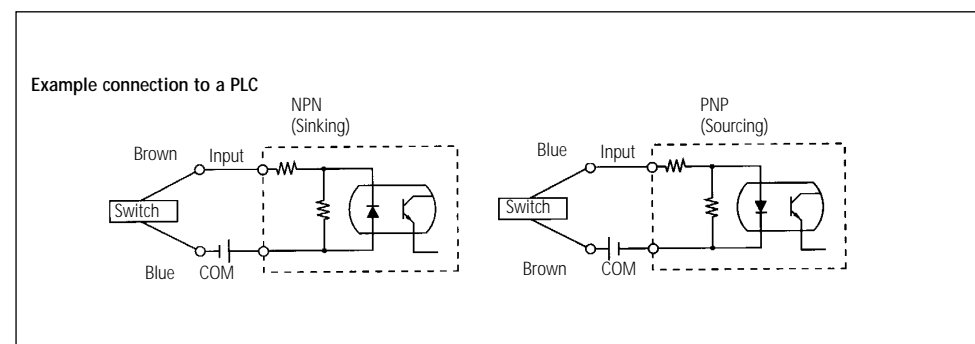


Fig 4

### Pressure switch/vacuum calibration

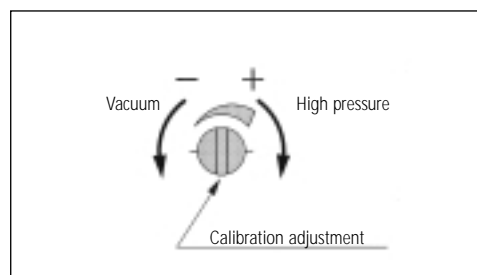


Fig 5

- 1 Use the calibration adjustment to set ON pressure.
- 2 Rotate clockwise to increase pressure setpoint. For setting vacuum, rotate counterclockwise.
- 3 Use a bladed screwdriver to adjust the setpoint.

### Trimmer

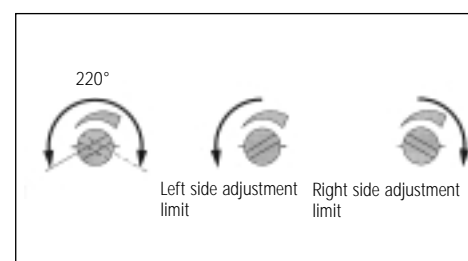


Fig 6

Rotation angle of the trimmer is 220°. There is a stop provided to prevent the trimmer rotating beyond its limits. Rotating beyond the limit will damage the trimmer. Adjust the trimmer slowly within the rotation angle.

### CAUTION

When handling the switch, hold the body and DO NOT subject the wires to excessive force.  
DO NOT connect a load exceeding the maximum load capacity (24V Max. 40mA).  
The switch is NOT protected against reverse connection of power, brown (+) blue (-). Misconnection will damage the switch.  
DO NOT insert into a KC series tube coupler as removal may not be possible.

Should you require any additional information please consult your local SMC office, details below:

When you enquire about the product, please contact the following

SMC Corporation:	
ENGLAND	Phone 01908-563888
ITALY	Phone 02-92711
HOLLAND	Phone 020-5318888
SWITZERLAND	Phone 052-396 31 31
SPAIN	Phone 945-184100
GREECE	Phone 01-3426076
FINLAND	Phone 09-68 10 21
BELGIUM	Phone 03-3551464
TURKEY	Phone 212-2211512
GERMANY	Phone 6103-402-0
FRANCE	Phone 01-64-76-10-00
SWEDEN	Phone 08-603 07 00
AUSTRIA	Phone 02262-62-280
IRELAND	Phone 01-4501822
DENMARK	Phone 70 25 29 00
NORWAY	Phone 67-12 90 20
POLAND	Phone 48-22-6131847
PORTUGAL	Phone 02-610 8922