

USER MANUAL

SI-DPMS



## Differential Pressure Switches

### Presentation

The differential air pressure switches with membrane are used for the control of air treatment system installations. They allow, without supply, to establish a switching contact during a cut-off pressure exceeding. They can be mounted in parallel with a manometer. They allow to control systems working under or over pressure, fans or filter.

### Description



Before the commissioning of the pressure switch, please read carefully this user manual.

| Model     | Setting range* | Switching Differential | Maximum pressure | Tolerances |
|-----------|----------------|------------------------|------------------|------------|
| Si-DPMS-1 | 20-200 Pa      | 10 Pa                  | 10 000 Pa        | ≤ ±15 %    |
| Si-DPMS-2 | 50-500 Pa      | 20 Pa                  |                  | ≤ ±15 %    |
| Si-DPMS-3 | 200-1000 Pa    | 100 Pa                 |                  | ≤ ±15 %    |
| Si-DPMS-4 | 500-2500 Pa    | 150 Pa                 |                  | ≤ ±15 %    |
| Si-DPMS-5 | 1000-5000 Pa   | 250 Pa                 |                  | ≤ ±15 %    |

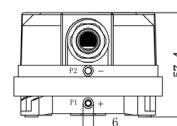
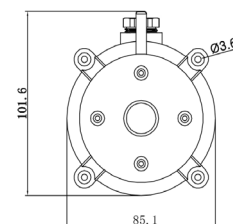
\*Pressure values referred to vertical installation. If the device is installed horizontally, these values increase by 20 Pa.

The differential pressure switches have a round shape and two connections of Ø 6.2 mm (for hoses, of Ø 5 x 8 mm for example). They are supplied with the needed installation accessories.

### General features

|                       |                                                                |
|-----------------------|----------------------------------------------------------------|
| Media                 | Air, non-combustible and non-aggressive gases                  |
| Maximum pressure      | 10 kPa                                                         |
| Voltage               | 250 V / 1.5 A (0.4 A)                                          |
| Mounting              | Vertical                                                       |
| Protection            | IP54 (with cover), IP00 (without cover)                        |
| Operating temperature | -40 °C to 85 °C                                                |
| Relay type            | SPDT                                                           |
| Electrical rating     | Resistance: initial: < 50 mΩ<br>Current: 1.5 A (0.4 A) / 250 V |
| Contact terminals     | 6.3 mm x 0.8 mm blade or screw terminal                        |
| Connection            | Ø 6.0 mm for tube connection                                   |
| Certification         | CE                                                             |

### Dimensions (mm)



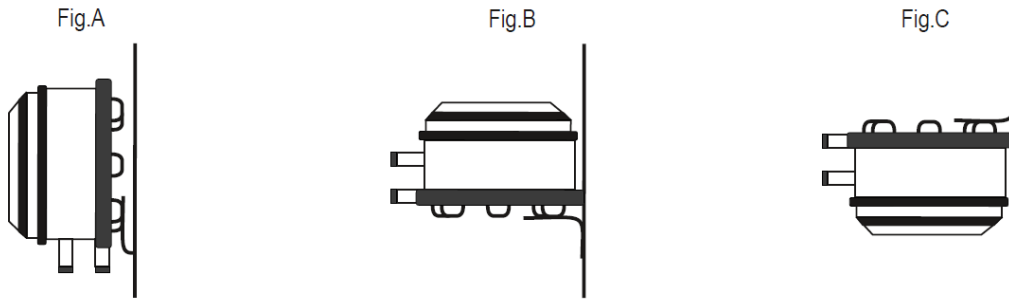
## Connection and mounting positions

- **Mounting position:**

Figure A: Recommended mounting position: vertical (factory calibration).

Figure B: Horizontal mounting position, electrical connections upward. Real switching points are 20 Pa higher beside the dial indications (position not recommended).

Figure C: Horizontal mounting position, electrical connections downward (position not recommended).



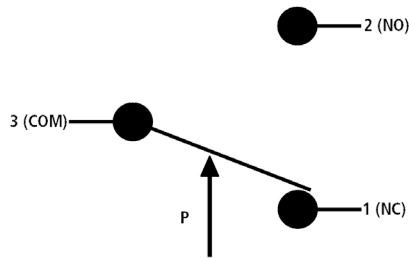
- Place the device into its intended location within your installation. Use the provided screws to fix its mounting support in the wall.
- Remove the safety plastic cover by unscrewing the fixing screw.
- Connect the wires using the provided accessories, follow the electrical connection diagram below. The cable gland can be orientated in a different angle, if needed.
- Adjust the switching point on the dial of the pressure switch, within the printed scale. Do not force the dial by excessively turning it.
- Put the safety plastic cover back again and fix it with the screw.
- Connect the pressure tubes to the corresponding pressure ports.

- **Electrical connection:**

Terminal 1: NC

Terminal 2: NO

Terminal 3: NO



**Disconnect the device from any power supply before opening the cover.**



**Removing the safety plastic cover and performing the electrical connection of this product poses a high risk of electrocution if this device is connected to any power supply. Make sure that the device is not powered before any manipulation.**

The electrical connection presented above is a schematic view of an electrical break contact.

As long as the cut-off threshold is not exceeding, the terminal 3 remains connected to the terminal 1.

If the cut-off threshold is exceeded, the terminal 3 will then be connected to the terminal 2. The electrical contact will be therefore established.

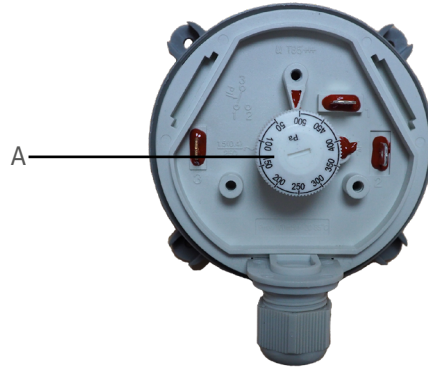
- **Pressure connection:**

Sauermann offers a wide range on pressure connectors that can be used for installing the differential pressure switches Si-DPMS:

- Quick coupler, Ref. KR 483.
- Connector for double-skinned wall, Ref. DP 447 and DP 339.

## Switching point settings

- The dial allows to set the switching point. To settle the superior switching point (higher pressure), rotate the dial (A) in clockwise direction. Let slowly the pressure increase, (watch the max. pressure). Set the required threshold value pressure. Control the lower or upper switching points several times, by increasing or decreasing the pressure. If needed, adjust them.
- For vacuum service, establish the connection on P2. Settings are performed in the same way.



Adjust the switch only in the graduated setting range.  
Do not force the dial (A) when setting the threshold value.

