

LED Digital Pressure Sensor

Package: 1 pc. in a bag

- To enhance visibility, an LED display is used for the vacuum switch.
- LED displays are used for set-up pressure and impression pressure.
- Two types of vacuum switch equipped with two-point output and analog output are provided. The application determining which should be used. In respect to wiring, a connector system has been chosen for ease of layout.
- Three pipe connection methods are offered: one-touch, M5 metric female screw, and direct connection. The application will determine which method is the most appropriate.
- Output detection accuracy is enhanced by the use of electronic switches.

Specifications

| Specification | Equipped with 2-point output switch (W) | Equipped with analog output switch (A) | |
|-----------------------------|---|---|-------------------------------|
| Set value at shipment | -14.8in. Hg/-50kPa (SW1) -3.0in. Hg/-10kPa (SW2) | -14.8in. Hg/-50kPa | |
| Current consumption | 40mA max. | | |
| Pressure detection | Diffused semiconductor pressure switch | | |
| Service pressure range | 0~-29.5in. Hg (0~-100kPa) | | |
| Pressure setting range | 0~-29.3in. Hg (0~-99kPa) | | |
| Proof pressure | 29psi (0.2MPa) | | |
| Storage temperature range | -4~176°F/20~80°C (atmospheric pressure, humidity less than 60%RH) | | |
| Operating temperature range | 32~122°F/0~50°C (no freezing) | | |
| Operating humidity range | 35~85%RH (no freezing) | | |
| Power requirements | DC12~24V ± 1.0% Ripple (P-P) 10% max. | | |
| Protective structure | IEC standard IP40 equiv. | | |
| No. of pressure setting | 2 | 1 | |
| Operating accuracy | ± 3%F.S. max. (at Ta= 77°F/25°C) | | |
| Differential response | Fixed (2%F.S. max.) | Variable (about 0~15% of set value) | |
| Switch output | Open collector output: 30V 80mA max. Residual voltage 0.8V max. | | |
| Analog output | | | |
| | | | Output voltage: 1~5V |
| | | | Zero-point voltage: 1 ± 0.1 V |
| | | | Span voltage: 4 ± 0.1 V |
| | Output current: 1mA max. (load resistance 5kΩ max.) | | |
| | LN/HYS : ± 0.5%F.S. max. | | |
| Response | 1 msec max. | | |
| Indication | 0~-29.5in. Hg/0~-99kPa (2-digit red LED display) | | |
| No. of indications | About 4 times/sec | | |
| Indication accuracy | ± 3%F.S. ± 2digit | | |
| Resolution | 1 digit | | |
| Operational indication | SW1: Red LED lighting up when pressure is above setting | Red LED lighting up when pressure is above setting. | |
| | SW2: Green LED lighting up when pressure is below setting | | |
| Function | 1. MODE selector switch (ME or S1 or S2) | 1. MODE selector switch (ME or SW) | |
| | 2. S1 setting trimmer (2/3-turn trimmer) | 2. SW setting trimmer (2/3-turn trimmer) | |
| | 3. S2 setting trimmer (2/3-turn trimmer) | 3. HYS setting trimmer (about 0~15% of set value) | |

Model Designation (Example)

VUS21 - 6 3

- ①. Switch output
No code: NPN opencollector output
P: PNP opencollector output
- ②. Vacuum switches (NPN Open collector)
W: With 2-point output switch
A: With analog output switch
- ③. Connecting method

| | Metric thread (mm) | Quick-fitting joint | | | Fixed type |
|------|--------------------|---------------------|----------|----------|------------|
| Code | M5 | 4 | 6 | 8 | F |
| Size | M5 × 0.8 | φ4mm | φ6mm | φ8mm | - |

Detailed Safety Instructions

Before using the PISCO device, be sure to read the "Safety Instructions", "Common Safety Instructions for Products Listed in This Manual" on page 15 to 17 and "Common Safety Instructions for Control Series" on page 59 and "Common Safety Instructions for LED Digital Pressure Sensors, Digital Pressure Sensors & Pressure Sensors" on page 77.

Warning

1. The cable can be connected to or disconnected from the connector. But avoid connection and disconnection unless it is absolutely necessary, for it will put burdens on the cable or the board.

Caution

1. Although performance will not be affected even when pressure of around 0.5MPa (72.5psi) is applied, avoid continued application of pressure greater than 0.2MPa (29psi) during vacuum breaking. Prolonged application of such pressure may possibly cause damage to the sensors.
2. To set pressure and differential response, turn trimmer slightly with a screw driver within the prescribed range of rotation. Trying to adjust trimmer rotation by applying excessive force may possibly damage to the trimmer and base board.
3. As for power, use a stable direct current.
4. Insert a surge voltage absorption circuit in relays connected to output terminals and power source terminals (relays, electromagnetic valves, etc.). Do not use an electric current exceeding 80mA.
5. Ground the FG terminal when unit power sources, such as a switching power source unit, are used.
6. Do not short-circuit output terminals (black with a gray lead wire) and other terminals.
7. Avoid strong impacts and excessive force to the sensor body.
8. To install the sensor, use the specially prepared M2.5 screw. Tighten it to the recommended torque.
9. Fluid used must be kept in a pristine state.

| Tube Fitting Type | Direct Mounting Type |
|-----------------------------------|---|
| VUS Negative Pressure Type | VUS Negative Pressure Type |
| | |
| Model | Model |
| VUS21□□-4 | VUS21□□-F |
| VUS21□□-6 | Internal Thread Type VUS Negative Pressure Type |
| VUS21□□-8 | |
| | |
| | Model |
| | VUS21□□-M5 |