

PRESSURE SWITCHES WITH GAUGE

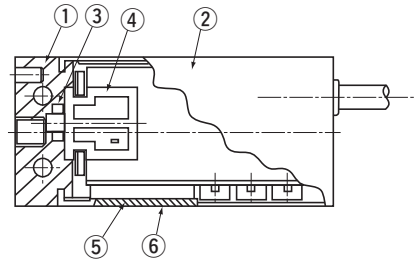
PS6



FEATURES

- Solidstate pressure switch with no mechanical moving parts
- 2 types of pressure ports are available
- Open collector output of either NPN or PNP is available
- Analog output type available

INTERNAL STRUCTURE (M5 female screw)



| Part name | Material |
|-----------------------|---------------------------------|
| ① Pressure port | POM (Polyoxymethylene) |
| ② Housing | PC (Polycarbonate) |
| ③ "O" ring | Fluoro-rubber |
| ④ Sensor module board | — |
| ⑤ Protection panel | PET (Polyethyleneterephthalate) |
| ⑥ Main panel | |

MODEL NUMBER DESIGNATION

PS6 - 102V - NAR

Series name

Rated pressure range

102 : 100 kPa
103 : 1000 kPa

Pressure reference

G : Gauge
V : Gauge (Vacuum)

Pressure port

R : R1/8 male screw with M5 female screw
M : M5 female screw

Output

A : 1 SW output and adjustable hysteresis + Analog output
W : 2 SW outputs

Switch output interface

N : NPN open collector
P : PNP open collector

LIST OF MODEL NUMBERS

| Pressure port | Outputs | Switch output | 102V | 102G | 103G |
|------------------|---|---------------------------|--------------|--------------|--------------|
| | | | 0 ~ -100 kPa | 0 ~ 100 kPa | 0 ~ 1000 kPa |
| R 1/8 male screw | Adjustable hysteresis switch output + Analog output | NPN open collector output | PS6-102V-NAR | PS6-102G-NAR | PS6-103G-NAR |
| | | PNP open collector output | PS6-102V-PAR | PS6-102G-PAR | PS6-103G-PAR |
| | Switch outputs (2 points) | NPN open collector output | PS6-102V-NWR | PS6-102G-NWR | PS6-103G-NWR |
| | | PNP open collector output | PS6-102V-PWR | PS6-102G-PWR | PS6-103G-PWR |
| M 5 female screw | Adjustable hysteresis switch output + Analog output | NPN open collector output | PS6-102V-NAM | PS6-102G-NAM | PS6-103G-NAM |
| | | PNP open collector output | PS6-102V-PAM | PS6-102G-PAM | PS6-103G-PAM |
| | Switch outputs (2 points) | NPN open collector output | PS6-102V-NWM | PS6-102G-NWM | PS6-103G-NWM |
| | | PNP open collector output | PS6-102V-PWM | PS6-102G-PWM | PS6-103G-PWM |

※ Verify the above model numbers when placing orders.

PS6

PRESSURE SWITCHES WITH GAUGE

STANDARD SPECIFICATIONS

● Unless otherwise specified, the specs are defined at an ambient temperature of 25 ± 5 °C and excitation voltage of 12 V DC.

| Item | Model number | PS6 | | | |
|------------------------|---|------------|--|------------|--------------|
| | | 102V | 102G | 103G | |
| General specifications | Pressure reference | Gauge | | | |
| | Rated pressure range | kPa | 0 ~ -100 | 0 ~ 100 | 0 ~ 1000 |
| | Maximum pressure | kPa | 200 | 200 | 1500 |
| | Break-down pressure | kPa | 500 | 500 | 2000 |
| | Operating temp. range | °C | -10 ~ 60 | | |
| | Compensated temp. range | °C | 0 ~ 50 | | |
| | Operating humidity | %RH | 35 ~ 85 (No condensation) | | |
| | Storage temp. | °C | -20 ~ 70 (Atmospheric pressure, humidity 65 %RH maximum) | | |
| | Pressure medium | | Non-corrosive gases | | |
| | Insulation resistance | MΩ min. | 100 (500 V DC) | | |
| | Dielectric strength | | 500 V AC, 60 s (Leakage current 1 mA maximum) | | |
| | Pressure port | | R 1/8 (Female screw) or M5 | | |
| | Net weight | g | Approx. 50 (Including cable) | | |
| Power | Supply voltage | V DC | 12 ~ 24 V \pm 10 % (Including ripple percentage) | | |
| | Consumption current | mA max. | 35 | | |
| Display | Display element | | 2-digit LED | | |
| | Rated display range | | -0 ~ -99 kPa | 0 ~ 99 kPa | .0 ~ .99 MPa |
| | Display accuracy 0 ~ 50°C (Reference temp. 25 °C) | | \pm 3 %F.S. \pm 2counts | | |
| | Resolution | | 1 count | | |
| Switch output | No. of outputs | | 1 or 2 | | |
| | Output interface | | (NPN/PNP) Open collector output (NPN or PNP) | | |
| | Setting method | | Adjustable by VR | | ※ 1 |
| | Adjustable range | | 0 ~ 100 of rated pressure | | ※ 2 |
| | Display | | Red LED ON (W type only : SW1 Red, SW2 Green) | | |
| | Accuracy 0 ~ 50°C (Reference temp. 25 °C) | %F.S. | \pm 3 | | |
| | Switch hysteresis | | Approx. 0 ~ 15 % of the set value (W type only 2 % F.S. maximum) | | |
| | Switching capacity | | 30 V 80 mA maximum | | |
| | Residual voltage | V maximum | 0.8 (NPN), 1.2 (PNP) | | |
| Response | ms | Approx. 2 | | | |
| Analog output | Output voltage | V | 1 ~ 5 | | |
| | Zero voltage | V | 1 \pm 0.1 | | |
| | Span voltage | V | 4 \pm 0.1 | | |
| | Output current | mA maximum | 1 (Load resistance 5 kΩ minimum) | | |

※ 1 : Please set adjusting torque at 30 mN·m maximum.

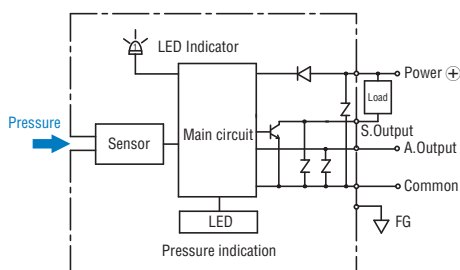
※ 2 : The actual setting range adjustable by VR has a little overrunning margin beyond the rated display of 0 through 99. This could cause the setting value of VR may be under "0" or over "99".

ENVIRONMENTAL CHARACTERISTICS

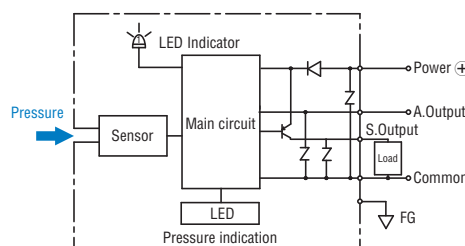
| Test item | Test conditions | Permissible change |
|---------------------|---|--|
| Vibration | 10 ~ 500 Hz, 1.5 mm maximum/98.1 m/s ² , 3 directions for 2 hours each | Pressure indication, switch operating pressure and analog output variation : ± 2 %F.S., maximum each after test |
| Shock | 196 m/s ² , 3 directions for 3 times each | |
| Moisture resistance | 40 °C, 90 ~ 95 %RH, 240 hrs. | |
| Pressure cycling | 0 ~ Rated pressure, 10 ⁶ cycles | |
| EMC | EMI : EN55011: 2007, A2 : 2007 Group 1, class B EMS : EN61326-1 : 2006 Table 2 | Pressure indication, switch operating pressure and analog output variation : ± 5 %F.S., maximum during test |

CIRCUIT DIAGRAMS

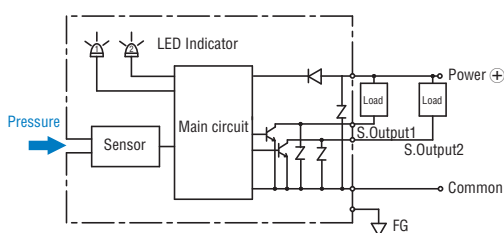
NAM, NAR (NPN/Adjustable hysteresis switch)



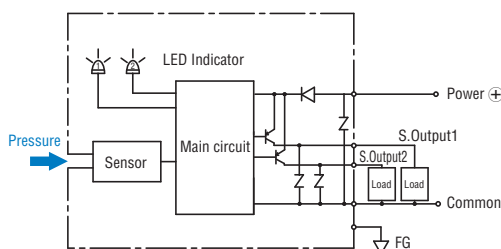
PAM, PAR (PNP/Adjustable hysteresis switch)



NWM, NWR (NPN/2 switch outputs)



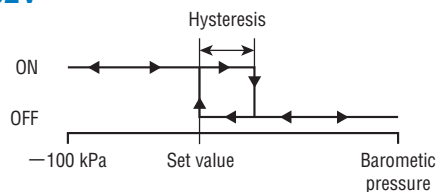
PWM, PWR (PNP/2 switch outputs)



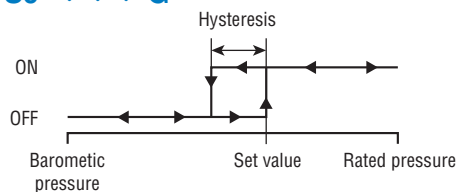
SWITCHING OPERATION

The switch turns on at the set pressure and turns off at the set pressure minus the hysteresis.

PS6-102V



PS6- * * * G



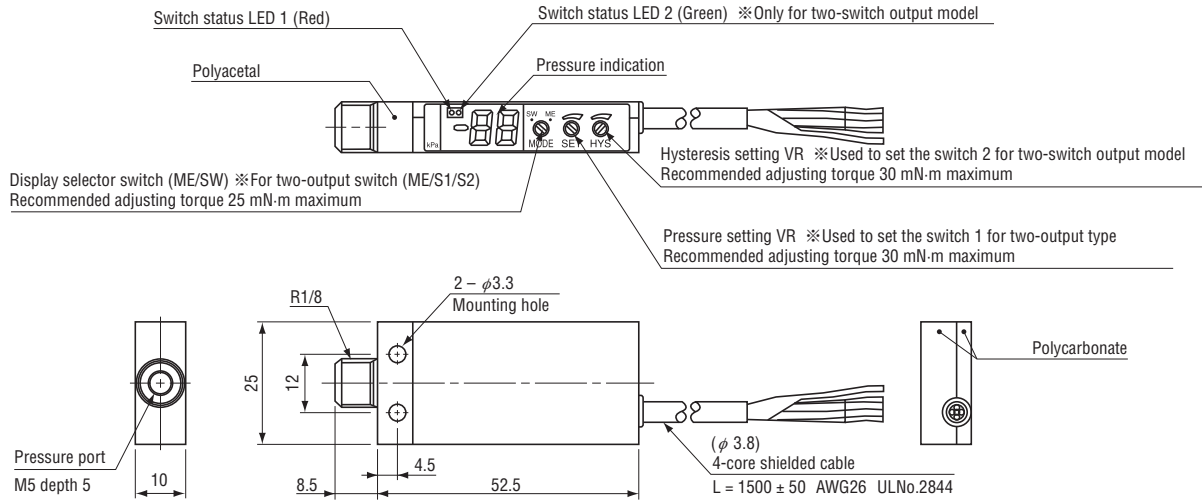
※ * A * is adjustable hysteresis type.

PS6 PRESSURE SWITCHES WITH GAUGE

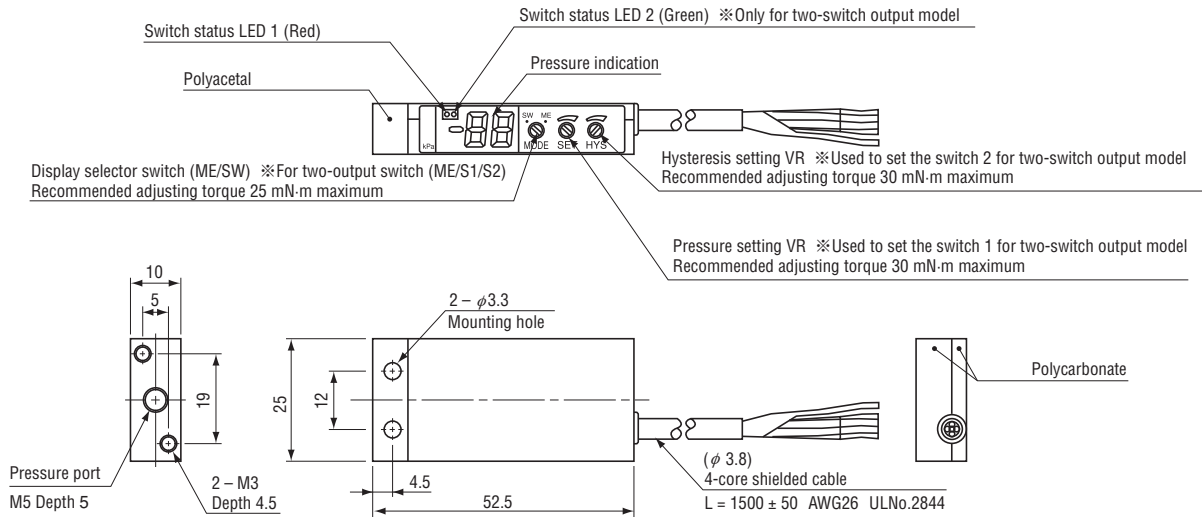
OUTLINE DIMENSIONS

Unless otherwise specified, tolerance : ± 0.5 (Unit: mm)

(NAR, PAR, NWR, PWR)



(NAM, PAM, NWM, PWM)



PS6 (NAM, NAR, PAM, PAR)

| Wire color | Connection |
|------------|---------------|
| Brown | Power ⊕ |
| Black | Switch output |
| White | Analog output |
| Blue | Common |
| Shield | N.C. |

PS6 (NWM, NWR, PWM, PWR)

| Wire color | Connection |
|------------|-----------------|
| Brown | Power ⊕ |
| Black | Switch output 1 |
| White | Switch output 2 |
| Blue | Common |
| Shield | N.C. |

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