

PRESSURE SWITCHES

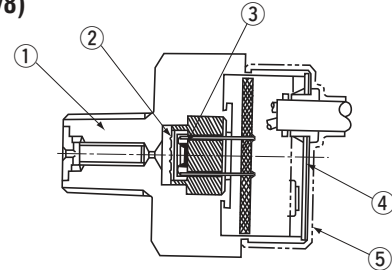
PS86/PS87



FEATURES

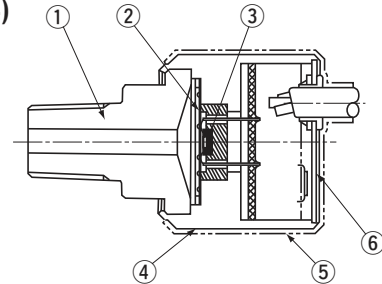
- Solidstate pressure switch with no mechanical moving parts
- Isolated output via a photo-coupler
- Switching pressure adjustable and hysteresis band adjustable
- Resistant against surge pressure (PS86)
- SUS 316L welded stainless steel diaphragm (PS86)
- High corrosion resistance by Hastelloy® diaphragm (PS87)

INTERNAL STRUCTURE PS86 (G 3/8)



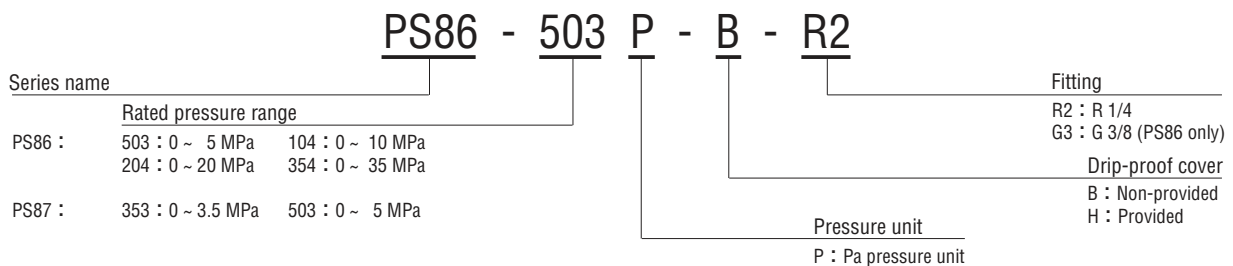
| Part name | Material |
|-----------------------------|-----------------|
| ① Fitting | Iron, Ni-plated |
| ② Stainless steel diaphragm | SUS 316L |
| ③ Sensor chip | Silicone |
| ④ Back cover | SUS 303 |
| ⑤ Drip-proof cover | Silicone rubber |

INTERNAL STRUCTURE PS87 (R 1/4)



| Part name | Material |
|-----------------------------|-----------------|
| ① Fitting | SUS 316 |
| ② Stainless steel diaphragm | Hastelloy® C-22 |
| ③ Sensor chip | Silicone |
| ④ Housing | SUS 316 |
| ⑤ Drip-proof cover | Silicone rubber |
| ⑥ Back cover | SUS 303 |

MODEL NUMBER DESIGNATION



- ※ Please refer to the LIST OF MODEL NUMBERS when placing orders.
- ※ Hastelloy® is a resistered trade name of Haynes International Inc.

PS86 / PS87

PRESSURE SWITCHES

LIST OF MODEL NUMBERS

| Pressure medium | Fitting | Pressure reference | | Gauge | | | | |
|-------------------|---------------|--------------------|-----------------------------|----------------|----------------|----------------|----------------|--------|
| | | Drip-proof cover | MPa Rated pressure range | 0 ~ 3.5 | 0 ~ 5 | 0 ~ 10 | 0 ~ 20 | 0 ~ 35 |
| Hydraulic oil | R2 (R 1/4) | Non-provided | / | PS86-503P-B-R2 | PS86-104P-B-R2 | PS86-204P-B-R2 | PS86-354P-B-R2 | |
| | | Provided | / | PS86-503P-H-R2 | PS86-104P-H-R2 | PS86-204P-H-R2 | PS86-354P-H-R2 | |
| | G3 (G 3/8) | Non-provided | / | PS86-503P-B-G3 | PS86-104P-B-G3 | PS86-204P-B-G3 | PS86-354P-B-G3 | |
| | | Provided | / | PS86-503P-H-G3 | PS86-104P-H-G3 | PS86-204P-H-G3 | PS86-354P-H-G3 | |
| Gases/ Liquids | R2 (R 1/4) | Non-provided | PS87-353P-B-R2 | PS87-503P-B-R2 | / | / | / | |
| | | Provided | PS87-353P-H-R2 | PS87-503P-H-R2 | / | / | / | |

☐: Not available

※ Verify the above model numbers when placing orders.

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 | PS86 | | | | PS87 | | |
|------------------------|-------------------------|---------------|---|------|------|------|--|----|
| | | 503P | 104P | 204P | 354P | 353P | 503P | |
| General specifications | Pressure reference | Gauge ※ 1 | | | | | | |
| | Rated pressure range | MPa | 5 | 10 | 20 | 35 | 3.5 | 5 |
| | Maximum pressure | MPa | 10 | 20 | 40 | 52.5 | 7 | 10 |
| | Operating temp. range | °C | - 10 ~ 75 | | | | | |
| | Compensated temp. range | °C | 0 ~ 50 | | | | | |
| | Operating humidity | %RH | 35 ~ 85 (No condensation) | | | | | |
| | Storage temp. | °C | - 20 ~ 90 (Atmospheric pressure, humidity 65 %RH maximum) | | | | | |
| | Pressure medium ※ 2 | | Hydraulic oil | | | | Corrosive gases/liquids compatible with Hastelloy C-22 and SUS 316 | |
| | Insulation resistance | MΩ minimum | 100 (500 V DC) | | | | | |
| | Dielectric strength | | 350 V AC, 60 s (Leakage current 0.5 mA maximum) | | | | | |
| | Pressure port | | R 1/4、G 3/8 | | | | R 1/4 | |
| | Net weight | g | Approx. 170 | | | | Approx. 190 | |
| | Protection grade | | Without drip-proof cover : IP-54, With drip-proof cover : IP-65 | | | | | |

※ 1 The transducer measures gauge pressure using an absolute pressure sensing element.

※ 2 Hydraulic oil is used as a measurement medium at the time of delivery inspection.

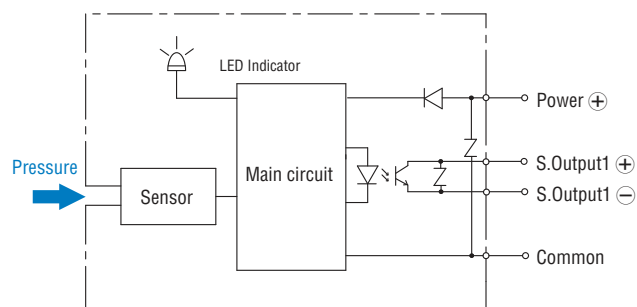
PS86 / PS87 PRESSURE SWITCHES

| Item | Model number | PS86 | | | | PS87 | | |
|---------------|---------------------|---|-------|-----------------------------------|------|------|-----------|-----|
| | | 503P | 104P | 204P | 354P | 353P | 503P | |
| Power | Supply voltage | 12 ~ 24 V ± 10 % | | | | | | |
| | Consumption current | maximum 15 mA | | | | | | |
| Switch output | No. of outputs | 1 | | | | | | |
| | Output interface | Open collector output which insulated a photo-coupler | | | | | | |
| | Setting method | Adjustable by VR | | | | | | |
| | Adjustable range | 5 ~ 105 % of rated pressure range | | | | | | |
| | Display | Red LED ON | | | | | | |
| | Accuracy | 0 ~ 50 °C (Reference temp.: 25 °C) | %F.S. | | | | ± 3 | |
| | Hysteresis | %F.S. | | Approx. 1 ~ 10 % of setting range | | | | |
| | Switching capacity | 35 V DC 100 mA | | | | | | |
| | Residual voltage | maximum | | V | | | | 1.2 |
| | Response | ms | | Approx. 20 | | | Approx. 2 | |

ENVIRONMENTAL CHARACTERISTICS

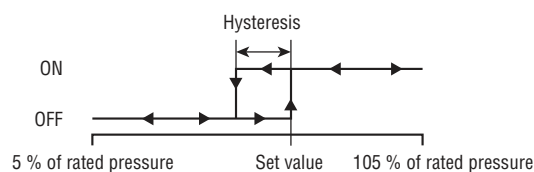
| Test item | Test conditions (At 25 ± 5 °C) | Permissible change |
|---------------------|--|--|
| Vibration | 10 ~ 500 Hz, 1.5 mm maximum/98.1 m/s ² , 3 directions for 2 hours each | Switch output setting: ± 3 %F.S. maximum |
| Shock | 490 m/s ² , 3 directions for 3 times each | |
| Pressure cycling | 10 ⁶ cycles Rated pressure range | |
| Moisture resistance | 40 °C, 90 ~ 95 %RH, 240 hrs. | |

INTERNAL ELECTRICAL SCHEMATICS



SWITCH OUTPUT SCHEMATICS

● PS86/87- * * * P



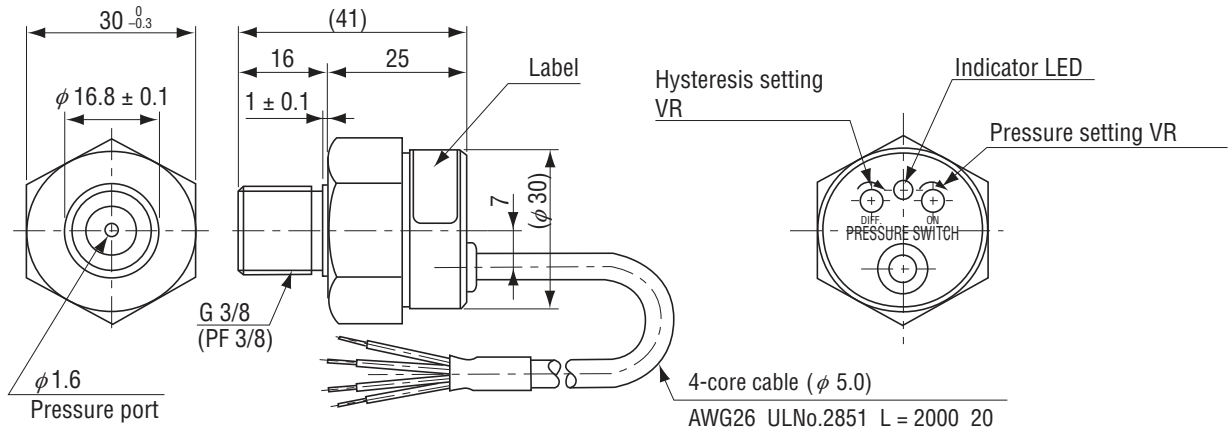
※ Adjustable hysteresis

PS86 / PS87 PRESSURE SWITCHES

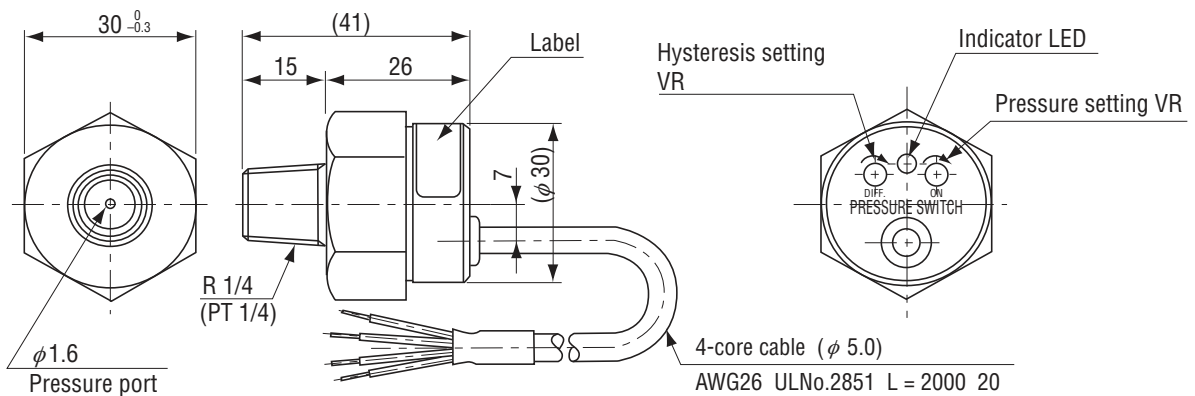
OUTLINE DIMENSIONS

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

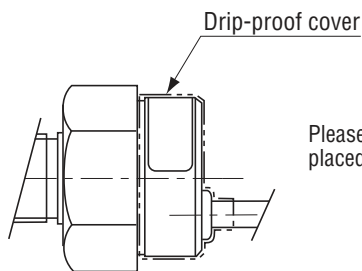
Configurations of joint G3 (G 3/8) type



Configurations of joint R2 (R 1/4) type



Drip-proof cover type



Please make sure that the drip-proof cover is properly placed over the main body and the cable.

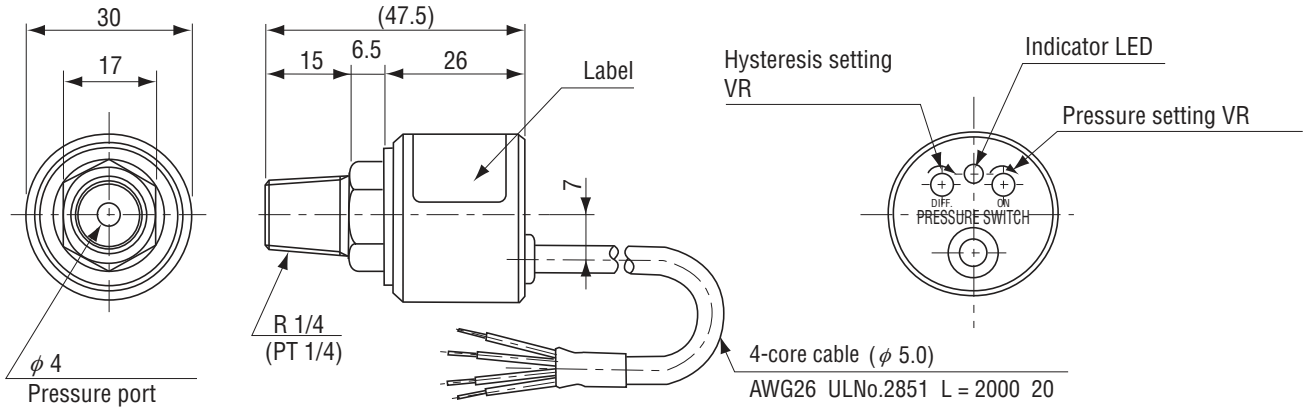
| Wire color | Connection |
|------------|------------|
| Red | Power ⊕ |
| Black | Power ⊖ |
| White | Output ⊕ |
| Green | Output ⊖ |

PS86 / PS87 PRESSURE SWITCHES

OUTLINE DIMENSIONS

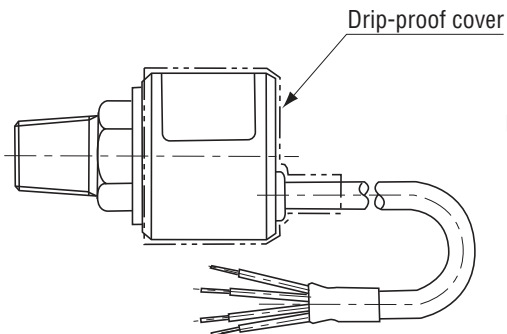
Unless otherwise specified, tolerance : ± 0.5 (Unit: mm)

● PS87



| Wire color | Connection |
|------------|------------------|
| Red | Power \oplus |
| Black | Power \ominus |
| White | Output \oplus |
| Green | Output \ominus |

● Drip-proof cover type



Please make sure that the drip-proof cover is properly placed over the main body and the cable.