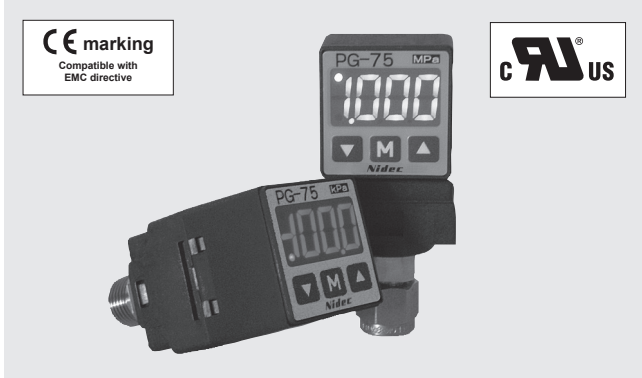


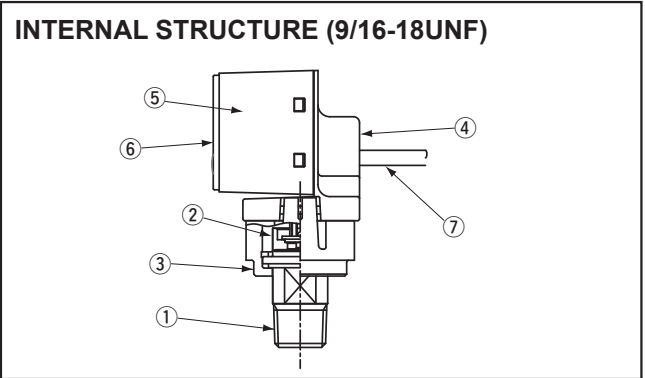
PRESSURE GAUGES

PG-75



FEATURES

- Compact, lightweight and multi-functional general-purpose pressure gauge.
- It is adopted welding integral structure with SUS304/316L at pressure receiving section.
- A pressure display function is substantial. (3 1/2digit, 7 segment LED, 2-color LED red / green change, Non-display mode)
- Two types of analog output, one is voltage output(1-5V), The other is current output (4-20mA)
- The gage pressure is (0~positive pressure), compound pressure range (negative pressure~positive pressure), to support maximum of 3.5 MPa.
- Comply with IP65, CE Marking and UL certification obtained.



| Part name | | Material |
|-----------|---------------|--------------------------------|
| ① | Fitting | SUS304 Diaphragm SUS316L |
| ② | Sensor module | |
| ③ | Sensor holder | PBT (UL-94-HB) |
| ④ | Adapter | |
| ⑤ | Housing | |
| ⑥ | Panel sheet | Polyester |
| ⑦ | Cable | Vinyl chlorid resin |

MODEL NUMBER DESIGNATION

PG-75 - 102R - N V R2 B

Series name

Rated pressure

102G : 0 ~ 100 kPa 102R : -100 ~ 100 kPa
 103G : 0 ~ 1.0 MPa 103R : -0.1 ~ 1.0 MPa
 353G : 0 ~ 3.5 MPa 353R : -0.1 ~ 3.5 MPa

Switch output interface

N : NPN open collector
 P : PNP open collector

Analog output

V : Voltage output (1-5 V)
 A : Current output (4-20 mA)

Pressure port

Blank : Stem mount
 B : Back mount

Fitting (With M5 female screw)

R1 : R1/8
 R2 : R1/4

PG-75 PRESSURE GAUGES

LIST OF MODEL NUMBERS

| Pressure port | Fitting | SW output | Analog output | Pressure range (Rated range analog output) | | | | | |
|---------------|----------|-------------------|-------------------|--|-------------------|-------------------|-------------------|-------------------|-------------------|
| | | | | (0~100 kPa) | (-100~100 kPa) | (0~1.0 MPa) | (-0.1~1.0 MPa) | (0~3.5 MPa) | (-0.1~3.5 MPa) |
| Stem | R1/8 | NPN | 1 ~ 5V | ⇒PG-75-102G-NVR1 | ⇒PG-75-102R-NVR1 | ⇒PG-75-103G-NVR1 | ⇒PG-75-103R-NVR1 | ⇒PG-75-353G-NVR1 | ⇒PG-75-353R-NVR1 |
| | | | 4 ~ 20mA | ⇒PG-75-102G-NAR1 | ⇒PG-75-102R-NAR1 | ⇒PG-75-103G-NAR1 | ⇒PG-75-103R-NAR1 | ⇒PG-75-353G-NAR1 | ⇒PG-75-353R-NAR1 |
| | | PNP | 1 ~ 5V | ⇒PG-75-102G-PVR1 | ⇒PG-75-102R-PVR1 | ⇒PG-75-103G-PVR1 | ⇒PG-75-103R-PVR1 | ⇒PG-75-353G-PVR1 | ⇒PG-75-353R-PVR1 |
| | 4 ~ 20mA | | ⇒PG-75-102G-PAR1 | ⇒PG-75-102R-PAR1 | ⇒PG-75-103G-PAR1 | ⇒PG-75-103R-PAR1 | ⇒PG-75-353G-PAR1 | ⇒PG-75-353R-PAR1 | |
| | R1/4 | NPN | 1 ~ 5V | ⇒PG-75-102G-NVR2 | ⇒PG-75-102R-NVR2 | ⇒PG-75-103G-NVR2 | ⇒PG-75-103R-NVR2 | ⇒PG-75-353G-NVR2 | ⇒PG-75-353R-NVR2 |
| | | | 4 ~ 20mA | ⇒PG-75-102G-NAR2 | ⇒PG-75-102R-NAR2 | ⇒PG-75-103G-NAR2 | ⇒PG-75-103R-NAR2 | ⇒PG-75-353G-NAR2 | ⇒PG-75-353R-NAR2 |
| PNP | | 1 ~ 5V | ⇒PG-75-102G-PVR2 | ⇒PG-75-102R-PVR2 | ⇒PG-75-103G-PVR2 | ⇒PG-75-103R-PVR2 | ⇒PG-75-353G-PVR2 | ⇒PG-75-353R-PVR2 | |
| | 4 ~ 20mA | ⇒PG-75-102G-PAR2 | ⇒PG-75-102R-PAR2 | ⇒PG-75-103G-PAR2 | ⇒PG-75-103R-PAR2 | ⇒PG-75-353G-PAR2 | ⇒PG-75-353R-PAR2 | | |
| Back | R1/8 | NPN | 1 ~ 5V | ⇒PG-75-102G-NVR1B | ⇒PG-75-102R-NVR1B | ⇒PG-75-103G-NVR1B | ⇒PG-75-103R-NVR1B | ⇒PG-75-353G-NVR1B | ⇒PG-75-353R-NVR1B |
| | | | 4 ~ 20mA | ⇒PG-75-102G-NAR1B | ⇒PG-75-102R-NAR1B | ⇒PG-75-103G-NAR1B | ⇒PG-75-103R-NAR1B | ⇒PG-75-353G-NAR1B | ⇒PG-75-353R-NAR1B |
| | | PNP | 1 ~ 5V | ⇒PG-75-102G-PVR1B | ⇒PG-75-102R-PVR1B | ⇒PG-75-103G-PVR1B | ⇒PG-75-103R-PVR1B | ⇒PG-75-353G-PVR1B | ⇒PG-75-353R-PVR1B |
| | 4 ~ 20mA | | ⇒PG-75-102G-PAR1B | ⇒PG-75-102R-PAR1B | ⇒PG-75-103G-PAR1B | ⇒PG-75-103R-PAR1B | ⇒PG-75-353G-PAR1B | ⇒PG-75-353R-PAR1B | |
| | R1/4 | NPN | 1 ~ 5V | ⇒PG-75-102G-NVR2B | ⇒PG-75-102R-NVR2B | ⇒PG-75-103G-NVR2B | ⇒PG-75-103R-NVR2B | ⇒PG-75-353G-NVR2B | ⇒PG-75-353R-NVR2B |
| | | | 4 ~ 20mA | ⇒PG-75-102G-NAR2B | ⇒PG-75-102R-NAR2B | ⇒PG-75-103G-NAR2B | ⇒PG-75-103R-NAR2B | ⇒PG-75-353G-NAR2B | ⇒PG-75-353R-NAR2B |
| PNP | | 1 ~ 5V | ⇒PG-75-102G-PVR2B | ⇒PG-75-102R-PVR2B | ⇒PG-75-103G-PVR2B | ⇒PG-75-103R-PVR2B | ⇒PG-75-353G-PVR2B | ⇒PG-75-353R-PVR2B | |
| | 4 ~ 20mA | ⇒PG-75-102G-PAR2B | ⇒PG-75-102R-PAR2B | ⇒PG-75-103G-PAR2B | ⇒PG-75-103R-PAR2B | ⇒PG-75-353G-PAR2B | ⇒PG-75-353R-PAR2B | | |

The products marked ⇒ are manufactured upon receipt of order basis.

STANDARD SPECIFICATIONS

| | Model number | PG-75 | | | | | | |
|------------------------|--------------------------------------|---|---|-------------|------------------|----------------|----------------|----------------|
| | | 102G | 103G | 353G | 102R | 103R | 353R | |
| General specifications | Pressure reference | Gauge | | | Gauge (Compound) | | | |
| | Rated pressure | Pr(L) ~ Pr(H) | 0 ~ 100 kPa | 0 ~ 1.0 MPa | 0 ~ 3.5 MPa | -100 ~ 100 kPa | -0.1 ~ 1.0 MPa | -0.1 ~ 3.5 MPa |
| | Maximum pressure | Pmax | 200 kPa | 2 MPa | 5 MPa | 200 kPa | 2 MPa | 5 MPa |
| | Break-down pressure | Pb | 300 kPa | 3 MPa | 7 MPa | 300 kPa | 3 MPa | 7 MPa |
| | Full-scale | FS | 100 KPa | 1 MPa | 3.5 MPa | 200 kPa | 1.1 MPa | 3.6 MPa |
| | Pressure Medium | Corrosive gases/Liquids compatible with SUS304 and SUS316L | | | | | | |
| | Sealed liquid | Silicone oil | | | | | | |
| | Operating voltage | Vopr | 10.8 ~ 30 VDC (Including ripple percentage) | | | | | |
| | Consumption current | 50 mA maximum (Not included current analog output) | | | | | | |
| | Protection grade | IP65 of IEC | | | | | | |
| | Operating temp. | -10 ~ 50°C(Storage Temperature : -20 ~ 70 °C) | | | | | | |
| | Operating humidity | 35 ~ 85 %RH | | | | | | |
| | Insulation resistance | 100 MΩ minimum at 500 VDC between bundled leads and pressure port | | | | | | |
| | Dielectric strength | 1 minuts at 500 VAC between bundled leads and pressure port (1mA maximum leakage) | | | | | | |
| | Pressure Port | R1 (R1/8)、R2 (R1/4) | | | | | | |
| Type of mounting | Stem mount, Back mount | | | | | | | |
| Fitting materials | Diaphragm : SUS316L、Fitting : SUS304 | | | | | | | |
| Net Weight | Approx. 115±15 g (incl. 2 m cable) | | | | | | | |

PG-75

PRESSURE GAUGES

STANDARD SPECIFICATIONS

| | Model number | PG-75 | | | | | |
|-------------------|--------------------|--|------|------|------|------|------|
| | | 102G | 103G | 353G | 102R | 103R | 353R |
| Switch output | Number of outputs | Two outputs (NPN/PNP) | | | | | |
| | Switching capacity | 30 VDC / 100 mA maximum | | | | | |
| | Residual voltage | 1.2 V maximum (NPN) / 2.2 V maximum (PNP), Load current 100 mA | | | | | |
| | Hysteresis | 0 ~ Approx 0.3Pr(H),(Adjustable) | | | | | |
| | Repeatability | ±0.3 %F.S. / Reference temp. 25 °C | | | | | |
| | Accuracy | ±2%F.S. (Integrated accuracy:Including errors of setting, linearity, hysteresis and thermal error.) | | | | | |
| | Response | Approx 5 ms (Digital filter settings :”F0”) | | | | | |
| | Protection | Exists / Short circuit protection(Switch Overload current detection :Approx 150 mA minimum) | | | | | |
| | State indication | SW monitor LED(2 points) ,Lighted when the switch output is ON.(Pressure display inverted colors) | | | | | |
| | Analog output | Voltage output | | | | | |
| Vo | | 1 ~ 5V / Pr(L) ~ Pr(H) , F.S. : 4 V | | | | | |
| Accuracy | | ±2%F.S. (Integrated accuracy) /Measurement load resistance(1 MΩ maximum) | | | | | |
| Resolution | | Approx 2.7 mV (Approx. 0.068% F.S.)(11bit D AC) | | | | | |
| Output resistance | | Approx. 1 kΩ(Internal impedance) | | | | | |
| Response | | Approx. 2 ms maximum | | | | | |
| Current output | | | | | | | |
| Io | | 4 ~ 20 mA / Pr(L) ~ Pr(H), F.S. : 16 mA | | | | | |
| Accuracy | | ±2%F.S. (Integrated accuracy) /Measurement load resistance(250 Ω maximum) | | | | | |
| Resolution | | Approx. 0.011mA (Approx 0.068% F.S.) (11bit DAC) | | | | | |
| Output resistance | | Vopr ≤ 18 VDC : 50 ~ 300 Ω, Vopr > 18 VDC : 50 ~ 500 Ω | | | | | |
| Response | | Approx. 2 ms maximum | | | | | |
| Pressure display | Display element | 3 1/2 digits, 7 segment LED (Red/Green) Reverse display selectable in tandem with SW1. | | | | | |
| | Display cycle | 5 times /sec (moving average) | | | | | |
| | Accuracy | ±2% F.S. (Integrated accuracy) | | | | | |

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 , three directions, two hours each | Pressure indication, switch operating pressure and analog output (zero and span) : ± 2%F.S. maximum during test |
| Shock | 490 m/s ² , three directions, three times each | |
| Pressure cycling | 0 ~ Rated pressure, 10 ⁶ cycles | |
| Moisture resistance | 40 °C, 90 ~ 95 %RH, 240 hrs. | |

MULTIPLIER FACTOR

The multiplier factor is selectable by changing the value of third digit on the display during the operation setting.

| Code/ Multiplier Factor | Pressure Range / Display specification rated pressure | | | | | |
|----------------------------|---|----------------|--------------|---------------|-------------|--------------|
| | 102G | 102R | 103G | 103R | 353G | 353R |
| 1:×1 (kPa) | 0.0 ~ 100.0 | -100.0 ~ 100.0 | 0 ~ 1000 | -100 ~ 1000 | — | — |
| 2:×0.0102 | .000 ~ 1.020 | -1.020 ~ 1.020 | 0.00 ~ 10.20 | -1.02 ~ 10.20 | 0.0 ~ 35.7 | -1.0 ~ 35.7 |
| 3:×10.2 | 0 ~ 1020 | -1020 ~ 1020 | — | — | — | — |
| 4:×7.501 | 0 ~ 750 | -750 ~ 750 | — | — | — | — |
| 5:×0.01 | .000 ~ 1.000 | -1.000 ~ 1.000 | 0.00 ~ 10.00 | -1.00 ~ 10.00 | 0.0 ~ 35.0 | -1.0 ~ 35.0 |
| 6:×10 | 0 ~ 1000 | -1000 ~ 1000 | — | — | — | — |
| 7:×0.145 | 0.0 ~ 14.5 | -14.5 ~ 14.5 | 0.0 ~ 145.0 | -14.5 ~ 145.0 | 0 ~ 508 | -15 ~ 508 |
| 8:×0.001 (MPa) | — | — | .000 ~ 1.000 | -.100 ~ 1.000 | 0.00 ~ 3.50 | -0.10 ~ 3.50 |
| 9:×0.2953 | 0.0 ~ 29.5 | -29.5 ~ 29.5 | 0 ~ 295 | -30 ~ 295 | 0 ~ 1033 | -30 ~ 1033 |

- The settings indicated by "-" on the table above are not selectable because of resolution.
- Either "1" (for 102A, 102V, 102G, and 102R) or "8" (for 103G, 103R, 353G and 353R) are set prior to delivery.
- Changes of the multiplier factor apply to display values. Also, note the changes reset switch setting value and hysteresis.

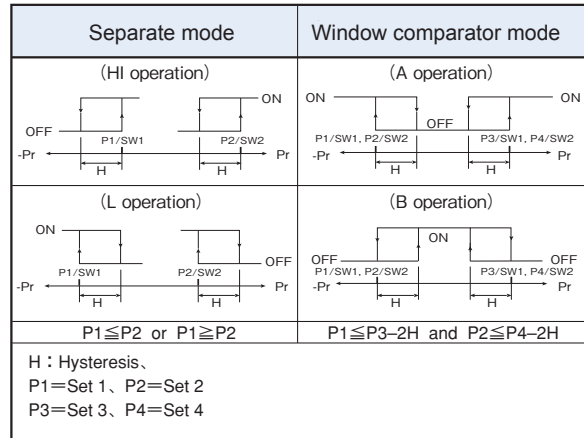
SWITCH OUTPUT MOD

SW output is selectable by changing the value of first digit on the display.

<SW Operation Code>

| Output Mode | SW1 | | | | SW2 | | | |
|---------------------------------------|----------|----|------------------------------------|---|----------|----|------------------------------------|---|
| | Separate | | Window comparator | | Separate | | Window comparator | |
| Operation | HI | LO | A | B | HI | LO | A | B |
| 1 | ○ | | | | ○ | | | |
| 2 | ○ | | | | | ○ | | |
| 3 | | ○ | | | | ○ | | |
| 4 | | ○ | | | | | ○ | |
| 5 | | | ○ | | | | ○ | |
| 6 | | | ○ | | | | | ○ |
| 7 | | | | ○ | | | | ○ |
| 8 | | | | ○ | | | | ○ |
| Pressure setting (Operating point) | Set 1 | | (Minimum) Set 1 (Maximum) Set 3 | | Set 2 | | (Minimum) Set 1 (Maximum) Set 4 | |

<Switch Operation Mode>

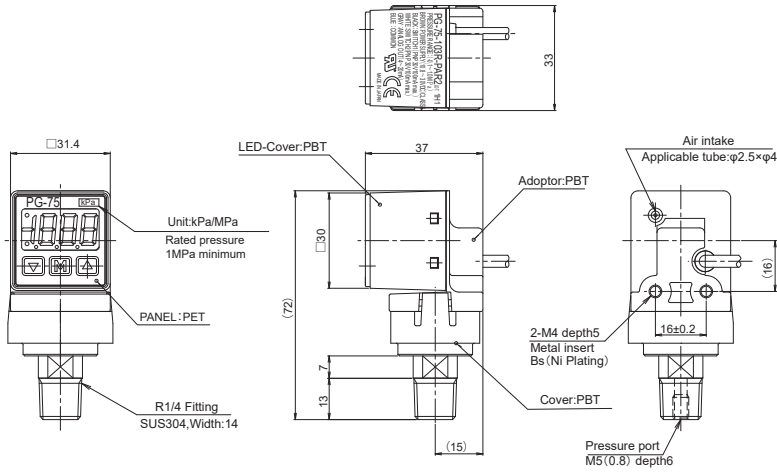


- In the Separate mode, SW 1 corresponds to Setting 1 and SW2 corresponds to Setting 2.
- In the Window Comparator Mode, SW 1 corresponds to the Setting 1 (lower limit) and Setting 3 (upper limit). Also, SW2 corresponds to the setting 2 (lower limit) and setting 4 (upper limit).
- The Hysteresis (H) setting is common to SW 1 and SW 2 operations.
- When SW operation is changed between the Separate Mode and Window Comparator Mode, SW pressure settings that are set separately will be reset.

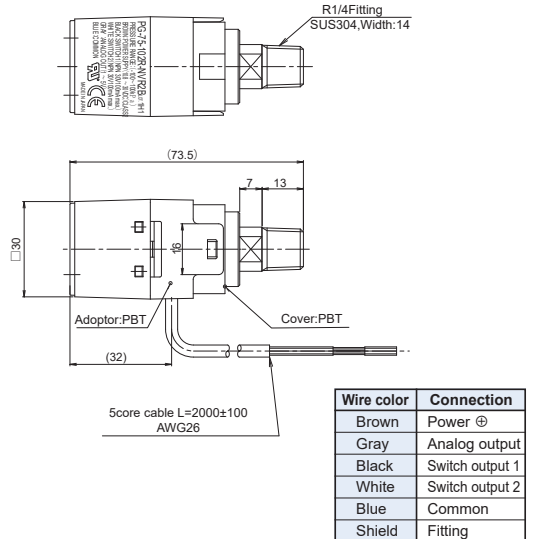
PG-75 PRESSURE GAUGES

EXTERNALS SPECIFICATION (unit:mm)

Vertical installation type

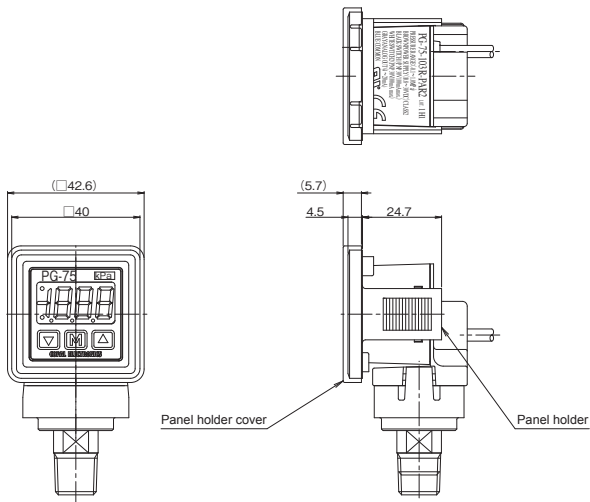


The horizontal installation type

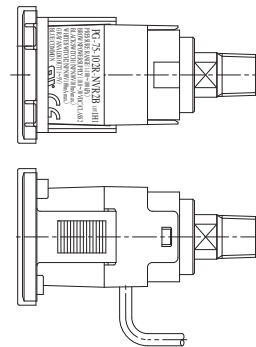


MEANS OF ATTACHMENT (Option)

Vertical installation type

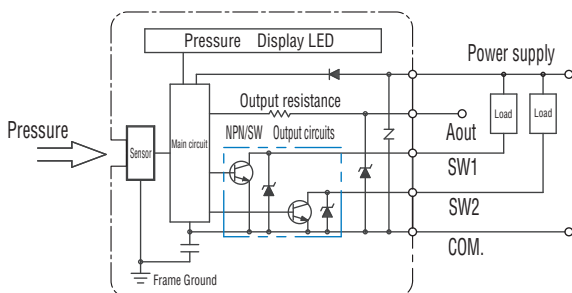


The horizontal installation type

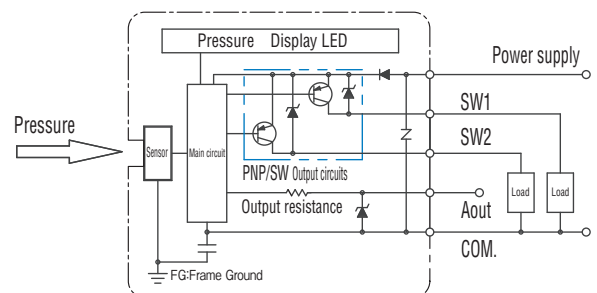


INTERNAL ELECTRICAL SCHEMATICS

NV/NA:NPN



PV/PA:PNP

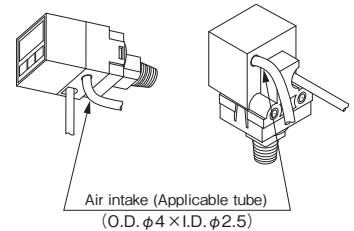


PG-75 PRESSURE GAUGES

Others

● Tube at air intake

If there is a possibility that liquids such as water, oil etc splash to the main body and it may flow into the inside of the product through the air intake, connect a silicon tube to the air intake and position the other end of the tube in a suitable safe place. At that time, do not bend the tube or block the other end of the tube.



● Piping

Use a wrench on the hexagon of the fitting. Do not hold the main body when tightening.

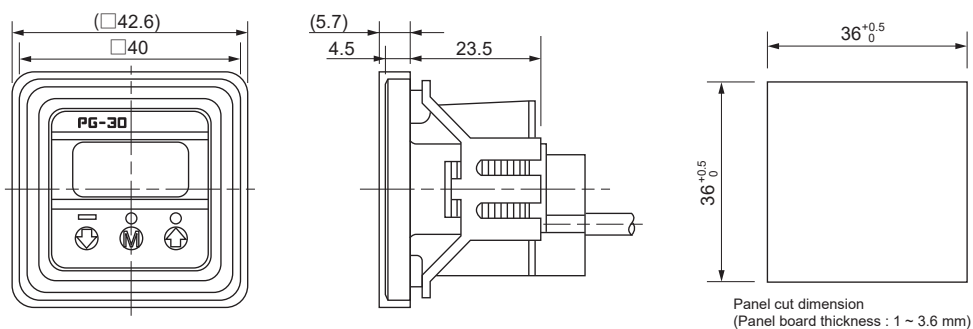
ACCESSORIES (Sold separately)

| Name | Series name | Contents | Applicable model |
|--|-------------|---|---|
| Panel holder set | ACPG-003 | Panel holder cover Panel holder Panel stopper (2pcs.) | PG-30 · PG-35 · PG-75 PG-35H · PG-35L · PS30 |
| Holder cover set (For protecting gauge operating panel) | ACPG-004 | Panel holder cover Panel holder | PG-30 · PG-35 · PG-75 PG-35H · PG-35L · PS30 |
| Holder stopper set | ACPG-007 | Panel holder Panel stopper (2pcs.) | PG-30 · PG-35 · PG-75 PG-35H · PG-35L · PS30 |

HOW TO MOUNT OPTIONAL ACCESSORIES (Sold separately)

(Unit: mm)

● PG-30 · PG-35 · PG-35H · PG-35L · PG-75 · PS30 Panel cut holder set & holder cover set



● Panel holder cover set

