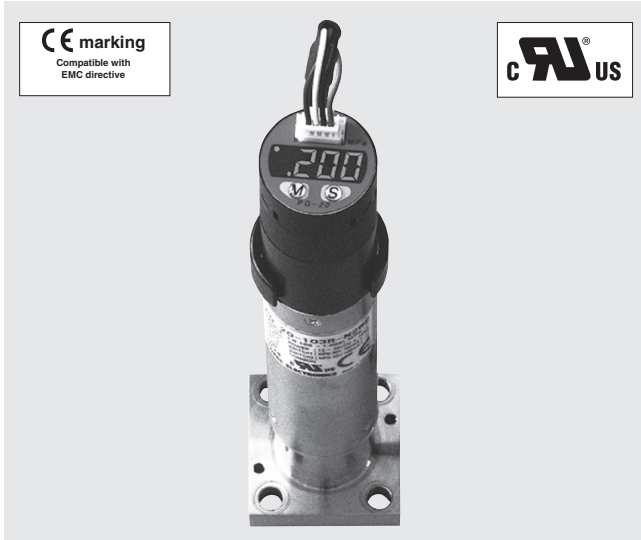


PRESSURE GAUGES

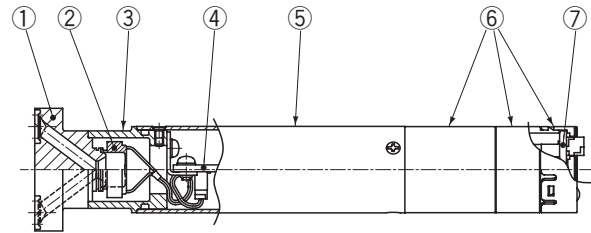
PG-20



FEATURES

- External diameter ϕ 20mm. Easily installable fitting block
- Rotable display part (90°step, 270° full travel)
- Wide combination of output types (switch, current or voltage) available
- Integrally welded structure of sensing chip and fitting block

INTERNAL STRUCTURE (W2)



| Part name | | Material |
|-----------|---------------|------------------------|
| ① | Fitting block | SUS316L of Double melt |
| ② | Sensor module | SUS316L of Double melt |
| ③ | Sensor holder | SUS316L |
| ④ | Amp board | — |
| ⑤ | Cover | SUS316L |
| ⑥ | Case | PBT |
| ⑦ | Display board | — |

MODEL NUMBER DESIGNATION

PG - 20 - 103 R - N2 W2

Series name

Rated pressure

502G : 0 ~ 0.5 MPa 502R : -0.1 ~ 0.5 MPa
103G : 0 ~ 1.0 MPa 103R : -0.1 ~ 1.0 MPa

Pressure Reference / Rated analog out put range

G : Gauge pressure (Positive) / 0MPa ~ Rated pressure
R : Gauge pressure (Compound) / -0.1MPa ~ Rated pressure

Fitting block spec.

W1:1.5 inches W-Seal
W2:1.125 inches W-Seal

Output specification

B : SW Nothing
N2 : SW Two outputs (NPN open collector)
P2 : SW Two outputs (PNP open collector)
NV : SW One output (NPN open collector)
+ Voltage output (1 ~ 5V)
PV : SW One output (PNP open collector)
+ Voltage output (1 ~ 5V)
NA : SW One output (NPN open collector)
+ Current output (4 ~ 20mA)
PA : SW One output (PNP open collector)
+ Current output (4 ~ 20mA)

LIST OF MODEL NUMBERS

| Output specification | | Rated Pressure | |
|----------------------|----------------|-----------------|-----------------|
| Switch output | Analog output | 502 | 103 |
| None | None | PG-20-502R-BW* | PG-20-103R-BW* |
| Two outputs | | PG-20-502R-N2W* | PG-20-103R-N2W* |
| One outputs | Voltage output | PG-20-502R-P2W* | PG-20-103R-P2W* |
| | | PG-20-502□-NVW* | PG-20-103□-NVW* |
| | Current output | PG-20-502□-PVW* | PG-20-103□-PVW* |
| | | PG-20-502□-NAW* | PG-20-103□-NAW* |
| | | PG-20-502□-PAW* | PG-20-103□-PAW* |

Note 1. W* : Fitting block spec. (W1/W2)

Note 2. □ : G (Positive) / R (Compound)

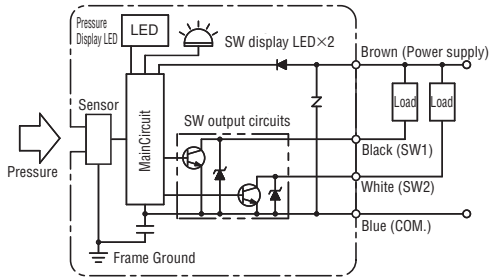
STANDARD SPECIFICATIONS

| Item | | Model number | PG-20 | |
|------------------------|----------------------------|---|--|--------------------|
| | | | 502 | 103 |
| General specifications | Pressure reference | | Gauge | |
| | Rated pressure range | Positive (G) | 0 ~ 0.5 MPa | 0 ~ 1.0 MPa |
| | | Compound (R) | - 0.1 ~ 0.5 MPa | - 0.1 ~ 1.0 MPa |
| | Maximum pressure | | 0.75 MPa | 1.5 MPa |
| | Vacuum pressure | | 1.4 × 10 ⁻⁴ Pa abs (minimum) | |
| | Leakage (He vacuum method) | | 5 × 10 ⁻¹² Pa·m ³ / sec. minimum (Weld in pressure port) | |
| | Operating temp.range | | - 10 ~ 50°C(No condensation) | |
| | Compensated temp. range | | 0 ~ 50°C | |
| | Operating humidity range | | 35 ~ 85% RH (No condensation) | |
| | Storage temp. range | | - 20 ~ 60°C(Atmospheric pressure, humidity 65%RH minimum) | |
| | Media | | Gases and Liquids compatible with SUS316L | |
| | Insulation resistance | | 50MΩ minimum (Between bundled electrical wirings and the pressure port. at 125VDC) | |
| | Pressure contact material | | SUS316L Double-Melt Material (Fitting and Sensor) | |
| | Pressure contact roughness | | (Ra : 0.15, Rz : 0.7) μ m minimum | |
| | Pressure contact particle | | Zero count of particle of the size 0.1m μ m or bigger (By our inspection standard) | |
| | Cable connector | | Cable length : 2m cable AWG26 / include cable holder | |
| | Protection grade | | IP40 | |
| Net weight | | Approx. 200g (W1) Approx. 110g (W2) | | |
| Voltage | Operating voltage | | Voltage output type and other : 12~24VDC±10% (including ripple) Current output type : 24VDC±10%(including ripple) | |
| | Current consumption | | 30mA minimum (No current flow from switch / analog output) | |
| | CE marking | | EN61326-1 : 2006, EN61326-2-3 : 2006 EMI : Class B, EMS : Annex BB | |
| | Display Method | | 3 -1/2 LED display (Red LED) | |
| Pressure Display | Rotation angle | | 270°(90° step) | |
| | Rated display range | Positive (G) | .000 ~ .500 MPa | .000 ~ 1.000 MPa |
| | | Compound (R) | - .100 ~ .500 MPa | - .100 ~ 1.000 MPa |
| | Display cycle | | 4 times / sec | |
| | Display accuracy | | ± 1.0% FS (The repeatability, linearity and hysteresis are contained) | |
| | Thermal error | | ± 0.1% FS / °C (0 ~ 50°C Reference temp. 25°C) | |
| | Resolution | | 1 digit | |
| | Over range | | **** Blinking of pressure display (110 % F.S.or more) | |
| Additional function | | Zero point adjustment, Panel lock | | |
| Analog output | Output voltage | | 1 ~ 5 VDC (Output current : 1 mA minimum / Output resistance: 1.5 kΩ) | |
| | Output accuracy | Output accuracy | ± 1.0% FS (The setting error and LIN / HYS are contained) | |
| | | Temperature character | ± 0.1% FS / °C (0 ~ 50°C Reference temp. 25°C) | |
| | Output current | | 4 ~ 20mA (Vort: 24VDC ±10% / 500Ω minimum) | |
| Output accuracy | Output accuracy | ± 1.0% FS (The setting error and LIN / HYS are contained) | | |
| | Temperature character | ± 0.1% FS / °C (0 ~ 50°C Reference temp. 25°C) | | |
| Switch output | Number of output | | Output 1 or 2 | |
| | Output interface | | NPN / PNP transistor open collector | |
| | Switching capacity | | 30VDC 100mA minimum | |
| | Residual voltage | | 1.2V(NPN) / 2.2V(PNP) minimum (Land current 100mA) | |
| | Output working chart | | Separate mode / Window comparator mode | |
| | Repeatability | | ± 0.3% FS minimum | |
| | Thermal error | | ± 0.1% FS / °C (0 ~ 50°C Reference temp. 25°C) | |
| | Response | | Approx. 2.5, 25, 250 ms | |
| | Hysteresis setting | | 0 ~ 300counts(Select panel SW) | |

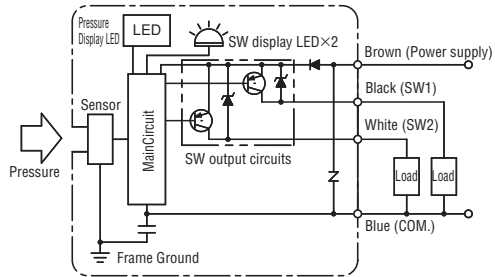
PG-20 PRESSURE GAUGES

INTERNAL ELECTRICAL SCHEMATICS

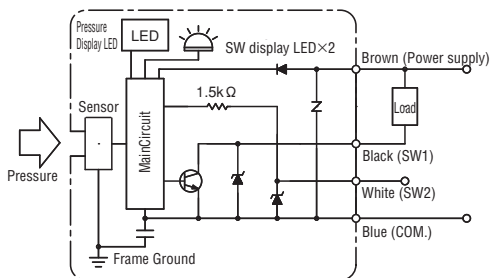
● PG-20-****-N2**



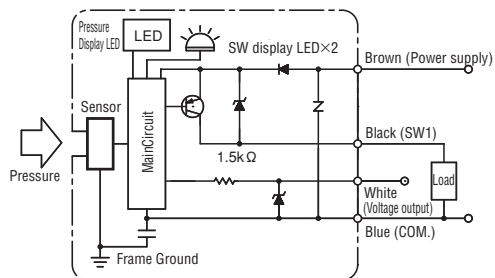
● PG-20-****-P2**



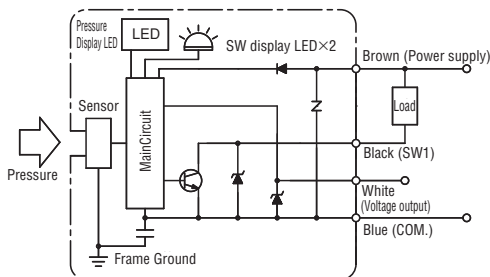
● PG-20-****-NV**



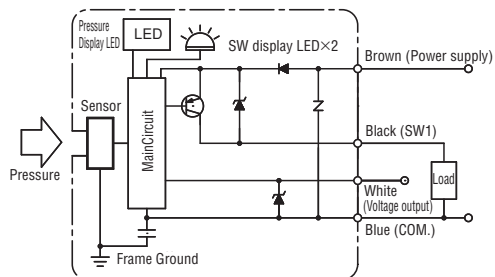
● PG-20-****-PV**



● PG-20-****-NA**



● PG-20-****-PA**

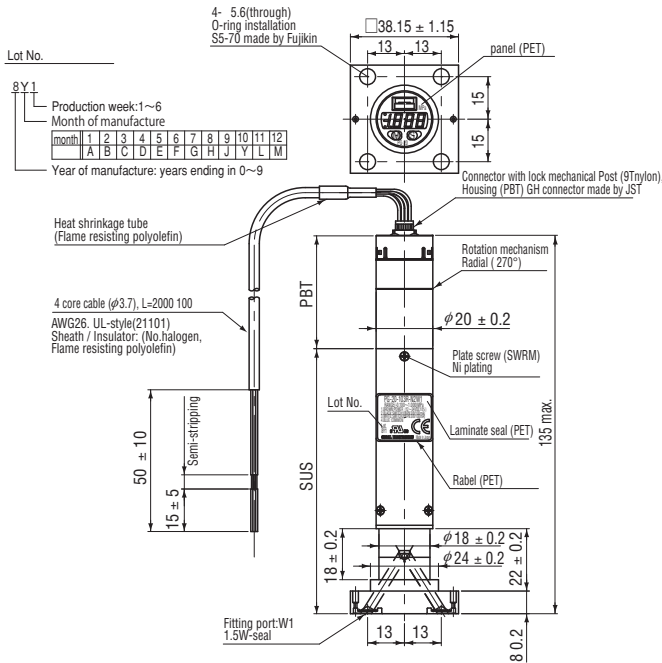


| Series name | PG-20-**** | | | |
|-------------|----------------|---------------|---------------|---------------|
| Wire color | -BW* | -N2W* / -P2W* | -NVW* / -PVW* | -NAW* / -PAW* |
| Brown | (12~24VDC±10%) | | | (24VDC±10%) |
| Black | N.C. | SW1 (NPN/PNP) | | |
| White | N.C. | SW2 (NPN/PNP) | (1-5V) | (4-20mA) |
| Blue | COMMON | | | |

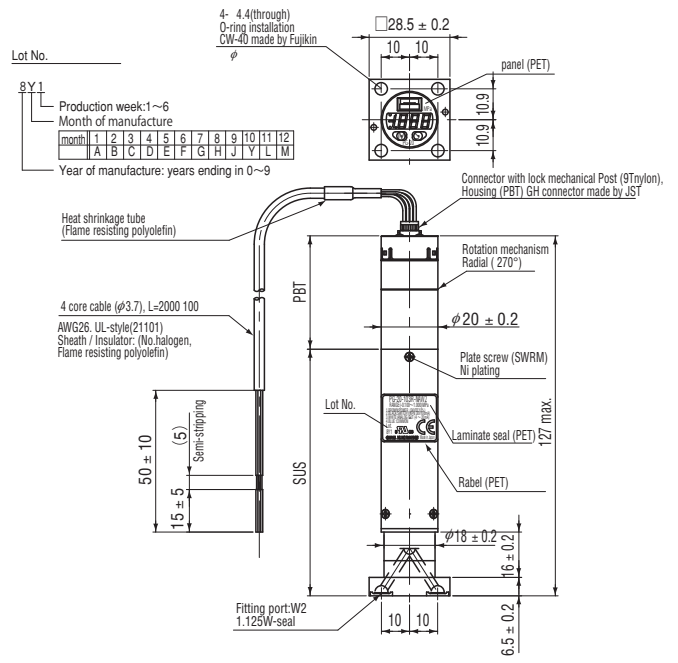
OUTLINE DIMENSIONS

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

PG-20-***R/G-***W1

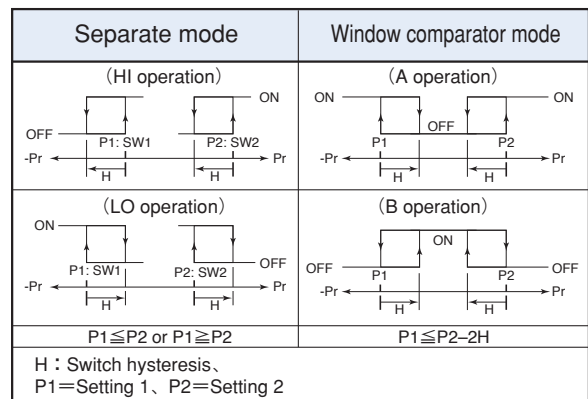


PG-20-***R/G-***W2



SWITCH OUTPUT MODE

| Output | SW1 | | SW2 | |
|------------------------------------|-----------|--|-----------|--|
| | Separate | Window comparator | Separate | Window comparator |
| Mode | Separate | Window comparator | Separate | Window comparator |
| Operation | HI LO | A B | HI LO | A B |
| S-1 | ○ | | ○ | |
| S-2 | ○ | | ○ | |
| S-3 | | ○ | | ○ |
| S-4 | | ○ | | ○ |
| C-5 | | ○ | | ○ |
| C-6 | | ○ | | ○ |
| C-7 | | | ○ | ○ |
| C-8 | | | ○ | ○ |
| Pressure setting (Operating point) | Setting 1 | (Lower limit) : Setting 1 (Upper limit) : Setting 2 | Setting 2 | (Lower limit) : Setting 1 (Upper limit) : Setting 2 |



Note 1. In the Separate Mode, setting 1 corresponds to SW1, and Setting 2 corresponds to SW2.

Note 2. In the Window Comparator Mode, the minimum value for SW1 and SW2 corresponds to Setting 1 and the maximum value corresponds to Setting 2.

Note 3. It becomes only "SW1" for one switch output specification. In that case, it displays it in the switch operation mode in order of "S-1""S-3""C-5""C-7".