

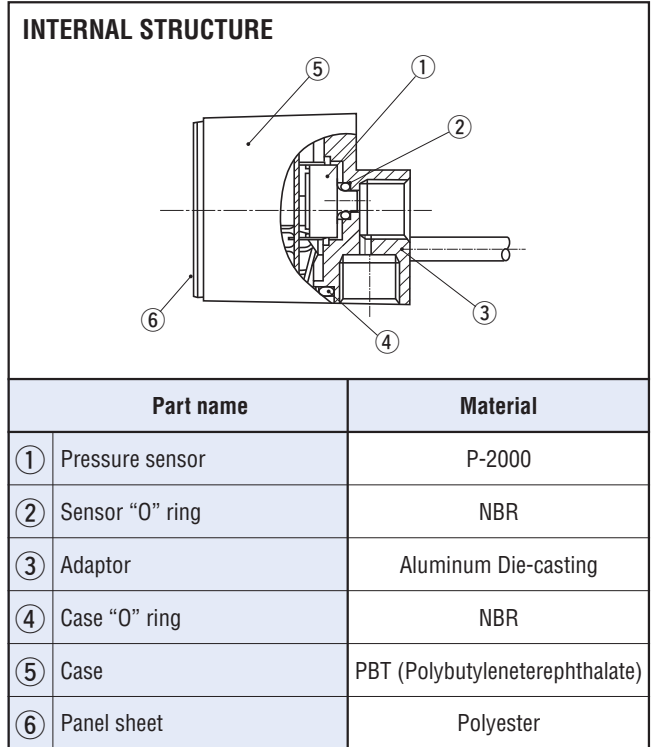
PRESSURE GAUGES

PG-30



FEATURES

- **Compact and lightweight general-purpose pressure gauges**
Innovative general-purpose gauges of compact design (30mm sq.) and drip-proof structure (IP65).
- **Clear indication by LED**
Easy-to-see LED assures clear readings on the panel and even in a dark place.
- **Various modes and units can be selected according to applications**
Eight different pressure units
Three analog output modes
Eight switch output modes
- **Meet EMC standards**
EN 55011 (EMI)
EN 61326-1 (EMS)
- **Low consumption by nondisplay mode**
- **Set data protection by panel lock function**



MODEL NUMBER DESIGNATION

Non-corrosive gases type

PG-30-101 R-N

Series name

Pressure range

101 : - 10 ~ 10 kPa
102 : - 100 ~ 100 kPa
103 : - 100 ~ 1000 kPa

Switch output interface

N : NNPN open collector
P : PNP open collector

Pressure reference

R : Compound pressure (Negative pressure ~ Positive pressure)

LIST OF MODEL NUMBERS

Pressure medium	Fitting	Switch output interface	Pressure reference	Gauge		
			Rated pressure range	-10 ~ 10 kPa	-100 ~ 100 kPa	-100 ~ 1000 kPa
Non-corrosive gases	Rc 1/8	NPN		PG-30-101R-N	PG-30-102R-N	PG-30-103R-N
		PNP		PG-30-101R-P	PG-30-102R-P	PG-30-103R-P

※ Verify the above model numbers when placing orders.

ACCESSORIES (Sold separately)

Name	Series name	Contents	Applicable model
Rear panel bracket set	ACPG-001	Rear panel bracket and M 3 × 4 male screw (2pcs.)	PG-30
Panel bracket set	ACPG-002	Panel bracket and M 3 × 4 male screw (2pcs.)	PG-30
Panel holder set	ACPG-003	Panel holder cover Panel holder Panel stopper (2pcs.)	PG-30 · PG-35 · PG-75 · PG-35H · PG-35L
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

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	PG-30		
		101R	102R	103R
Pressure reference		Gauge		
Pressure medium		Non-corrosive gases		
Rated pressure range	kPa	-10 ~ 10	-100 ~ 100	-100 ~ 1000
Maximum pressure	kPa	20	200	1500
Break-down pressure	kPa	50	500	2000
Operating temp. range	°C	-10 ~ 50		
Compensated temp. range	°C	0 ~ 50		
Operating humidity	%RH	35 ~ 85		
Protection grade		In accordance with IEC IP65		
Pressure port		2-Rc 1/8		
Material of pressure port attachment		Aluminum die-casting, silicone		
Net weight	g	Approx. 80 (Including 2 m cable)		
Thermal error		±3 %F.S. (0 ~ 50 °C)		
Insulation resistance		100 MΩ minimum (DC500 V)		
Dielectric strength		1 minute (Leakage current 1 mA maximum)		
Input voltage		10.8 ~ 30 V DC (Including ripple percentage)		
Consumption current		50 mA maximum		

PG-30

PRESSURE GAUGES

STANDARD SPECIFICATIONS

● Unless otherwise specified, the specs are defined at an ambient temperature of $25 \pm 5 \text{ }^\circ\text{C}$ and excitation voltage of 12 V DC.

Item		Model number	PG-30		
			101R	102R	103R
Display	Display element		Full 3-digit LED		
	Rated display range	kPa	- 9.99 ~ 9.99	- 99.9 ~ 99.9	- 100 ~ 999
	Multiplier settings		Max. 11 settings		
	Negative pressure display		Red LED is ON.		
	Display accuracy		$\pm 1 \%$		
Switch output	Output status		NPN/PNP		
	Output mode		2-point output (Transistor, Open collector output)		
	Output mode		Separate mode / window comparator mode		
	Switching capacity		30 V DC 100 mA Short-circuit protection		
	Residual voltage		1.2 V maximum (NPN), 2.2 V maximum (PNP) (At load current of 100 mA)		
	State indication		Output 1 (Green LED), Output 2 (Red LED) Lighted when output is ON.		
	Switch hysteresis		0 ~ 300 counts (Adjustable)		
	Repeatability		$\pm 0.2 \%$ F.S. ± 1 count ($\pm 0.3 \%$ F.S. maximum)		
Response		Approx. 5, 25, 250, 2500 ms Adjustable			
Analog output	Output mode		3 modes		
	Output voltage V zero : Pin=0, V span : Pin=0 ~ Pin (H)		1 ~ 5 V (G/V mode ZERO : $1 \pm 0.2 \text{ V}$, SPAN : $4 \pm 0.2 \text{ V}$) R mode ZERO : $3 \pm 0.2 \text{ V}$, SPAN : $2 \pm 0.2 \text{ V}$)	103 R (R mode)	ZERO : $1.36 \pm 0.2 \text{ V}$ SPAN : $3.64 \pm 0.2 \text{ V}$
	Impedance		10 k Ω		
	Resolution		1/204		
	Response		Approx. 5, 25, 250, 2500 ms Adjustable		
Accessories			Seal screw, M 5 connecting joint screw		

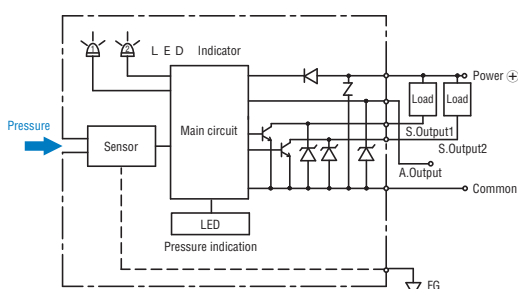
ENVIRONMENTAL CHARACTERISTICS

Test item	Test conditions	Permissible change
Vibration	10 ~ 500 Hz, 98.1 m/s ² or 1.5 mm P-P, 3 directions for 2 hours each	$\pm 2 \%$ F.S. maximum after test ※1 Amount of analog output fluctuation is permitted by adding conversion error of 20 mV.
Shock	490 m/s ² , 3 directions for 3 times each	
Pressure cycling	0 ~ Rated pressure、 10^6 cycles	
Moisture resistance	40 $^\circ\text{C}$, 90 ~ 95 %RH, 240 hrs.	
EMC	EMI : EN55011: 2007, A2 : 2007 Group 1, class B EMS : EN61326-1 : 2006 Table 2	Pressure indication, switch operating pressure and analog output : $\pm 5 \%$ F.S. maximum during test ※1

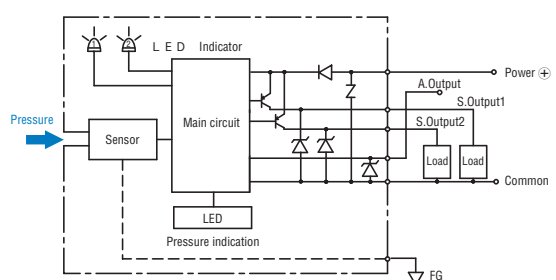
※ 1 Change in the pressure indication, switch operating points and analog output.

INTERNAL ELECTRICAL SCHEMATICS

● NPN



● PNP



SELECTION OF DISPLAY MULTIPLIER

The last digit/letter represents the selection code : Blinking red LED indicates negative pressure.

Display multiplier	Pressure range (- Pr ~ + Pr)		
	101R	102R	103R
1 × 1	- 9.99 ~ 9.99	- 99.9 ~ 99.9	- 100 ~ 999
2 × 0.0102			- 1.02 ~ 9.99
3 × 10.2	- 99.9 ~ 99.9	- 999 ~ 999	
4 × 7.501	- 75.0 ~ 75.0	- 750 ~ 750	
5 × 102	- 999 ~ 999		
6 × 0.01			- 1.00 ~ 9.99
7 × 10	- 99.9 ~ 99.9	- 999 ~ 999	
8 × 0.145	- 1.45 ~ 1.45	- 14.5 ~ 14.5	- 14 ~ 145
9 × 0.000145			
A × 0.001			- 0.10 ~ 1.00
b × 0.2953	- 2.95 ~ 2.95	- 29.5 ~ 29.5	- 29 ~ 295

Diagonal column: Display multiplier cannot be selected due to resolution and number of digits. (Selection code is not indicated either.) Selection code is set at "1" prior to shipment.

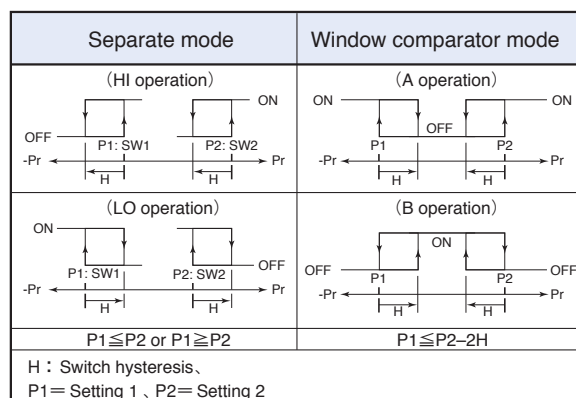
ANALOG OUTPUT MODE

Pressure range		-Pr		0		Pr	
		←-----→					
Display	Mode						
1	R mode	1 V	-----	-----	-----	-----	5 V
2	G mode			1 V	-----	-----	5 V
3	V mode	5 V	←-----	-----	1 V	-----	

When shipped from our factory-101R : R mode is set at "1", 102R : V mode is set at "3" and 103R : G mode is set at "2". The above 3 types can be set at "1", "2" or "3". However, the accuracy at V mode of 103R can't be guaranteed.

SWITCH OUTPUT MODE

Output	SW1				SW2			
	Separate		Window comparator		Separate		Window comparator	
Mode	HI	LO	A	B	HI	LO	A	B
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.

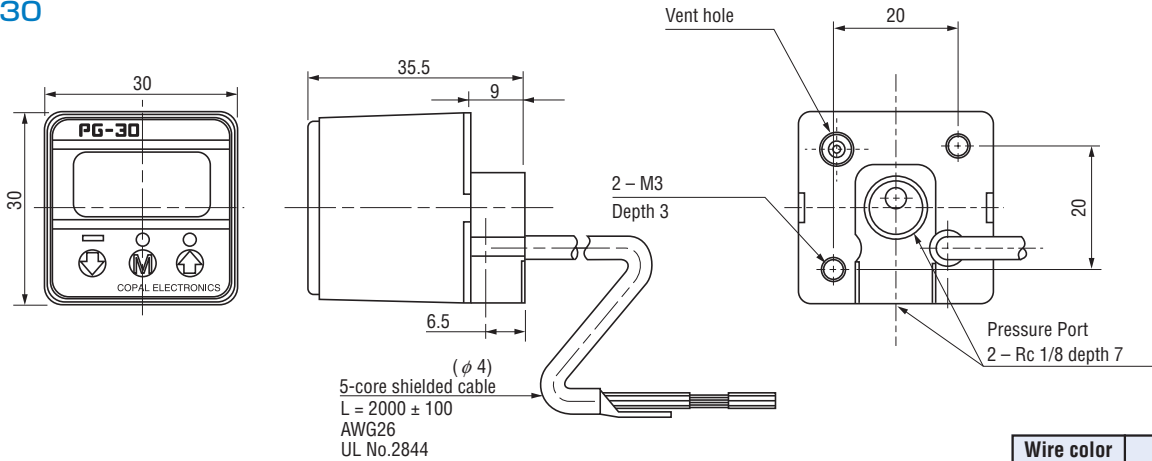
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PRESSURE GAUGES

OUTLINE DIMENSIONS

PG-30

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



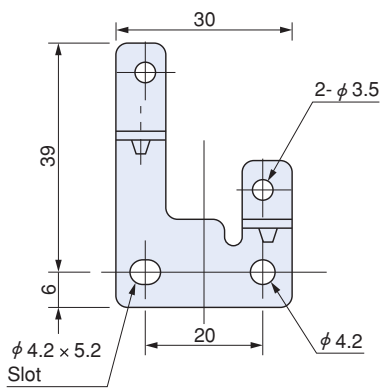
Wire color	Connection
Brown	Power ⊕
Gray	Analog output
Black	Switch output 1
White	Switch output 2
Blue	Common
Shield	Fitting

HOW TO MOUNT OPTIONAL ACCESSORIES (Sold separately)

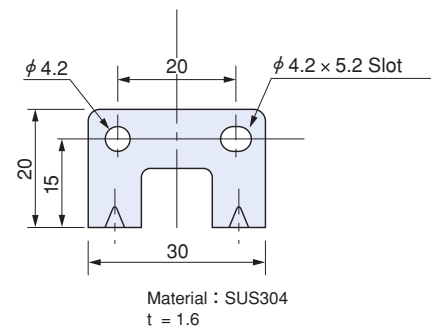
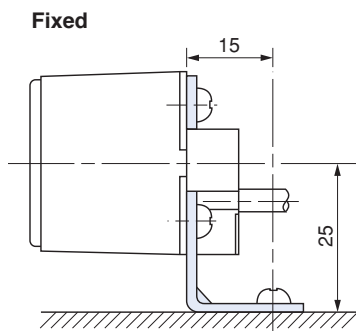
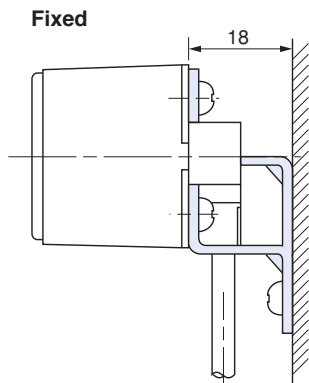
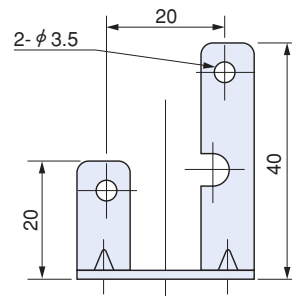
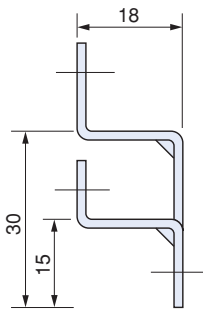
(Unit: mm)

PG-30 Rear panel mounting bracket

PG-30 Panel mounting bracket



Material : SUS304
t = 1.5



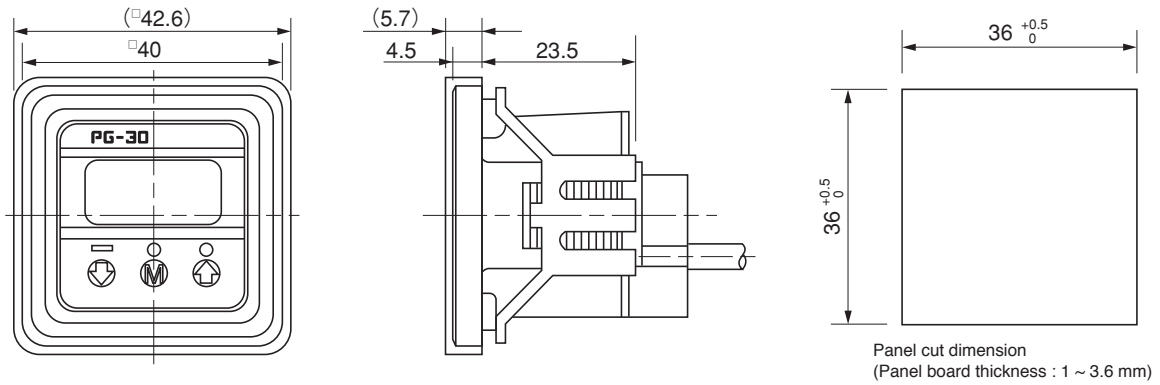
Material : SUS304
t = 1.6

PG-30 PRESSURE GAUGES

■ HOW TO MOUNT OPTIONAL ACCESSORIES (Sold separately)

(Unit: mm)

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



● Panel holder cover set

