

PRESSURE GAUGES

PG-35L



FEATURES

- For high vacuum pressure
- For corrosive gases and liquids compatible with SUS316L stainless steel diaphragm
- Compact • Light weight • Drip-proof structure (30 mm sq • 200 g • IP65)
- Low consumption by nondisplay mode
- Set data protection by panel lock function

INTERNAL STRUCTURE (9/16-18UNF)

Part name		Material
①	Fitting	SUS316L
②	Sensor module (oil less)	
③	Sensor holder	
④	Housing (Aluminum coating)	PBT (UL-94-HB)
⑤	Adapter	ADC 10, 12
⑥	Panel sheet	Polyester (UL746)
⑦	Shielded cable	Vinyl chlorid resin (UL2844)

MODEL NUMBER DESIGNATION

PG-35L-102R-NVC

Series name

Pressure range

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

Pressure reference

R : Compound pressure (Negative pressure ~ Positive pressure)

Fitting

R2 : R 1/4
G2 : G 1/4
VC : 9/16 - 18 UNF (Gasket joint)

Switch output interface

N : NPN open collector
P : PNP open collector

LIST OF MODEL NUMBERS

Fitting	Pressure reference		Gauge	
	Switch output interface	Rated pressure range	-100 ~ 100 kPa	-100 ~ 1000 kPa
R2 (R 1/4)	NPN		PG-35L-102R-NR2	PG-35L-103R-NR2
	PNP		↻ PG-35L-102R-PR2	↻ PG-35L-103R-PR2
G2 (G 1/4)	NPN		PG-35L-102R-NG2	PG-35L-103R-NG2
	PNP		↻ PG-35L-102R-PG2	↻ PG-35L-103R-PG2
VC (9/16-18 UNF)	NPN		PG-35L-102R-NVC	PG-35L-103R-NVC
	PNP		↻ PG-35L-102R-PVC	↻ PG-35L-103R-PVC

※ Verify the above model numbers when placing orders.

Marked ↻ is manufactured upon receipt of order basis.

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PRESSURE GAUGES

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-35L									
			102R	103R								
General specifications	Pressure reference		Gauge									
	Pressure medium		Corrosive gases/liquids compatible with SUS 316L									
	Rated pressure range	kPa	- 100 ~ 100	- 100 ~ 1000								
	Maximum pressure	kPa	200	1500								
	Break-down pressure	kPa	300	2000								
	Operating temp. range	°C	- 10 ~ 50									
	Compensated temp. range	°C	0 ~ 50									
	Operating humidity	%RH	35 ~ 85 (No condensation)									
	Protection grade		IP65									
	Type of mounting		R 1/4, G 1/4, VC (9/16 - 18 UNF)									
	Material of pressure port attachment		SUS 316L									
	Net weight	g	Approx. 150 (Including 2 m cable)									
	Thermal error		± 3 %F.S. (0 ~ 50 °C)									
	Insulation resistance		50 MΩ minimum									
	Dielectric strength		125 V DC 1 minute									
	Vacuum working pressure		1.4 × 10 ⁻⁴ Pa abs minimum									
Input voltage		10.8 ~ 30 V DC (Including ripple percentage)										
Consumption current		50 mA maximum										
Display	Display element		Full 3-digit LED									
	Rated display range	kPa	- 99.9 ~ 99.9	- 100 ~ 999								
	Multiplier settings		Max. 11 settings									
	Display cycle		Approx. 4 times/s									
	Negative pressure display		“-” LED is ON									
	Display accuracy		± 1 %									
Switch output	Output status		NPN/PNP									
	Output mode		2-point output (Transistor, Open collector output)									
	Switching capacity		Separate mode / window comparator mode									
	Residual voltage		30 V DC 100 mA maximum									
	State indication		1.2 V maximum (NPN), 2.2 V maximum (PNP)									
	Switch hysteresis		Output 1 (Green LED), Output 2 (Red LED) Lighted when output is ON.									
	Repeatability		0 ~ 300 counts Adjustable									
	Response		± 0.2 %F.S. ± 1 count									
Analog output	Output mode		Approx. 5, 25, 250, 2500 ms adjustable									
	Output voltage		3 modes									
	V zero : Pin=0, V span : Pin=0 ~ Pin (H)	1 ~ 5 V	<table border="0"> <tr> <td>G/V mode</td> <td>ZERO : 1 ± 0.2 V, SPAN : 4 ± 0.2 V</td> <td>103 R (R mode)</td> <td>ZERO : 1.36 ± 0.2 V</td> </tr> <tr> <td>R mode</td> <td>ZERO : 3 ± 0.2 V, SPAN : 2 ± 0.2 V</td> <td></td> <td>SPAN : 3.64 ± 0.2 V</td> </tr> </table>		G/V mode	ZERO : 1 ± 0.2 V, SPAN : 4 ± 0.2 V	103 R (R mode)	ZERO : 1.36 ± 0.2 V	R mode	ZERO : 3 ± 0.2 V, SPAN : 2 ± 0.2 V		SPAN : 3.64 ± 0.2 V
	G/V mode	ZERO : 1 ± 0.2 V, SPAN : 4 ± 0.2 V	103 R (R mode)	ZERO : 1.36 ± 0.2 V								
R mode	ZERO : 3 ± 0.2 V, SPAN : 2 ± 0.2 V		SPAN : 3.64 ± 0.2 V									
Impedance		10 kΩ										
Resolution		1/204 (Approx. 4.9mV/ Approx.0.123% F.S.)										

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	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> ± 2 %F.S. maximum after test ※1 Amount of analog output fluctuation is permitted by adding conversion error of 20 mV. </div>
Shock	490 m/s ² , 3 directions for 3 times each	
Pressure cycling	0 ~ Rated pressure、10 ³ cycles	
Moisture resistance	40 °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 : ± 5 %F.S. maximum during test ※1

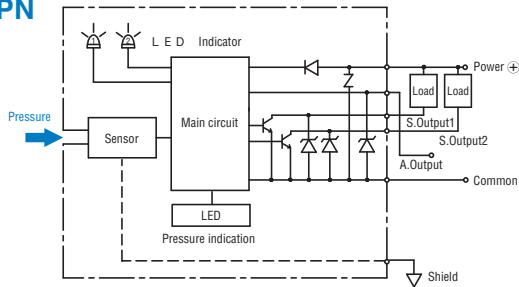
※ 1 Change in the pressure indication, switch operating points and analog output.

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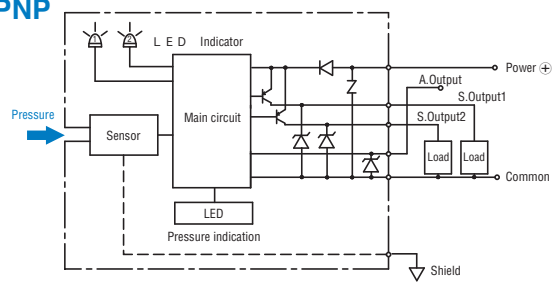
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INTERNAL ELECTRICAL SCHEMATICS

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)	
	102R	103R
1 × 1	-99.9 ~ 99.9	-100 ~ 999
2 × 0.0102	-999 ~ 999	-1.02 ~ 9.99
3 × 10.2	-750 ~ 750	
4 × 7.501		
5 × 102		
6 × 0.01		-1.00 ~ 9.99
7 × 10	-999 ~ 999	
8 × 0.145	-14.5 ~ 14.5	-14 ~ 145
9 × 0.000145		
A × 0.001		-0.10 ~ 1.00
b × 0.2953	-29.5 ~ 29.5	-29 ~ 29.5

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 "A" prior to shipment.

ANALOG OUTPUT MODE

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

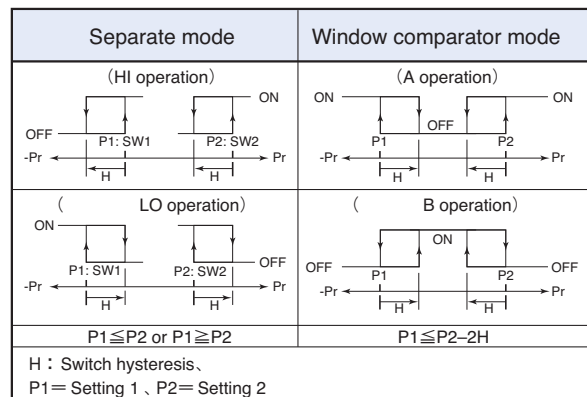
Selection code is set at "G" prior to shipment.

SWITCH OUTPUT MODE

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



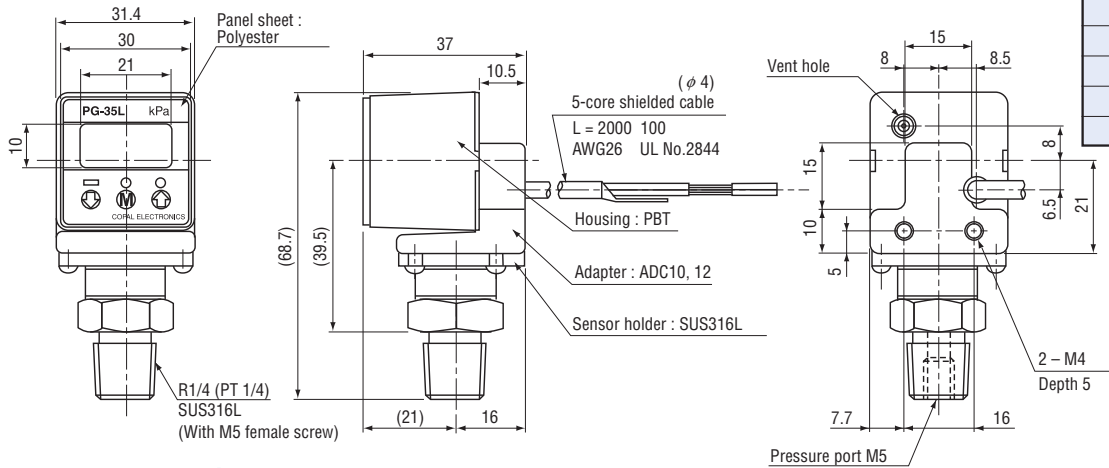
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OUTLINE DIMENSIONS

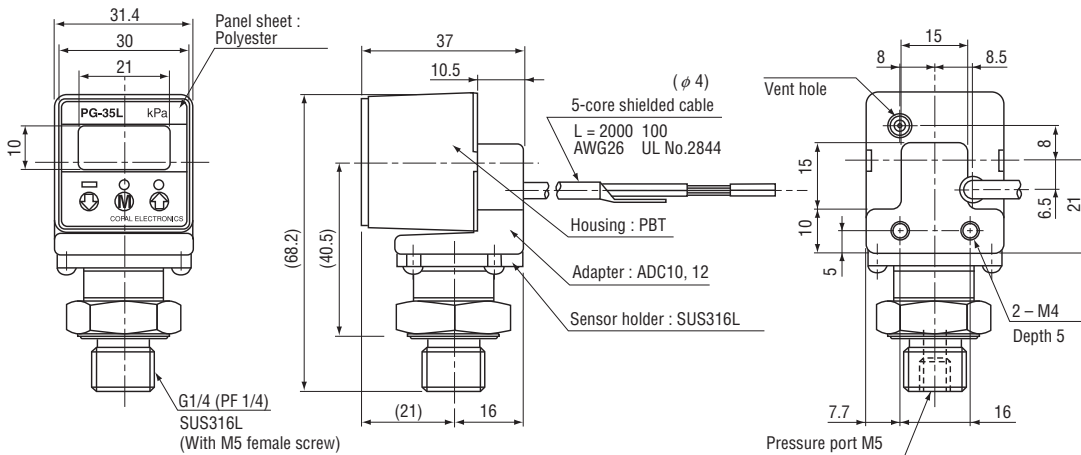
Unless otherwise specified tolerance : ± 0.5 (Unit: mm)

● Fitting R2 (R 1/4)

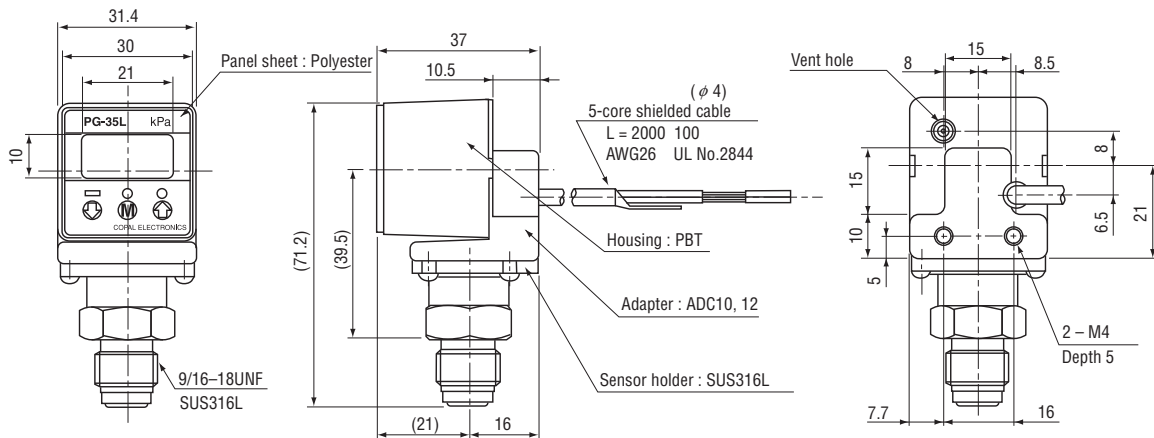
Wire color	Connection
Brown	Power \oplus
Gray	Analog output
Black	Switch output 1
White	Switch output 2
Blue	Common
Shield	Fitting



● Fitting G2 (G 1/4)



● Fitting VC (9/16 - 18 UNF)



※ Accessories (sold separately) are available for common use with PG-30, PG-35, PG-75 series. (P.173)