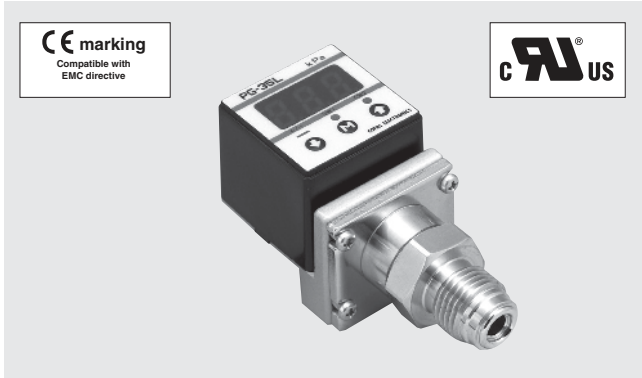


# PRESSURE GAUGES

# 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 出力    NPN open collector  
P : PNP 出力    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.

### 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		SUS 316L 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 <sup>-4</sup> 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 mode		3 modes									
	Output voltage V zero : Pin=0, V span : Pin=0 ~ Pin (H)	1 ~ 5 V	<table style="display: inline-table; border: none;"> <tr> <td style="padding: 0 5px;">(</td> <td style="padding: 0 5px;">G/V mode</td> <td style="padding: 0 5px;">ZERO : 1 ± 0.2 V, SPAN : 4 ± 0.2 V</td> <td style="padding: 0 5px;">)</td> </tr> <tr> <td style="padding: 0 5px;">(</td> <td style="padding: 0 5px;">R mode</td> <td style="padding: 0 5px;">ZERO : 3 ± 0.2 V, SPAN : 2 ± 0.2 V</td> <td style="padding: 0 5px;">)</td> </tr> </table>		(	G/V mode	ZERO : 1 ± 0.2 V, SPAN : 4 ± 0.2 V	)	(	R mode	ZERO : 3 ± 0.2 V, SPAN : 2 ± 0.2 V	)
	(	G/V mode	ZERO : 1 ± 0.2 V, SPAN : 4 ± 0.2 V	)								
(	R mode	ZERO : 3 ± 0.2 V, SPAN : 2 ± 0.2 V	)									
Impedance		10 kΩ										
Resolution		1/204 (Approx. 4.9mV/ Approx.0.123% F.S.)										

### ENVIRONMENTAL CHARACTERISTICS

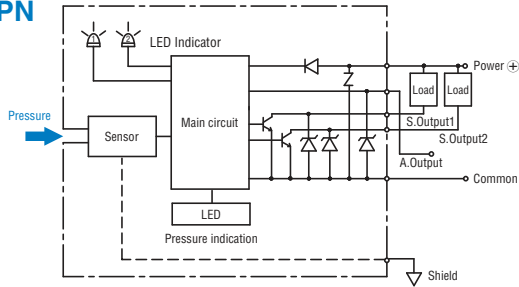
Test item	Test conditions	Permissible change
Vibration	10 ~ 500 Hz, 98.1 m/s <sup>2</sup> or 1.5 mm P-P, 3 directions for 2 hours each	<div style="border: 1px solid black; padding: 5px; display: inline-block;">           ※ 1            ± 2 %F.S. maximum after test            Amount of analog output fluctuation is permitted            by adding conversion error of 20 mV.         </div>
Shock	490 m/s <sup>2</sup> , 3 directions for 3 times each	
Pressure cycling	0 ~ Rated pressure、10 <sup>6</sup> 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	※ 1 Pressure indication, switch operating pressure and analog output : ± 5 %F.S. maximum during test

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

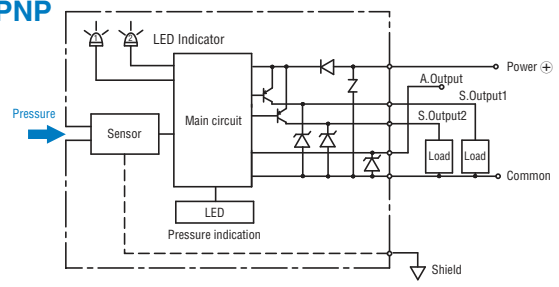
# PG-35L PRESSURE GAUGES

## 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	(- Pr ~ + Pr) Pressure range	
	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モード R mode	1 V	----->	5 V
2	Gモード G mode		1 V ----->	5 V

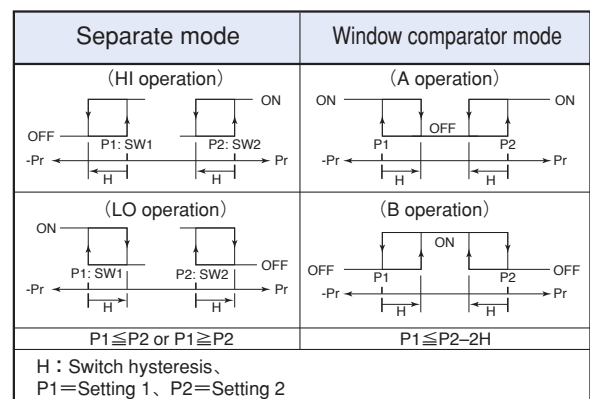
Selection code is set at "G" prior to shipment.

## SWITCH OUTPUT MODE

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

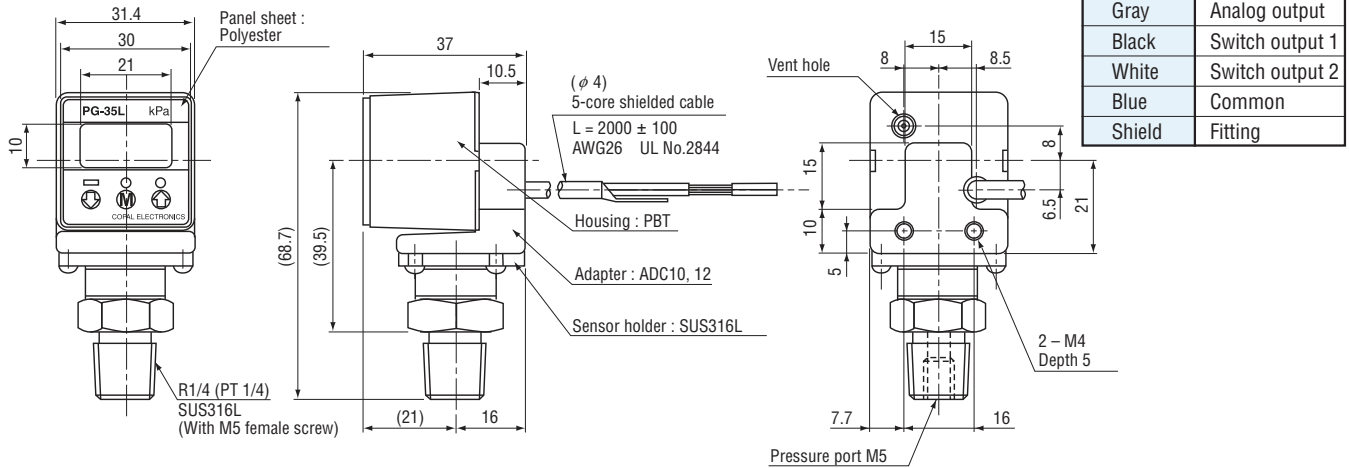


# PG-35L PRESSURE GAUGES

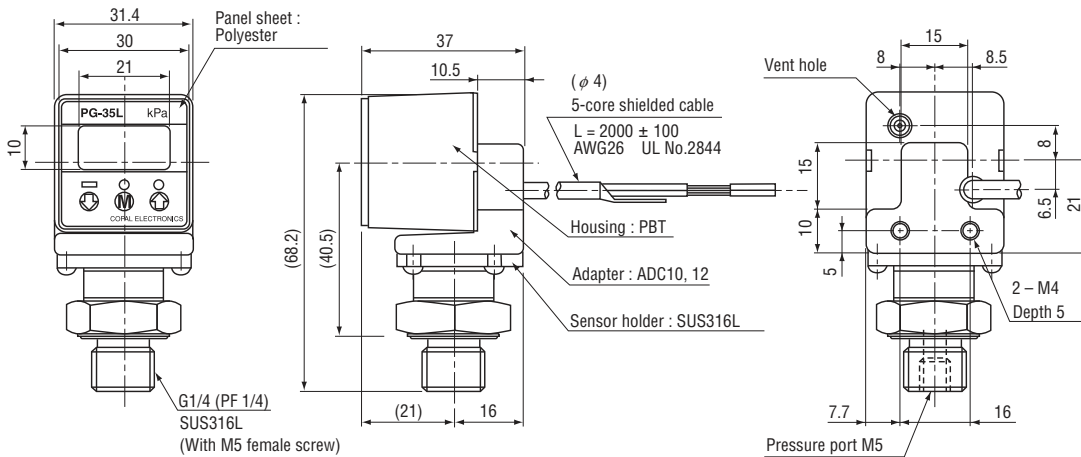
## OUTLINE DIMENSIONS

Unless otherwise specified tolerance :  $\pm 0.5$  (Unit: mm)

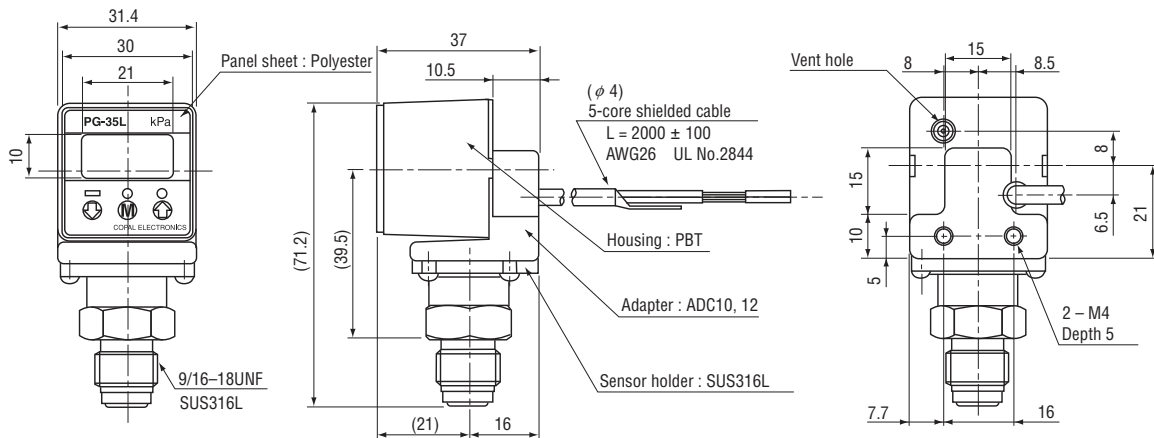
### ● Fitting R2 (R 1/4)



### ● 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.175)