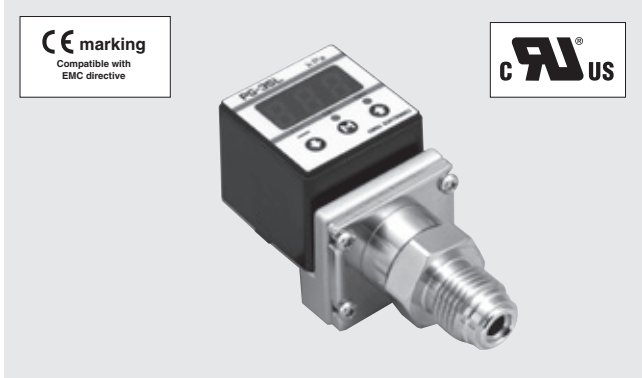


# PRESSURE GAUGES

# PG-35L



**INTERNAL STRUCTURE (9/16-18UNF)**

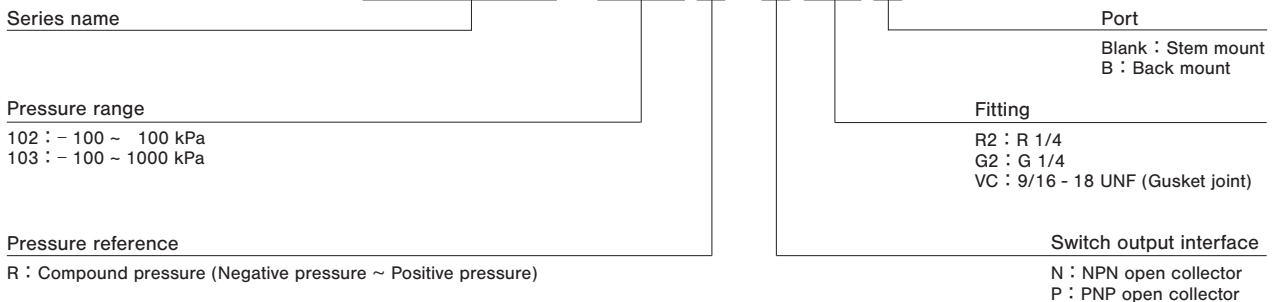
Part name		Material
①	Fitting	SUS316L
②	Sensor module (oil less)	
③	Sensor holder	PBT (UL-94-HB)
④	Housing (Aluminum coating)	
⑤	Adapter	ADC 10, 12
⑥	Panel sheet	Polyester (UL746)
⑦	Shielded cable	Vinyl chlorid resin (UL2844)

## 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

## MODEL NUMBER DESIGNATION

**PG-35L-102R-NVCB**



## LIST OF MODEL NUMBERS

Port	Fitting	Pressure reference		Gauge	
		Switch output interface	Rated pressure range	-100 ~ 100 kPa	-100 ~ 1000 kPa
Stem mount	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
	G2 (9/16-18UNF)	NPN		PG-35L-102R-NVC	PG-35L-103R-NVC
		PNP	⊕	PG-35L-102R-PVC	PG-35L-103R-PVC
Back mount	R2 (R 1/4)	NPN	⊕	PG-35L-102R-NR2B	PG-35L-103R-NR2B
		PNP	⊕	PG-35L-102R-PR2B	PG-35L-103R-PR2B
	G2 (G 1/4)	NPN	⊕	PG-35L-102R-NG2B	PG-35L-103R-NG2B
		PNP	⊕	PG-35L-102R-PG2B	PG-35L-103R-PG2B
	G2 (9/16-18UNF)	NPN	⊕	PG-35L-102R-NVCB	PG-35L-103R-NVCB
		PNP	⊕	PG-35L-102R-PVCB	PG-35L-103R-PVCB

※ Verify the above model numbers when placing orders.

Marked ⊕ is manufactured upon receipt of order basis.

# PG-35L

## PRESSURE GAUGES

### STANDARD SPECIFICATIONS

● Unless otherwise specified, the specs are defined at an ambient temperature of  $25 \pm 5$  °C and excitation voltage of 12 VDC.

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	
	Pressure Port	R 1/4, G 1/4, VC (9/16 - 18 UNF)	
	Type of mounting	Stem mount, Back mount	
	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 VDC 1 minute	
	Vacuum working pressure	$1.4 \times 10^{-4}$ Pa abs minimum	
Input voltage	10.8 ~ 30 VDC (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 %F.S.	
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 VDC 100 mA maximum	
	Residual voltage	1.2 V maximum (NPN), 2.2 V maximum (PNP)	
	State indication	Output 1 (Green LED), Output 2 (Red LED) Lighted when output is ON.	
	Switch hysteresis	0~300 counts Adjustable	
	Repeatability	± 0.2 %F.S. ± 1 count	
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 : $1 \pm 0.2$ V, SPAN : $4 \pm 0.2$ V ) 103 R (R mode) ZERO : $1.36 \pm 0.2$ V R mode ZERO : $3 \pm 0.2$ V, SPAN : $2 \pm 0.2$ V ) SPAN : $3.64 \pm 0.2$ V	
	Impedance	10 kΩ	
	Resolution	1/204 (Approx. 20 mV / Approx. 0.5%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;">           ± 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 <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	Pressure indication, switch operating pressure and analog output : ± 5 %F.S. maximum during test ※ 1

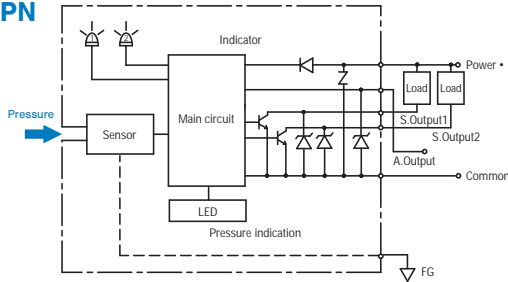
※ 1 Change in the pressure indication, switch operating points and analog output.

# PG-35L

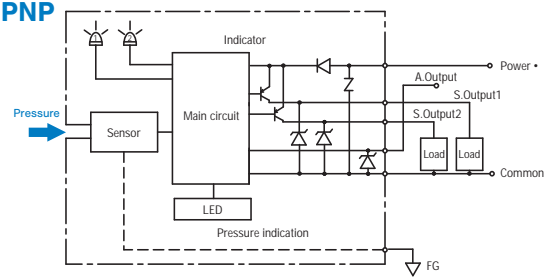
## PRESSURE GAUGES

### 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	- 1.00 ~ 9.99
4 × 7.501	- 999 ~ 999	- 14 ~ 145
5 × 102	- 14.5 ~ 14.5	- 0.10 ~ 1.00
6 × 0.01	- 999 ~ 999	- 29 ~ 29.5
7 × 10	- 14.5 ~ 14.5	- 29 ~ 29.5
8 × 0.145	- 999 ~ 999	- 0.10 ~ 1.00
9 × 0.000145	- 14.5 ~ 14.5	- 0.10 ~ 1.00
A × 0.001	- 29.5 ~ 29.5	- 0.10 ~ 1.00
b × 0.2953	- 29.5 ~ 29.5	- 0.10 ~ 1.00

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.

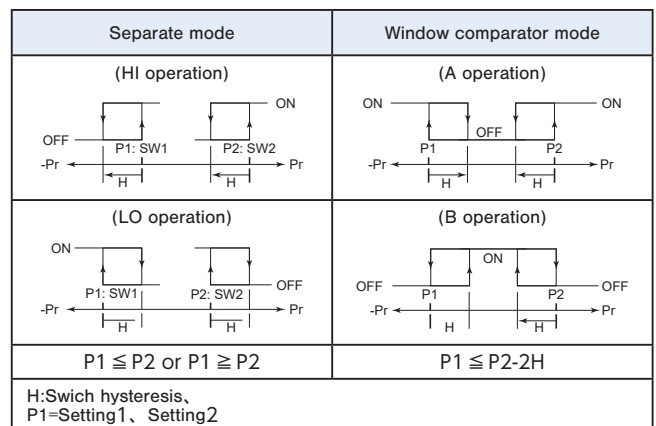
### ANALOG OUTPUT MODE

Display	Pressure range	-Pr	0	Pr
		←-----→		
1	R mode	1 V	-----	5 V
2	G mode		1 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	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):setting1 (Upper limit):setting2		Setting 2		(Lower limit):setting1 (Upper limit):setting2	



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

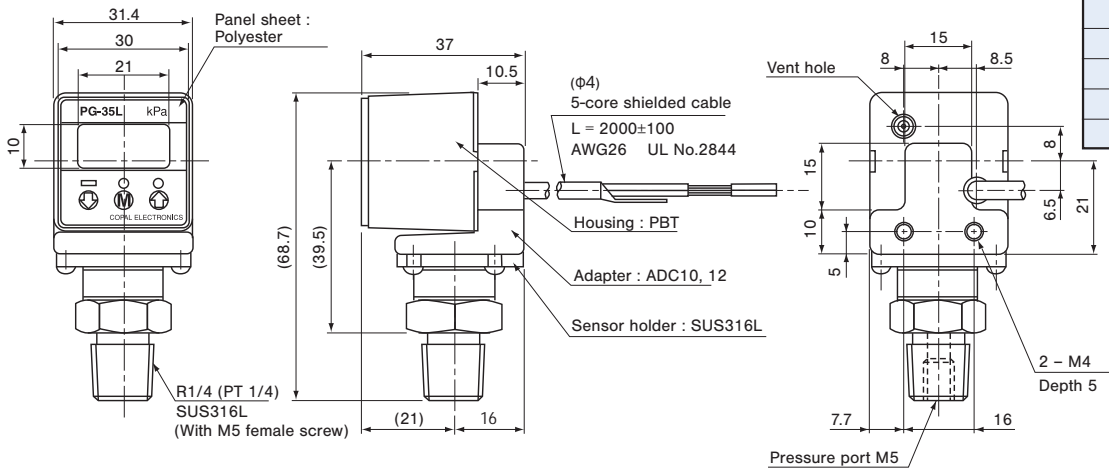
## PRESSURE GAUGES

### OUTLINE DIMENSIONS

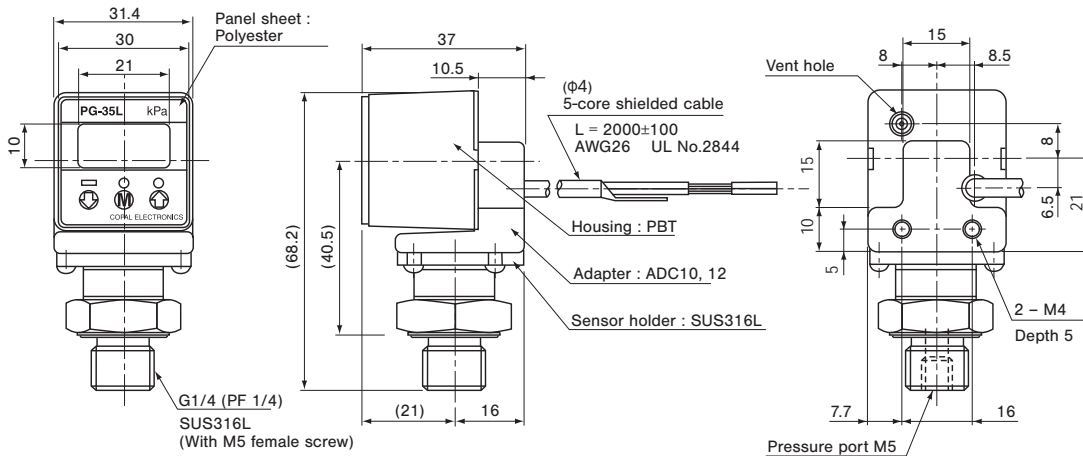
Unless otherwise specified tolerance :  $\pm 0.5$  (Unit: mm)

#### ● Fitting R2 (R 1/4)

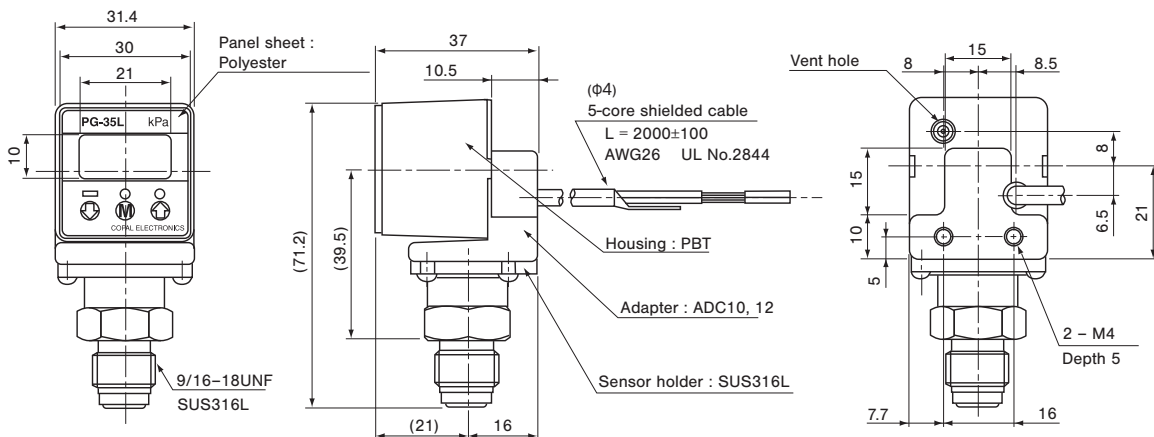
Wire color	Connection
Brown	Power ⊕
Gray	Analog output
Black	Switch output 1
White	Switch output 2
Blue	Common
Shield	Fitting



#### ● Fitting G2 (G 1/4)



#### ● Fitting VC (9/16 - 18 UNF)



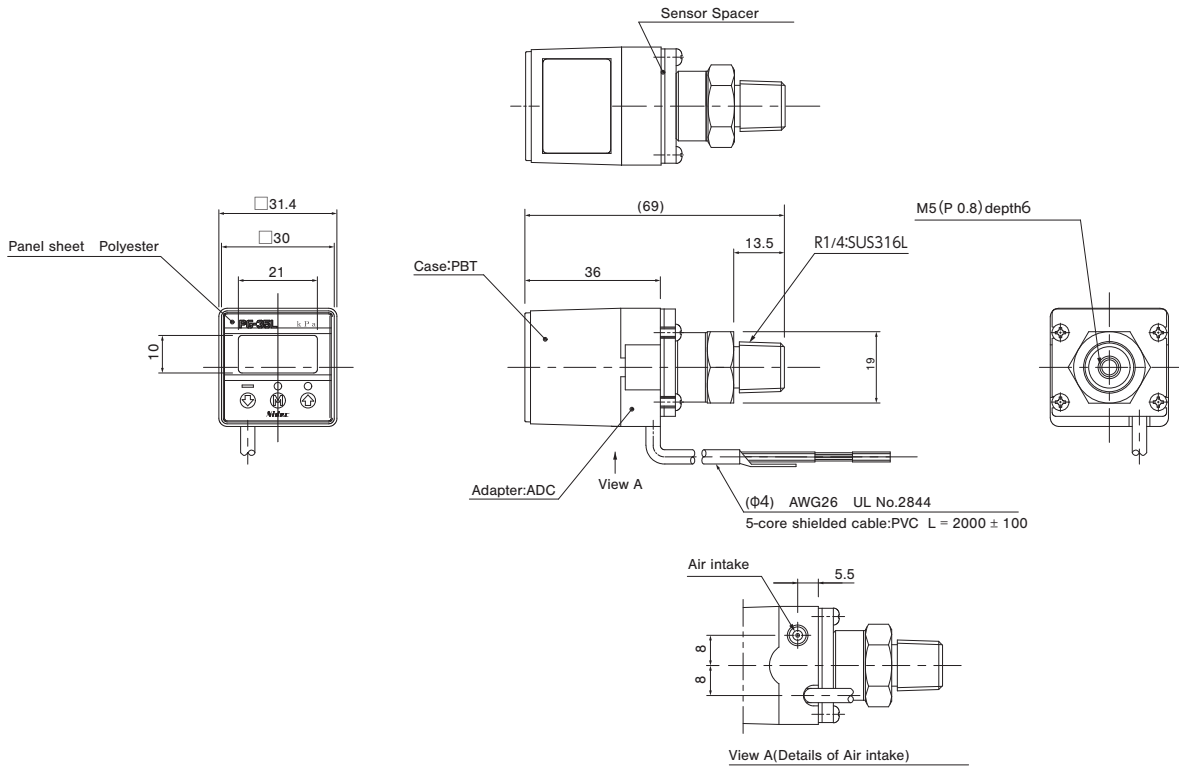
# PG-35L

## PRESSURE GAUGES

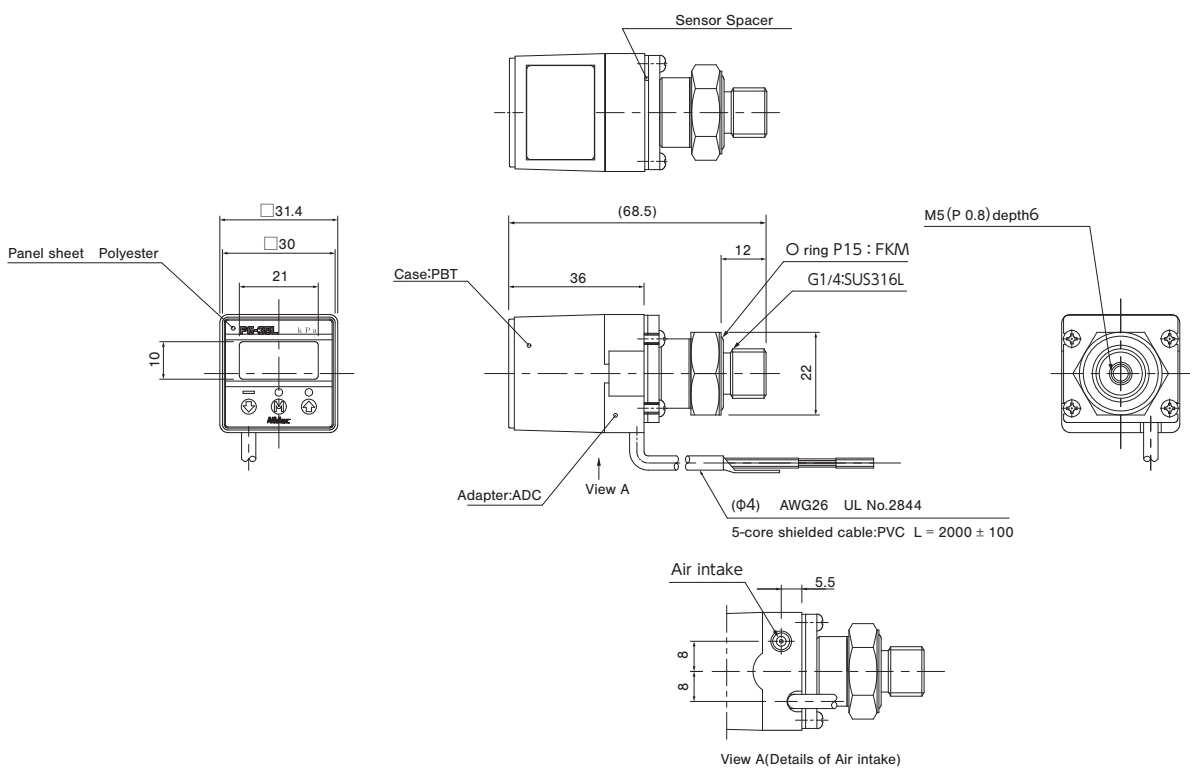
### OUTLINE DIMENSIONS

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

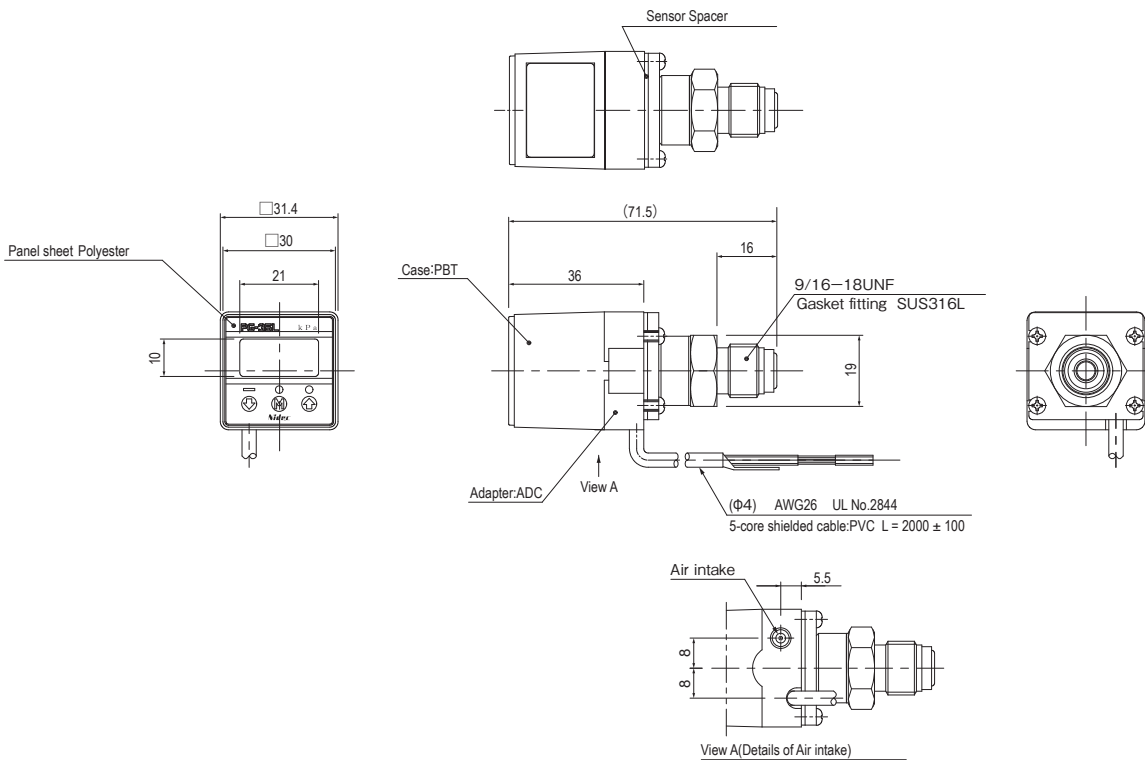
#### ● Fitting R2 (R 1/4) The horizontal installation type



#### ● Fitting G2 (G 1/4) The horizontal installation type



● **Fitting VC (9/16 - 18 UNF) The horizontal installation type**



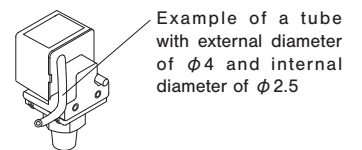
■ **Others**

● **Tube at atmospheric pressure intake**

If there is any possibility that the sensor may become wet with oil or water, which may enter the case through the air intake, connect a silicon tube, or similar, to the intake and position the end of the tube in a suitably safe place. Be sure not to bend the tube or block the end of the tube.

● **Piping**

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



■ **Customer specifications**

We also offer customized solutions. Please contact your local sales office for details.

Model number	Shape and other customization
PG-35L-103R-NVC-056	Use no oil

# PG-35L

## PRESSURE GAUGES

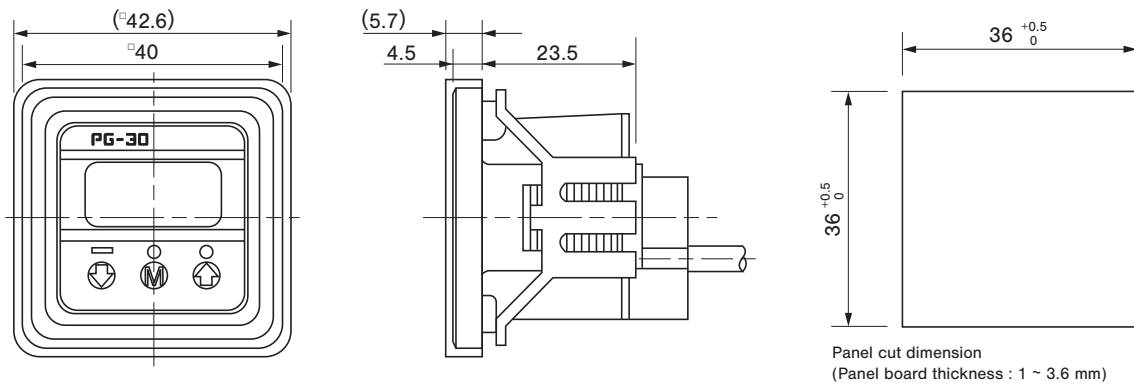
### ACCESSORIES (Sold separately)

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

