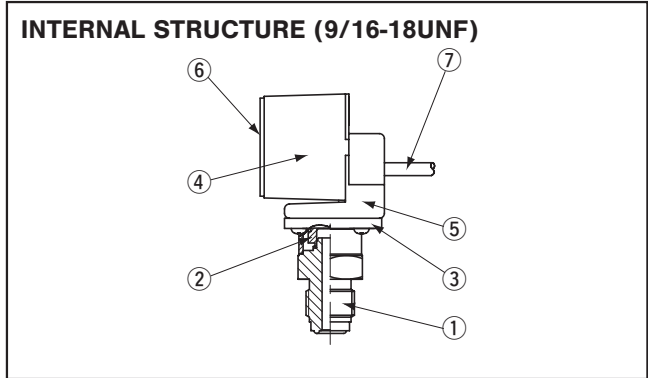
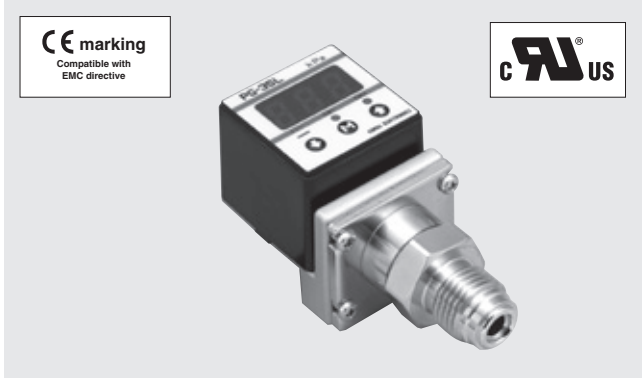


PRESSURE GAUGES

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

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)

MODEL NUMBER DESIGNATION

PG-35L-102R-NVCB

Series name

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

Pressure reference

R : Compound pressure (Negative pressure ~ Positive pressure)

Port

Blank : Stem mount
 B : Back mount

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

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 $25 \pm 5 \text{ }^\circ\text{C}$ 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	$^\circ\text{C}$ - 10 ~ 50	
	Compensated temp. range	$^\circ\text{C}$ 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	$\pm 3 \%$ F.S. ($0 \sim 50 \text{ }^\circ\text{C}$)	
	Insulation resistance	50 M Ω minimum	
	Dielectric strength	125 VDC 1 minute	
	Vacuum working pressure	1.4×10^{-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	$\pm 1 \%$ F.S.	
Switch output	Output status	NPN/PNP 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	$\pm 0.2 \%$ 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 ± 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 k Ω	
	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 ² or 1.5 mm P-P, 3 directions for 2 hours each	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> $\pm 2 \%$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, 10^6 cycles	
Moisture resistance	$40 \text{ }^\circ\text{C}$, 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

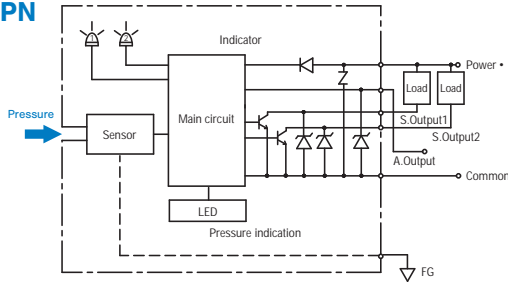
※ 1 Change in the pressure indication, switch operating points and analog output.

PG-35L

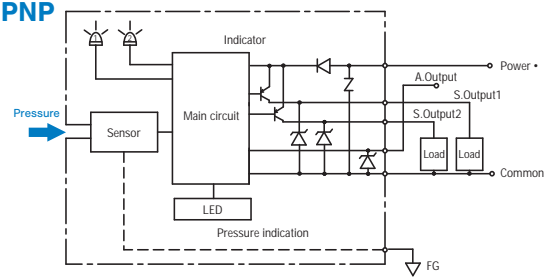
PRESSURE GAUGES

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.

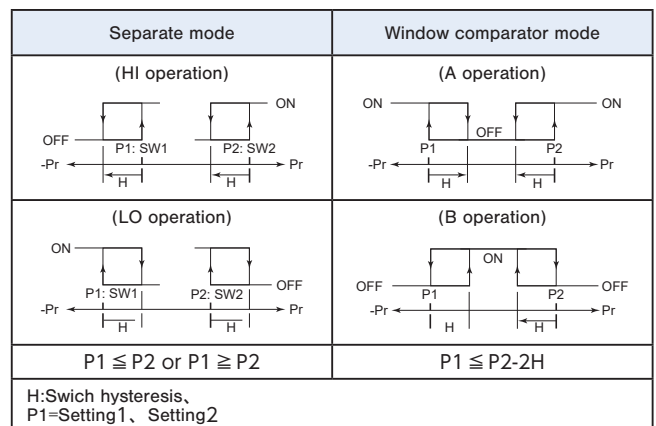
ANALOG OUTPUT MODE

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								
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.

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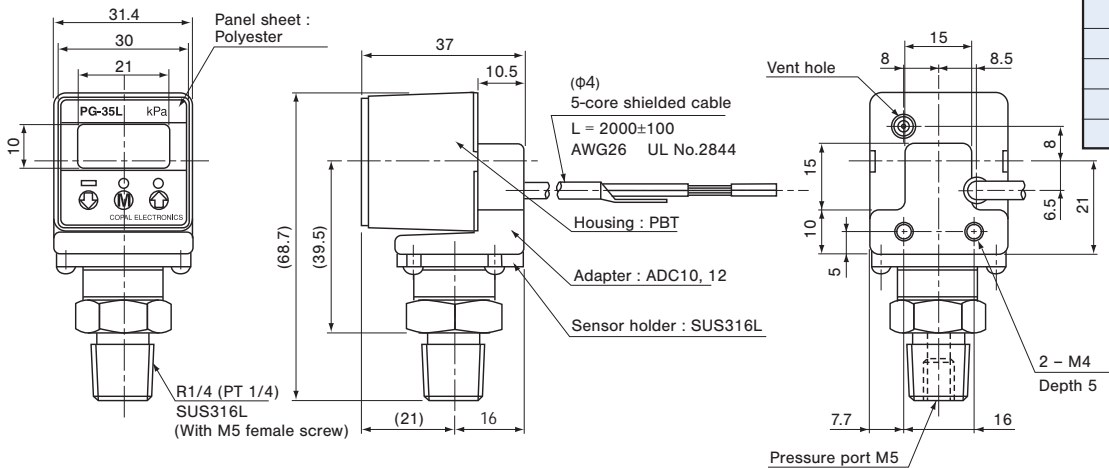
PRESSURE GAUGES

OUTLINE DIMENSIONS

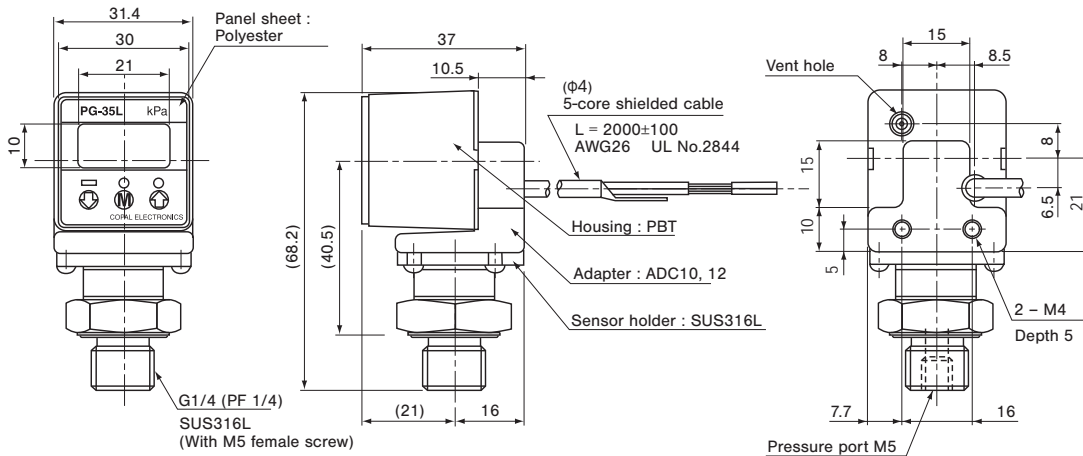
Unless otherwise specified tolerance : ± 0.5 (Unit: mm)

● Fitting R2 (R 1/4)

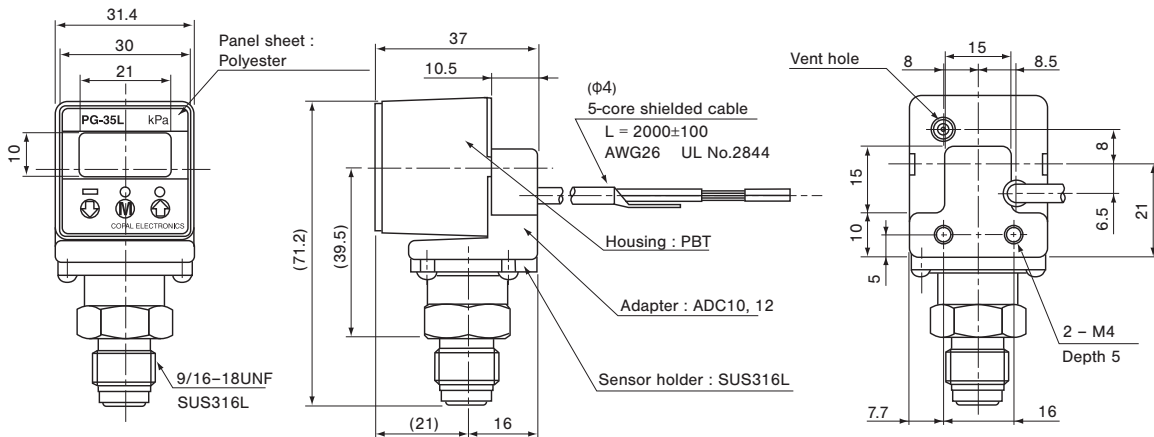
Wire color	Connection
Brown	Power ⊕
Gray	Analog output
Black	Switch output 1
White	Switch output 2
Blue	Common
Shield	Fitting



● Fitting G2 (G 1/4)



● Fitting VC (9/16 - 18 UNF)



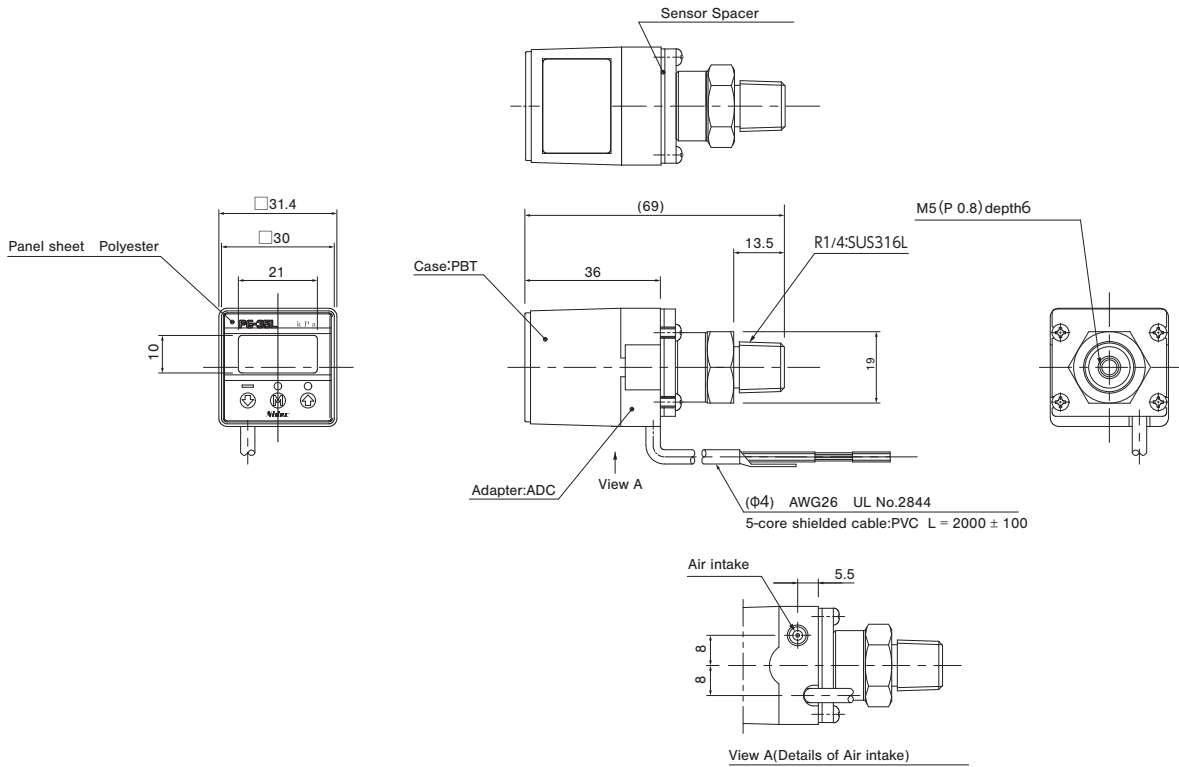
PG-35L

PRESSURE GAUGES

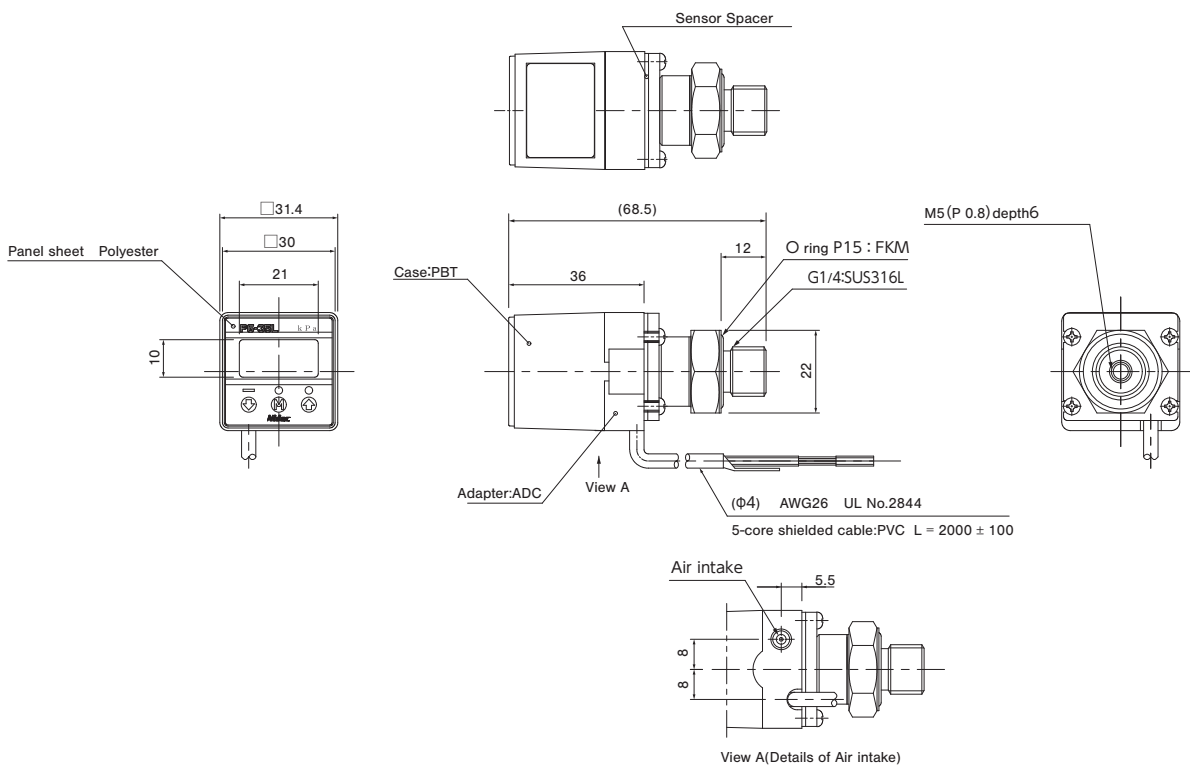
OUTLINE DIMENSIONS

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

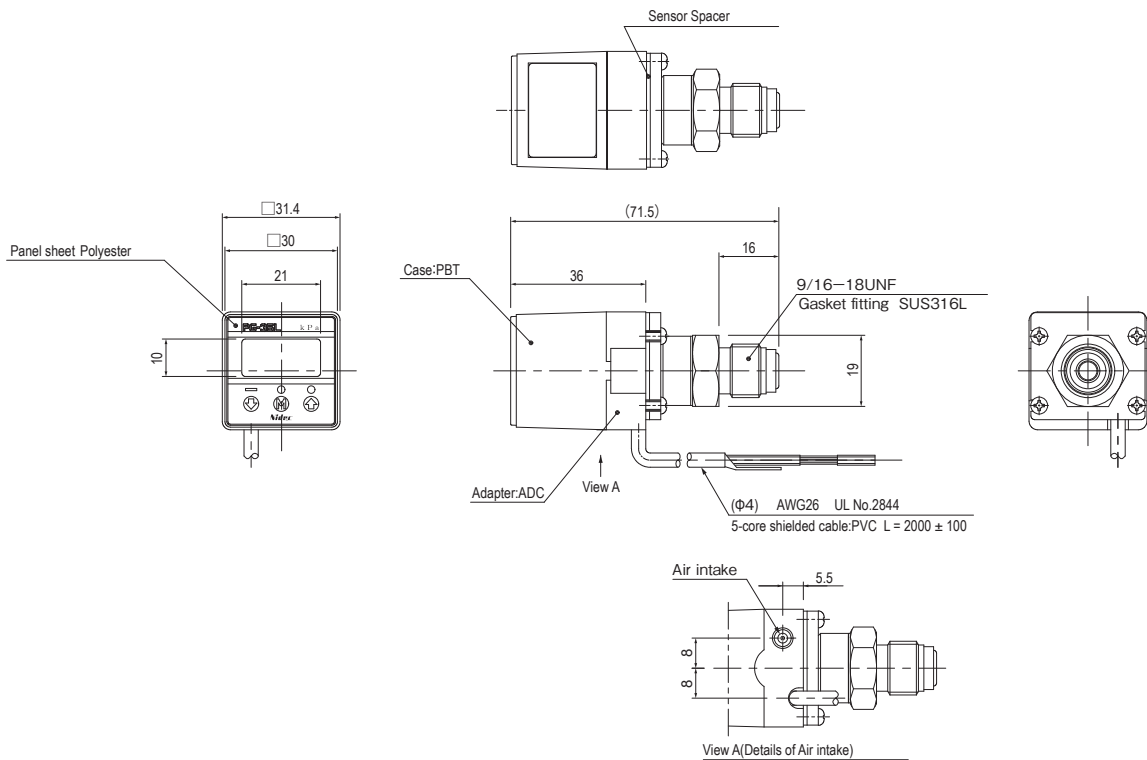
● Fitting R2 (R 1/4) The horizontal installation type



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



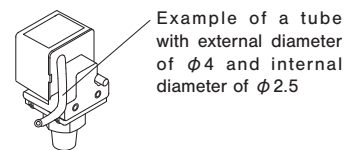
● Fitting VC (9/16 - 18 UNF) The horizontal installation type



■ 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