

PRESSURE GAUGES

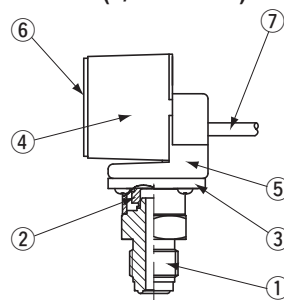
PG-35L



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.

PG-35L

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		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) R mode ZERO : 3 ± 0.2 V, SPAN : 2 ± 0.2 V)	103 R (R mode) ZERO : 1.36 ± 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	± 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 °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

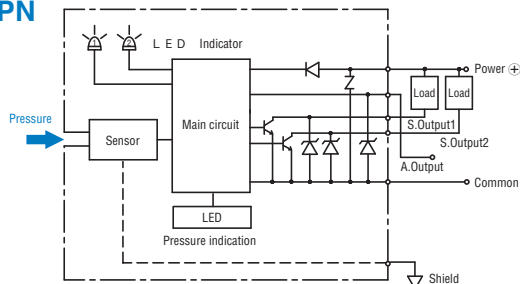
※ 1 Change in the pressure indication, switch operating points and analog output.

PG-35L

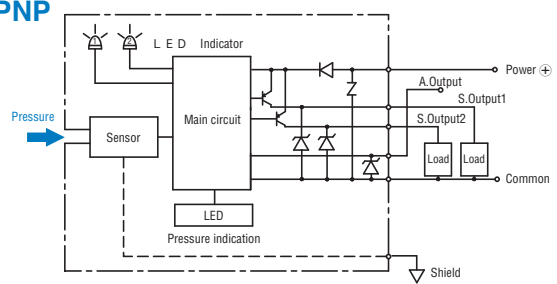
PRESSURE GAUGES

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		Pressure range (–Pr ~ +Pr)	
		102R	103R
Selection code	1 × 1	–99.9 ~ 99.9	–100 ~ 999
	2 × 0.0102		–1.02 ~ 9.99
	3 × 10.2	–999 ~ 999	
	4 × 7.501	–750 ~ 750	
	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			
Mode	Separate		Window comparator		Separate		Window comparator	
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.

Separate mode	Window comparator mode
(HI operation) OFF ON -Pr P1: SW1 P2: SW2 Pr	(A operation) ON OFF -Pr P1 P2 Pr
(LO operation) ON OFF -Pr P1: SW1 P2: SW2 Pr	(B operation) OFF ON -Pr P1 P2 Pr
$P1 \leq P2$ or $P1 \geq P2$	$P1 \leq P2 - 2H$
H : Switch hysteresis, P1 = Setting 1, P2 = Setting 2	

