

# PRESSURE GAUGES

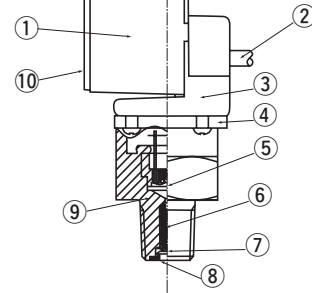
# PG-35H



## FEATURES

- For high pressure
- For corrosive gases and liquids compatible with SUS316L stainless steel diaphragm
- Compact • Light weight • Drip-proof structure (30 mm • 200 g • IP-65)
- Low consumption by nondisplay mode
- Set data protection by panel lock function

## INTERNAL STRUCTURE (R 1/4)



Part name	Material
① Shield case	PBT (Polybutyleneterephthalate)
② Push cable	Vinyl chlorid resin
③ Adaptor	Aluminum
④ Sensor holder	SUS316L
⑤ Diaphragm	SUS316L
⑥ M4 screw	SUS303 (R2 only)
⑦ Push nut	Spring steel (R2 only)
⑧ Plug	SUS303 (R2 only)
⑨ Fitting	R2 : Iron, Nickel G3 : SUS316
⑩ Panel sheet	Polyester

## MODEL NUMBER DESIGNATION

PG-35H-104R-NR2

Series name

Pressure range

104 : -0.1 ~ 10 MPa  
354 : -0.1 ~ 35 MPa

Pressure reference

R : Compound pressure (Negative pressure ~ Positive pressure)

Fitting

R2 : R 1/4  
G3 : G 3/8

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	-0.1 ~ 10 MPa	-0.1 ~ 35 MPa
R2 (R 1/4)	NPN		PG-35H-104R-NR2	PG-35H-354R-NR2
	PNP		☞ PG-35H-104R-PR2	☞ PG-35H-354R-PR2
G3 (G 3/8)	NPN		PG-35H-104R-NG3	PG-35H-354R-NG3
	PNP		☞ PG-35H-104R-PG3	☞ PG-35H-354R-PG3

※ Verify the above model numbers when placing orders.

Marked ☞ is manufactured upon receipt of order basis.

■ Specifications are subject to change without notice. Specifications in this catalog are for reference. The formal specification sheets will be submitted upon request.

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2009

# PG-35H 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-35H		
		104R	354R	
General specifications	Pressure reference	Gauge		
	Pressure medium	R2	Corrosive hydraulic oil compatible with Iron or Nickel	
		G3	Corrosive gases/liquids compatible with SUS 316 and SUS 316L	
	Rated pressure range	MPa	- 0.1 ~ 10	- 0.1 ~ 35
	Maximum pressure	MPa	20	50
	Break-down pressure	MPa	40	50
	Operating temp. range	°C	- 10 ~ 50	
	Compensated temp. range	°C	0 ~ 50	
	Operating humidity	%RH	35 ~ 85 (No condensation)	
	Protection grade		IP-65	
	Type of mounting		R 1/4, G 3/8	
	Material of pressure port attachment		SUS 316L	
	Net weight	g	Approx. 200 (Including 2 m cable)	
	Thermal error		± 3 %F.S. (0 ~ 50 °C)	
	Insulation resistance		100 MΩ minimum	
	Dielectric strength		500 V AC 1 minute	
	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	MPa	- 0.10 ~ 9.99	- 00.1 ~ 35.0
	Multiplier settings		Max. 11 settings	
	Display cycle		Approx. 4 times/s	
	Negative pressure display		“-” LED is ON	
	Display accuracy		± 2 %	
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 ( R mode 104R-ZERO : 1.04 ± 0.2 V, SPAN : 3.96 ± 0.2 V, 354R-ZERO : 1.01 ± 0.2V, SPAN : 3.99 ± 0.2 V ) G mode ZERO : 1 ± 0.2 V, SPAN : 4 ± 0.2 V ※The accuracy at V mode is not guaranteed.		
	Impedance	10 kΩ		
Resolution	1/204			

## ENVIRONMENTAL CHARACTERISTICS

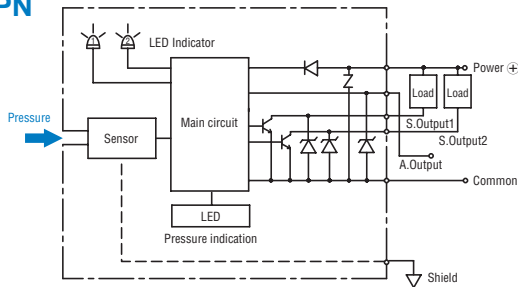
Test item	Test conditions	Permissible change
Vibration	10 ~ 500 Hz, 98.1 m/s <sup>2</sup> or 1.5 mm P-P, 3 directions for 2 hours each	Pressure indication, switch operating points and analog output variation : ± 2 %F.S. maximum each after test
Shock	490 m/s <sup>2</sup> , 3 directions for 3 times each	
Pressure cycling	0 ~ Rated pressure, 10 <sup>6</sup> cycles	
Moisture resistance	40 °C, 90 ~ 95 %RH, 240 hrs.	

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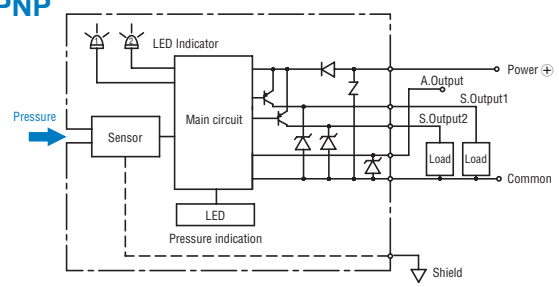
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## INTERNAL ELECTRICAL SCHEMATICS

### ● 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)	
	104R	354R
1 × 1		
2 × 0.0102	- 1.0 ~ 99.9	- 1 ~ 350
3 × 10.2		
4 × 7.501		
5 × 102		
6 × 0.01	- 1.0 ~ 99.9	- 1 ~ 350
7 × 10		
8 × 0.145		
9 × 0.000145	- 0.01 ~ 1.45	- 0.01 ~ 5.07
A × 0.001	- 0.10 ~ 9.99	- 00.1 ~ 35.0
b × 0.2953		

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	Pressure range		
		-Pr	0	Pr
1	R mode	1 V	----->	5 V
2	G mode		1 V ----->	5 V

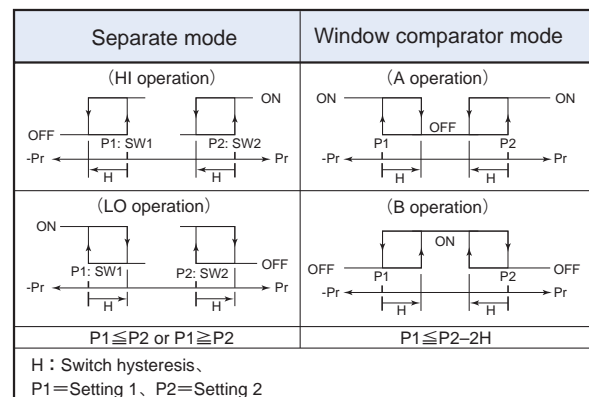
Selection code is set at "G" prior to shipment.

## SWITCH OUTPUT MODE

Output	SW1				SW2			
	Separate		Window comparator		Separate		Window comparator	
Mode	HI	LO	A	B	HI	LO	A	B
Operation								
1	○				○			
2	○					○		
3		○				○		
4		○				○		
5			○				○	
6			○				○	
7				○				○
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.

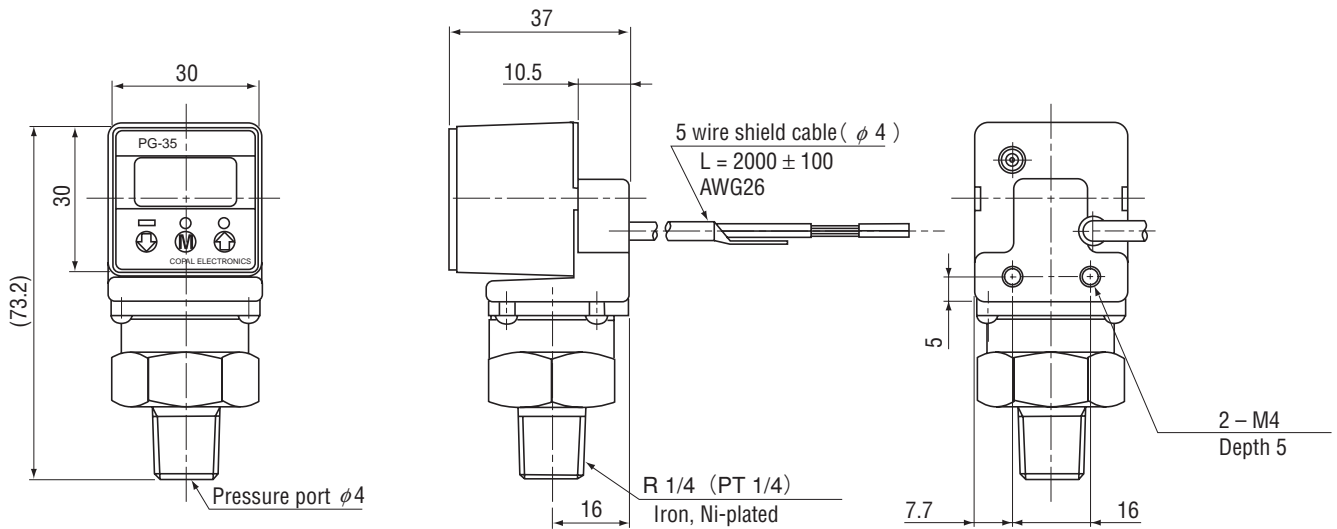


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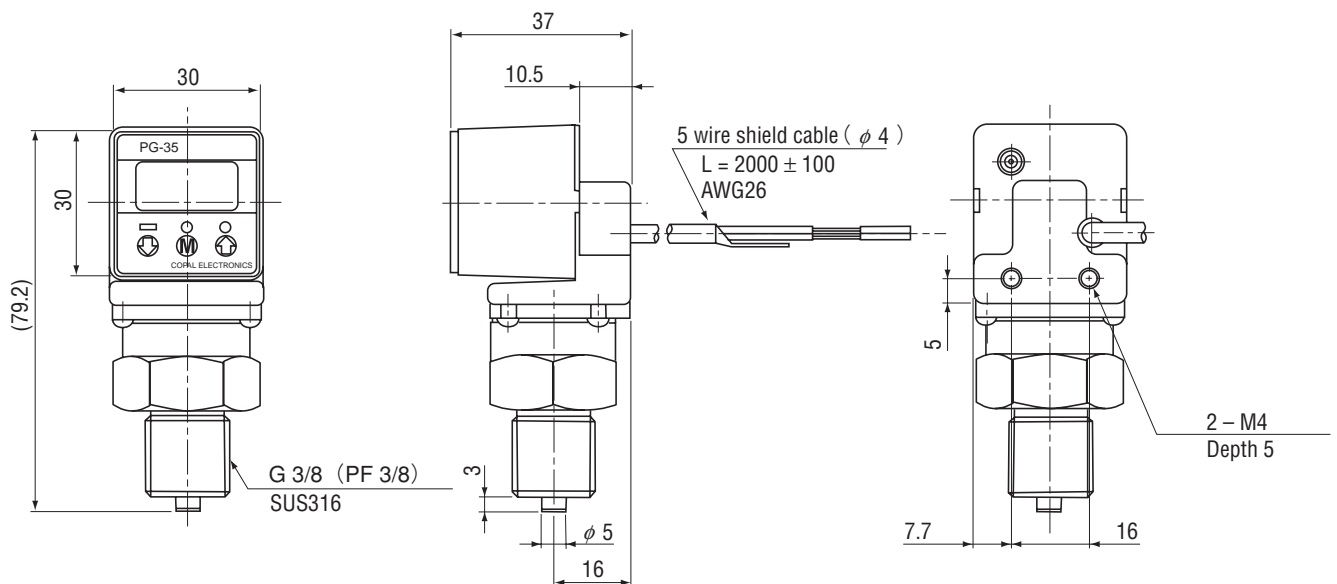
## OUTLINE DIMENSIONS

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

### ● Fitting R2 (R 1/4)



### ● Fitting G3 (G 3/8)



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

※ Accessories (sold separately) are available for common use with PG-30, PG-35 series. (P. B-177)