

# PRESSURE TRANSDUCERS WITH AMP.

# PA-850



**INTERNAL STRUCTURE**  
PA-850 (R 1/4)

Part name		Material
①	Fitting	SUS 316L
②	Housing	SUS 316L
③	Plastic cover	ABS (Acrylonitrile butadiene styrene) + PC (Polycarbonate)
④	Stainless steel diaphragm	SUS 316L

## FEATURES

- High corrosion resistance and drip-proof construction  
Pressure port attachment made of SUS 316L  
Proven IP-65 grade gauge body (IP-65 in accordance with IEC)
- Standard product provides both a switch output (hysteresis adjustable) and an analog output
- Absolute pressure type and compound pressure type which can control negative to positive pressure with only a single pressure gauge are all in line
- Three standard types of joint are provided  
R2 : R 1/4 (M 5 female screw)  
GF : G 3/8 with flash diaphragm  
G2 : G 1/4 (M 5 female screw)

## MODEL NUMBER DESIGNATION

**PA-850 - 102 R - N R2**

<p>Series name</p> <p>Pressure reference</p> <p>G : Gauge</p> <p>V : Gauge (Vacuum)</p> <p>R : Compound</p> <p>A : Absolute</p>	<p>Rated pressure range</p> <p>102 : 0 ~ 100 kPa</p> <p>352 : 0 ~ 350 kPa</p> <p>103 : 0 ~ 1000 kPa</p> <p>102 : 0 ~ - 100 kPa</p> <p>102 : - 100 ~ 100 kPa</p> <p>302 : - 100 ~ 300 kPa</p> <p>102 : 0 ~ 100 kPa abs</p>	<p>Fitting</p> <p>R2 : R 1/4 with M 5 female screw</p> <p>GF : G 3/8 with flash diaphragm</p> <p>G2 : G 1/4 with M 5 female screw</p> <p>Switch output interface</p> <p>N : NPN open collector (Upper limit mode)</p> <p>P : PNP open collector (Upper limit mode)</p>
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※ Please refer to the LIST OF MODEL NUMBERS when placing orders.

# PA-850

## PRESSURE TRANSDUCERS WITH AMP.

### LIST OF MODEL NUMBERS

Fitting	Pressure reference		Gauge					Absolute	
	SW output interface	kPa Rated pressure range	0 ~ 100	0 ~ 350	0 ~ 1000	0 ~ - 100	- 100 ~ 100	- 100 ~ 300	0 ~100
R2 (R 1/4)	NPN		PA-850-102G-NR2	PA-850-352G-NR2	PA-850-103G-NR2	PA-850-102V-NR2	PA-850-102R-NR2	PA-850-302R-NR2	PA-850-102A-NR2
	PNP		PA-850-102G-PR2	PA-850-352G-PR2	PA-850-103G-PR2	PA-850-102V-PR2	PA-850-102R-PR2	PA-850-302R-PR2	PA-850-102A-PR2
GF (G 3/8)	NPN		PA-850-102G-NGF	PA-850-352G-NGF	PA-850-103G-NGF	PA-850-102V-NGF	PA-850-102R-NGF	PA-850-302R-NGF	PA-850-102A-NGF
	PNP		PA-850-102G-PGF	PA-850-352G-PGF	PA-850-103G-PGF	PA-850-102V-PGF	PA-850-102R-PGF	PA-850-302R-PGF	PA-850-102A-PGF
G2 (G 1/4)	NPN		PA-850-102G-NG2	PA-850-352G-NG2	PA-850-103G-NG2	PA-850-102V-NG2	PA-850-102R-NG2	PA-850-302R-NG2	PA-850-102A-NG2
	PNP		PA-850-102G-PG2	PA-850-352G-PG2	PA-850-103G-PG2	PA-850-102V-PG2	PA-850-102R-PG2	PA-850-302R-PG2	PA-850-102A-PG2

※Verify the above model numbers when placing orders.

### 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	PA-850							
		102G	352G	103G	102V	102R	302R	102A	
General specifications	Pressure reference	Gauge						Absolute	
	Rated pressure range	kPa	100	350	1000	- 100	- 100 ~ 100	- 100 ~ 300	100 (abs)
	Maximum pressure	kPa	200	700	2000	200	200	600	200 (abs)
	Break-down pressure	kPa	300	1050	3000	300	300	900	300 (abs)
	Operating temp. range	°C	- 20 ~ 80						
	Compensated temp. range	°C	0 ~ 50						
	Operating humidity	%RH	35 ~ 85 (No condensation)						
	Storage temp.	°C	- 20 ~ 80 (Atmospheric pressure, humidity 65 %RH maximum)						
	Pressure medium		Corrosive gases/liquids compatible with SUS 316L						
	Insulation resistance	MΩ minimum	100 (500 V DC)						
	Dielectric strength		800 V AC, 60 s (Leakage current 1 mA maximum)						
	Sealed liquid		Silicone oil						
	Pressure port		R 1/4、G 3/8 (Flash diaphragm)、G 1/4 ※1						
	Net weight	g	R2 : Approx. 165, GF : Approx. 180, G2 : Approx. 170						
	Protection grade		IP65						

※1 An "O" ring provided. (G 3/8 : P18、G 1/4 : P15)

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Item		Model number	PA-850					
			102G	352G	103G	102V	102R	302R
Power	Supply voltage	V DC	10.8 ~ 30 (Including ripple voltage)					
	Consumption current	maximum	20 mA					
Analog output	Output voltage	V	1 ~ 5					
	Zero voltage	V	1 ± 0.04			3 ± 0.1	2 ± 0.1	1 ± 0.04
	Span voltage	V	4 ± 0.04			4 ± 0.1		4 ± 0.04
	Output current	mA maximum	1 (Load resistance 5 kΩ minimum)					
	Linearity/Hysteresis	%F.S.	± 0.5					
	Thermal error	ZERO %F.S./°C	± 0.06					
		SPAN %F.S./°C	± 0.06					
	Supply voltage effect	V maximum	± 0.02					
	Response	ms	Approx. 2					
	Gravitational effect (From horizontal position to vertical position)	%F.S.	± 0.3	± 0.1	± 0.05	± 0.3		± 0.1
Switch output	No. of outputs	1						
	Output interface	NPN or PNP open collector output						
	Setting method	Adjustable by VR						
	Adjustable range	0 ~ 100 % of rated pressure range						0 ~ 108 % of rated pressure range
	Display	Red LED						
	Accuracy (Reference temp.: 25 °C)	%F.S. ± 3						
	Hysteresis	Approx. 1 ~ 15 % of set value						
	Hysteresis setting method	Adjustable by VR						
	Switching capacity	30 V DC 100 mA						
	Residual voltage	NPN : 0.8 V, PNP : 1.2 V						

## ENVIRONMENTAL CHARACTERISTICS

Test item	Test conditions (At 25 ± 5 °C)	Permissible change
Vibration	10 ~ 500 Hz, 1.5 mm maximum/98.1 m/s <sup>2</sup> , 3 directions for 2 hours each	Switch output setting and analog output (Zero voltage, Span voltage) : ± 1 %F.S. maximum each
Shock	490 m/s <sup>2</sup> 3 directions for 3 times each	
Pressure cycling	10 <sup>6</sup> cycles 0 ~ Rated pressure/Rated pressure range	
Moisture resistance	40 °C, 90 ~ 95 %RH, 240 hrs.	

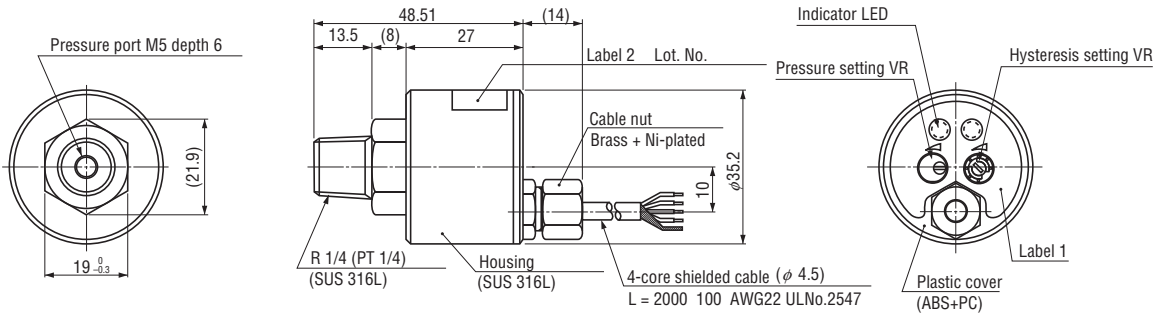
# PA-850

## PRESSURE TRANSDUCERS WITH AMP.

### OUTLINE DIMENSIONS

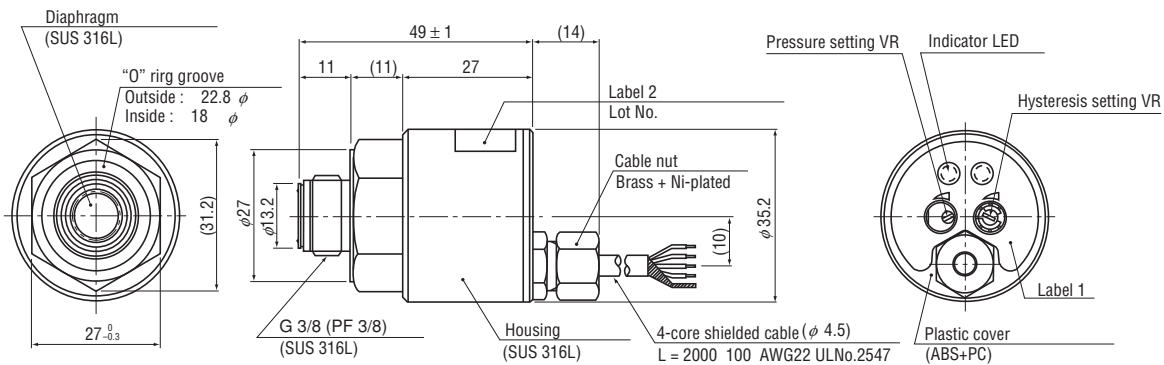
Unless otherwise specified, tolerance :  $\pm 0.5$  (Unit: mm)

#### Configurations of joint R2 (R1/4) type



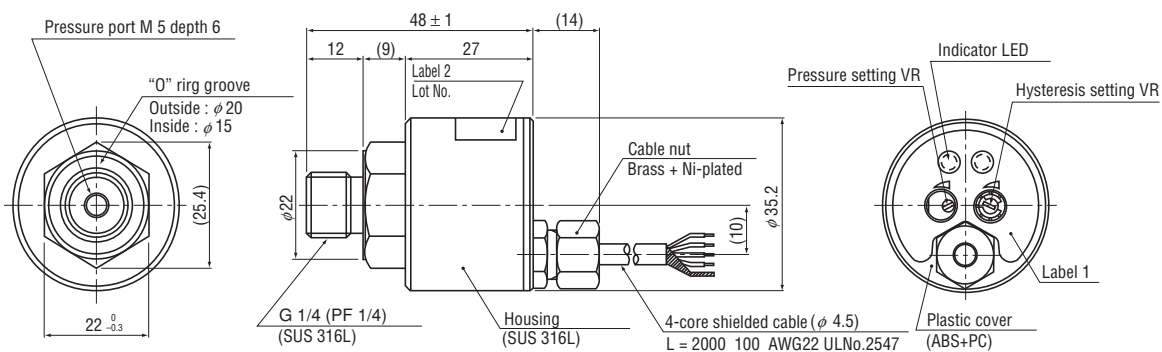
Wire color	Connection
Brown	Power $\oplus$
White	Analog output
Black	Switch output
Blue	Common
Shield	Fitting

#### Configurations of joint GF (G 3/8) type



**!** Extra care should be taken with the diaphragm part. Do not touch the diaphragm directly to avoid damaging the diaphragm.

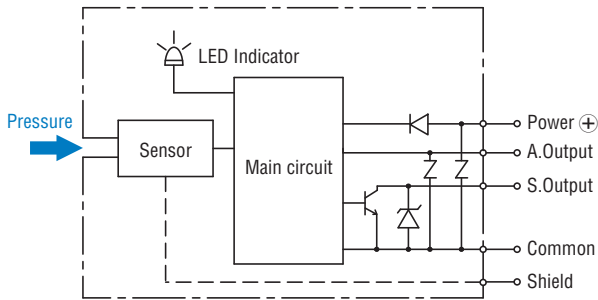
#### Configurations of joint G2 (G 1/4) type



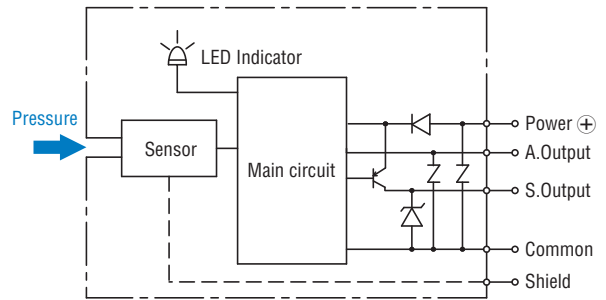
# PA-850 PRESSURE TRANSDUCERS WITH AMP.

## INTERNAL ELECTRICAL SCHEMATICS

### ● NPN output



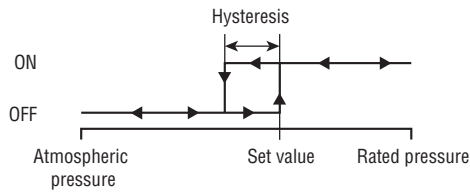
### ● PNP output



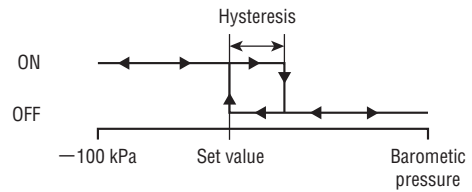
## SWITCH OUTPUT SCHEMATICS

Turns on at the set pressure and turns off at the set pressure minus the hysteresis.

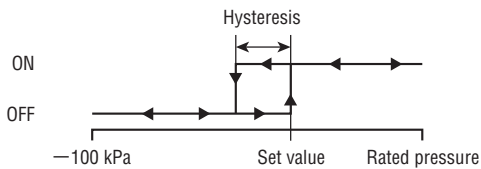
### ● PA-850-\*\*\*G



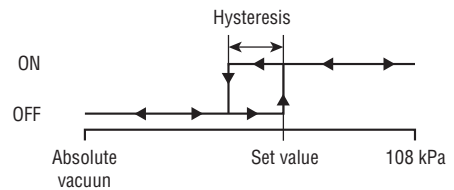
### ● PA-850-102V



### ● PA-850-\*\*\*R



### ● PA-850-\*\*\*A



※Adjustable hysteresis



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