

# PRESSURE SWITCHES

# PS85



## 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 two switch outputs
- Absolute pressure type and compound pressure type which can control negative to positive pressure with only a single pressure gauge are all in line
- 3 standard types of joint are provided  
R2: R 1/4 with M 5 female screw  
GF: G 3/8 with flash diaphragm  
G2: G 1/4 with M 5 female screw

**INTERNAL STRUCTURE (R 1/4)**

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

## MODEL NUMBER DESIGNATION

**PS85 - 102 R - N1 R2**

<p>Series name</p> <p>Pressure reference</p> <p>R : Compound</p> <p>A : Absolute</p>	<p>Rated pressure range</p> <p>102 : - 100 ~ 100 kPa</p> <p>352 : - 100 ~ 350 kPa</p> <p>103 : - 100 ~ 1000 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>N1 : NPN open collector (Upper and upper limit mode)</p> <p>N2 : NPN open collector (Upper and lower limit mode)</p> <p>P1 : PNP open collector (Upper and upper limit mode)</p> <p>P2 : PNP open collector (Upper and lower limit mode)</p>
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※ Please refer to the LIST OF MODEL NUMBERS when placing orders.

### LIST OF MODEL NUMBERS

Fitting	Pressure reference		Gauge			Absolute
	Switch output	kPa Rated pressure range	– 100 ~ 100	– 100 ~ 350	– 100 ~ 1000	0 ~ 100 (abs)
R2 (R 1/4)	NPN (Upper and upper limit mode)		PS85-102R-N1R2	PS85-352R-N1R2	PS85-103R-N1R2	PS85-102A-N1R2
	NPN (Upper and lower limit mode)		PS85-102R-N2R2	PS85-352R-N2R2	PS85-103R-N2R2	PS85-102A-N2R2
	PNP (Upper and upper limit mode)		PS85-102R-P1R2	PS85-352R-P1R2	PS85-103R-P1R2	PS85-102A-P1R2
	PNP (Upper and lower limit mode)		PS85-102R-P2R2	PS85-352R-P2R2	PS85-103R-P2R2	PS85-102A-P2R2
GF (G 3/8)	NPN (Upper and upper limit mode)		PS85-102R-N1GF	PS85-352R-N1GF	PS85-103R-N1GF	PS85-102A-N1GF
	NPN (Upper and lower limit mode)		PS85-102R-N2GF	PS85-352R-N2GF	PS85-103R-N2GF	PS85-102A-N2GF
	PNP (Upper and upper limit mode)		PS85-102R-P1GF	PS85-352R-P1GF	PS85-103R-P1GF	PS85-102A-P1GF
	PNP (Upper and lower limit mode)		PS85-102R-P2GF	PS85-352R-P2GF	PS85-103R-P2GF	PS85-102A-P2GF
G2 (G 1/4)	NPN (Upper and upper limit mode)		PS85-102R-N1G2	PS85-352R-N1G2	PS85-103R-N1G2	PS85-102A-N1G2
	NPN (Upper and lower limit mode)		PS85-102R-N2G2	PS85-352R-N2G2	PS85-103R-N2G2	PS85-102A-N2G2
	PNP (Upper and upper limit mode)		PS85-102R-P1G2	PS85-352R-P1G2	PS85-103R-P1G2	PS85-102A-P1G2
	PNP (Upper and lower limit mode)		PS85-102R-P2G2	PS85-352R-P2G2	PS85-103R-P2G2	PS85-102A-P2G2

※ 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	PS85				
		102R	352R	103R	102A	
General specifications	Pressure reference	Gauge			Absolute	
	Rated pressure range	kPa	– 100 ~ 100	– 100 ~ 350	– 100 ~ 1000	100 (abs)
	Maximum pressure	kPa	200	700	2000	200 (abs)
	Break-down pressure	kPa	300	1050	3000	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)			

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### 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	PS85			
			102R	352R	103R	102A
General specifications	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			
	Drip-proof structure		IP-65			
Power	Supply voltage	V DC	10.8 ~ 30 (Including ripple percentage)			
	Consumption current	maximum	20 mA			
Switch output	No. of outputs		2			
	Output interface		Open collector output (NPN or PNP)			
	Setting method		Adjustable by VR			
	Adjustable range		0 ~ 100 %		0 ~ 108 %	
	Output mode		Upper and upper limite mode/Upper and lower limite mode			
	Display		SW1 : Red LED ON, SW2 : Green LED ON			
	Accuracy	%F.S.	± 3			
	0 ~ 50 °C(Reference temp.: 25 °C)					
	Hysteresis	%F.S. maximum	2			
	Switching capacity		30 V DC 100 mA 以下			
	Residual voltage	V	0.8 (NPN), 1.2 (PNP)			
Response	ms	Approx. 2				

※1 An "O" ring is provided as accessory. (G 3/8 : P18, G 1/4 : P15)

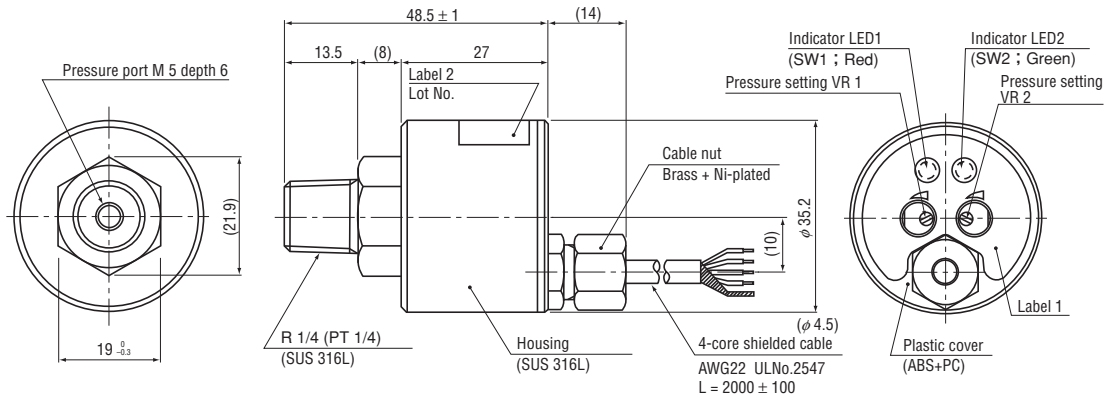
### ENVIRONMENTAL CHARACTERISTICS

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: ± 1 %F.S. maximum
Shock	490 m/s <sup>2</sup> 3 directions for 3 times each	
Pressure cycling	10 <sup>6</sup> cycles Rated pressure range	
Moisture resistance	40 °C, 90 ~ 95 %RH, 240 hrs.	

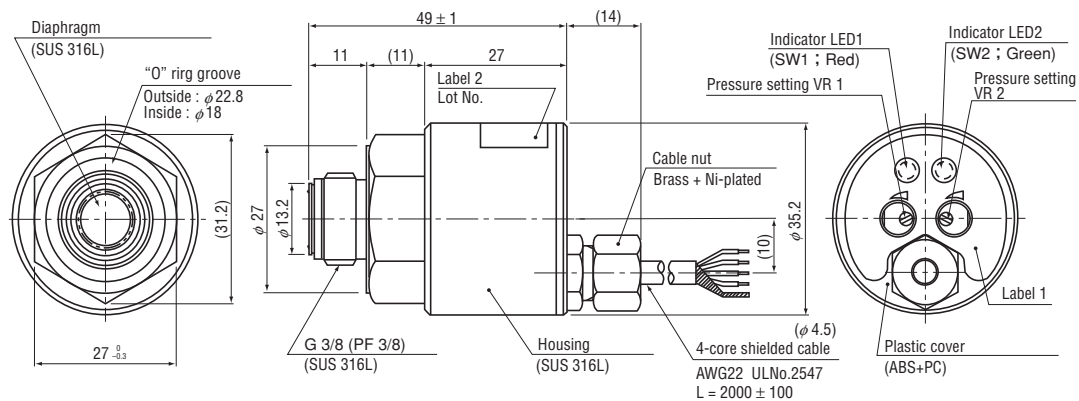
## OUTLINE DIMENSIONS

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

### Configurations of joint R2 (R 1/4) type

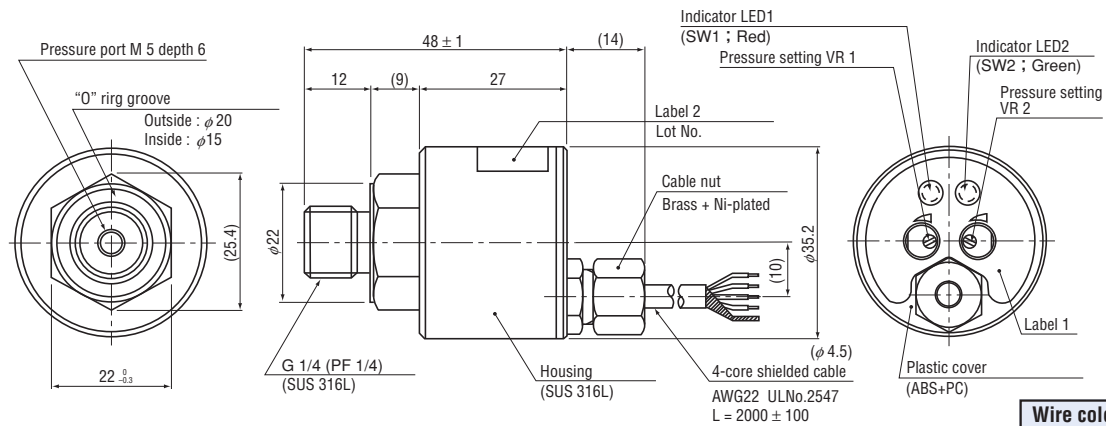


### Configurations of joint GF (G 3/8) type



**!** 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



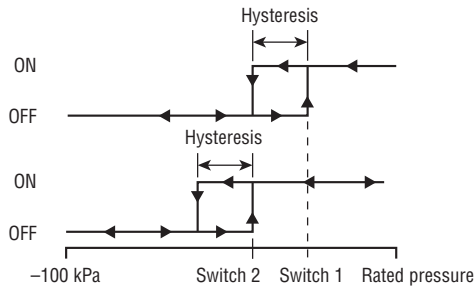
Wire color	Connection
Brown	Power $\oplus$
Black	Switch output 1
White	Switch output 2
Blue	Common
Shield	Fitting

# PS85

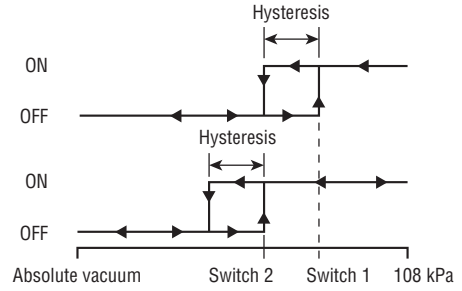
## PRESSURE SWITCHES

### SWITCH OUTPUT SCHEMATICS

● PS85-\*\*\*R-1\*\*

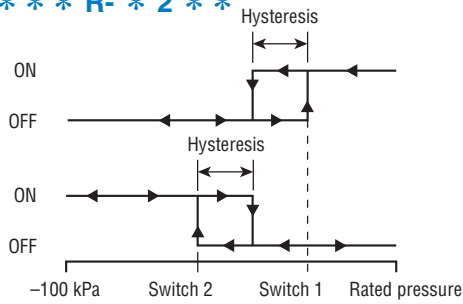


● PS85-102A-1\*\*

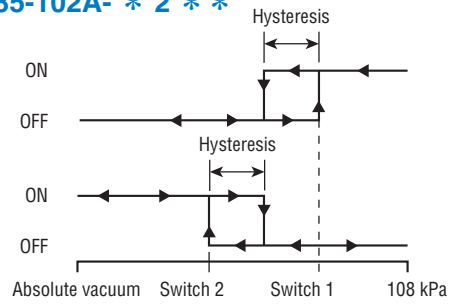


※ 2 switches show same performance.

● PS85-\*\*\*R-2\*\*

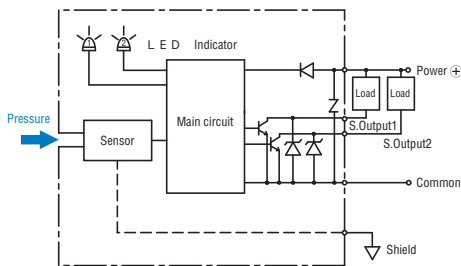


● PS85-102A-2\*\*



### INTERNAL ELECTRICAL SCHEMATICS

● NPN



● PNP

