

# PRESSURE SWITCHES

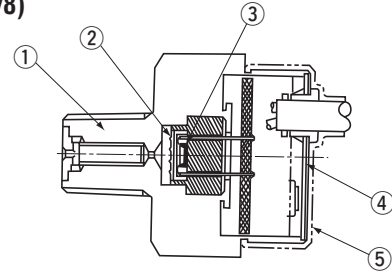
# PS86/PS87



## FEATURES

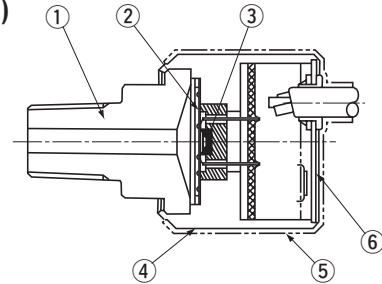
- Solidstate pressure switch with no mechanical moving parts
- Isolated output via a photo-coupler
- Switching pressure adjustable and hysteresis band adjustable
- Resistant against surge pressure (PS86)
- SUS 316L welded stainless steel diaphragm (PS86)
- High corrosion resistance by Hastelloy® diaphragm (PS87)

### INTERNAL STRUCTURE PS86 (G 3/8)



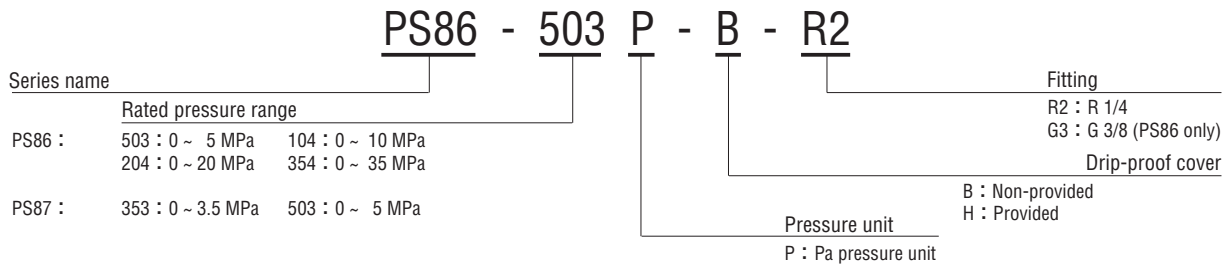
Part name	Material
① Fitting	Iron, Ni-plated
② Stainless steel diaphragm	SUS 316L
③ Sensor chip	Silicone
④ Back cover	SUS 303
⑤ Drip-proof cover	Silicone rubber

### INTERNAL STRUCTURE PS87 (R 1/4)



Part name	Material
① Fitting	SUS 316
② Stainless steel diaphragm	Hastelloy® C-22
③ Sensor chip	Silicone
④ Housing	SUS 316
⑤ Drip-proof cover	Silicone rubber
⑥ Back cover	SUS 303

## MODEL NUMBER DESIGNATION



※Please refer to the LIST OF MODEL NUMBERS when placing orders.

※Hastelloy® is a resistered trade name of Haynes International Inc.

# PS86/PS87

## PRESSURE SWITCHES

### LIST OF MODEL NUMBERS

Pressure medium	Fitting	Pressure reference Drip-proof cover / MPa Rated pressure range	Gauge				
			0 ~ 3.5	0 ~ 5	0 ~ 10	0 ~ 20	0 ~ 35
Hydraulic oil	R2 (R 1/4)	Non-provided	/	PS86-503P-B-R2	PS86-104P-B-R2	PS86-204P-B-R2	PS86-354P-B-R2
		Provided	/	PS86-503P-H-R2	PS86-104P-H-R2	PS86-204P-H-R2	PS86-354P-H-R2
	G3 (G 3/8)	Non-provided	/	PS86-503P-B-G3	PS86-104P-B-G3	PS86-204P-B-G3	PS86-354P-B-G3
		Provided	/	PS86-503P-H-G3	PS86-104P-H-G3	PS86-204P-H-G3	PS86-354P-H-G3
Gases/Liquids	R2 (R 1/4)	Non-provided	PS87-353P-B-R2	PS87-503P-B-R2	/	/	/
		Provided	PS87-353P-H-R2	PS87-503P-H-R2	/	/	/

☐: Not available

※ 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	PS86				PS87		
		503P	104P	204P	354P	353P	503P	
General specifications	Pressure reference	Gauge ※1						
	Rated pressure range	MPa	5	10	20	35	3.5	5
	Maximum pressure	MPa	10	20	40	52.5	7	10
	Operating temp. range	°C	- 10 ~ 75					
	Compensated temp. range	°C	0 ~ 50					
	Operating humidity	%RH	35 ~ 85 (No condensation)					
	Storage temp.	°C	- 20 ~ 90 (Atmospheric pressure, humidity 65 %RH maximum)					
	Pressure medium ※2		Hydraulic oil				Corrosive gases/liquids compatible with Hastelloy C-22 and SUS 316	
	Insulation resistance	MΩ minimum	100 (500 V DC)					
	Dielectric strength		350 V AC, 60 s (Leakage current 0.5 mA maximum)					
	Pressure port		R 1/4、G 3/8				R 1/4	
	Net weight	g	Approx. 170				Approx. 190	
	Protection grade		Without drip-proof cover : IP-54, With drip-proof cover : IP-65					

※1 The transducer measures gauge pressure using an absolute pressure sensing element.

※2 Hydraulic oil is used as a measurement medium at the time of delivery inspection.

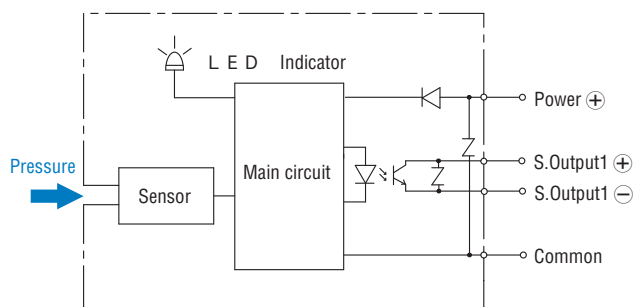
# PS86/PS87 PRESSURE SWITCHES

Item	Model number	PS86				PS87	
		503P	104P	204P	354P	353P	503P
Power	Supply voltage	12 ~ 24 V ± 10 %					
	Consumption current	maximum 15 mA					
Switch output	No. of outputs	1					
	Output interface	Open collector output which insulated a photo-coupler					
	Setting method	Adjustable by VR					
	Adjustable range	5 ~ 105 % of rated pressure range					
	Display	Red LED ON					
	Accuracy 0 ~ 50 °C(Reference temp.: 25 °C)	%F.S. ± 3					
	Hysteresis	%F.S. Approx. 1 ~ 10 % of setting range					
	Switching capacity	35 V DC 100 mA					
	Residual voltage	V maximum 1.2					
	Response	ms				Approx. 20	

## ENVIRONMENTAL CHARACTERISTICS

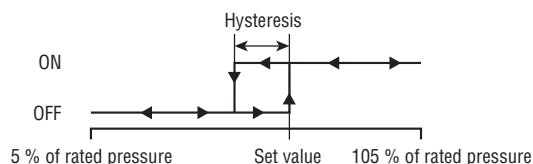
Test item	Test conditions (At 25 ± 5 °C)	Permissible change
Vibration	10 ~ 500 Hz, 1.5 mm maximum/98.1 m/s <sup>2</sup> , 3 directions for 2 hours each	Switch output setting: ± 3 %F.S. maximum
Shock	490 m/s <sup>2</sup> , 3 directions for 3 times each	
Pressure cycling	10 <sup>6</sup> cycles Rated pressure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

## INTERNAL ELECTRICAL SCHEMATICS



## SWITCH OUTPUT SCHEMATICS

### ● PS86/87- \* \* \* P



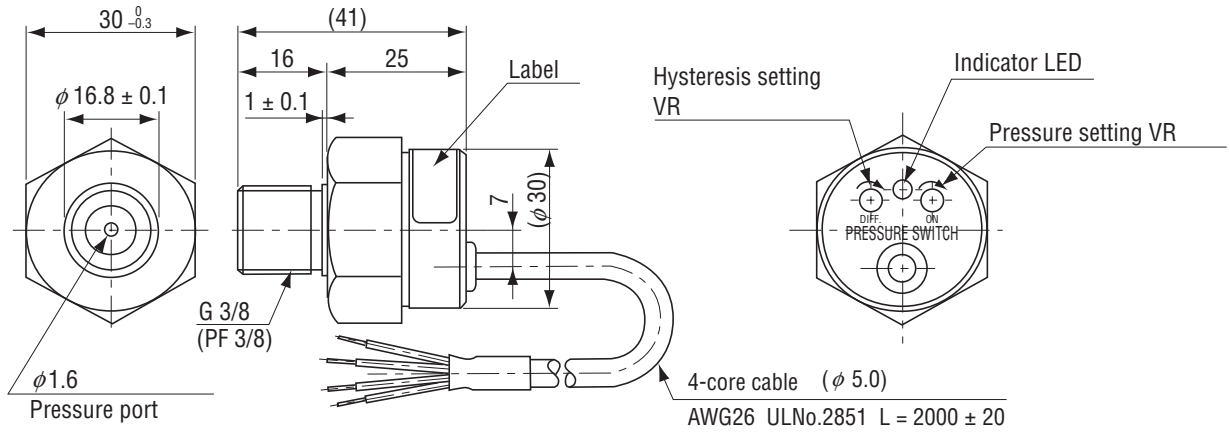
※ Adjustable hysteresis

# PS86/PS87 PRESSURE SWITCHES

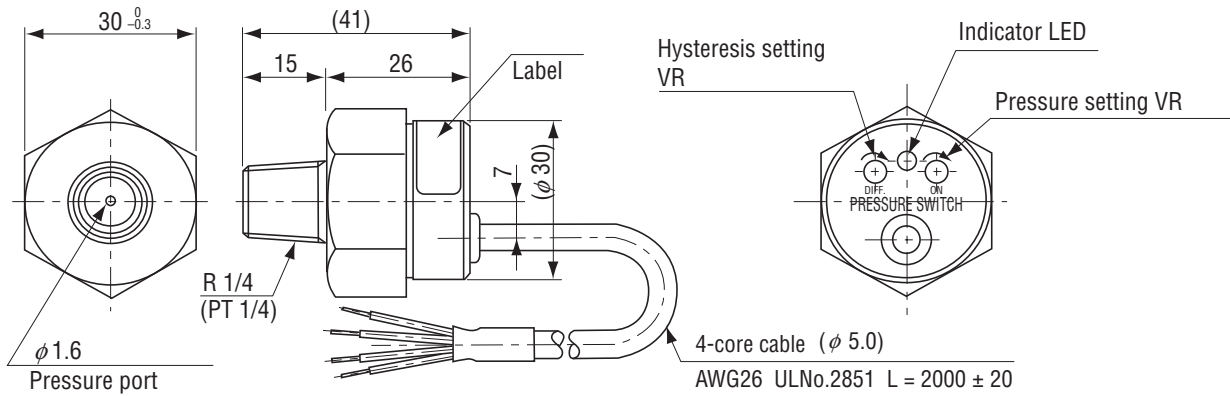
## OUTLINE DIMENSIONS

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

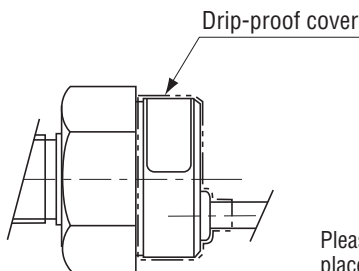
### Configurations of joint G3 (G 3/8) type



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



### Drip-proof cover type



Please make sure that the drip-proof cover is properly placed over the main body and the cable.

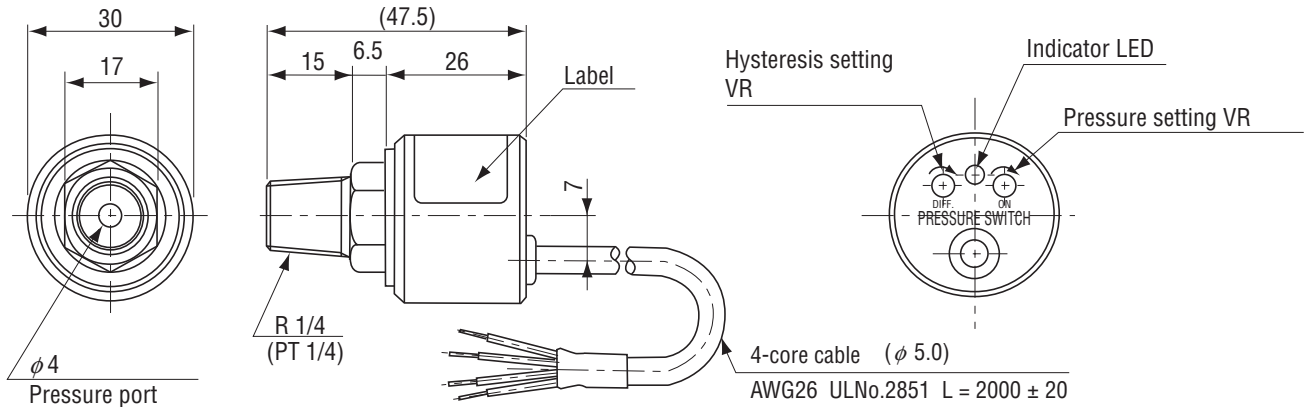
Wire color	Connection
Red	Power ⊕
Black	Power ⊖
White	Output ⊕
Green	Output ⊖

# PS86/PS87 PRESSURE SWITCHES

## OUTLINE DIMENSIONS

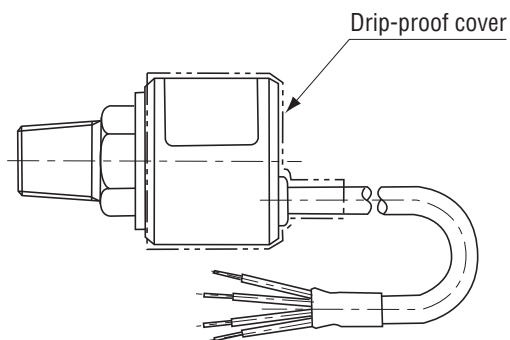
Unless otherwise specified, tolerance :  $\pm 0.5$  (Unit: mm)

### ● PS87



Wire color	Connection
Red	Power $\oplus$
Black	Power $\ominus$
White	Output $\oplus$
Green	Output $\ominus$

### ● Drip-proof cover type



Please make sure that the drip-proof cover is properly placed over the main body and the cable.