

PRESSURE SWITCHES

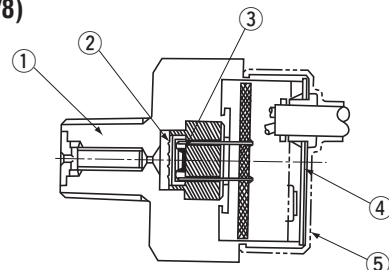
PS86/PS87



FEATURES

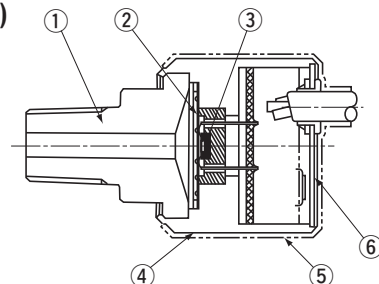
- Solidstate pressure switch with no mechanical moving parts
- Isolated output via a photo-coupler
- Switching pressure adjustable and hysteresis band adjustable
- Resistant against surge pressure (PS86)
- SUS 316L welded stainless steel diaphragm (PS86)
- High corrosion resistance by Hastelloy®* diaphragm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

Series name		PS86 - 503		P	-	B	-	R2	Fitting	
Rated pressure range		503 : 0 ~ 5 MPa		104 : 0 ~ 10 MPa		204 : 0 ~ 20 MPa		354 : 0 ~ 35 MPa		R2 : R 1/4
PS86 :										G3 : G 3/8 (PS86 only)
PS87 :		353 : 0 ~ 3.5 MPa		503 : 0 ~ 5 MPa						Drip-proof cover
										B : Non-provided
										H : Provided
										Pressure unit
										P : Pa pressure unit

※ 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	Gauge				
		Drip-proof cover \ MPa Rated pressure range	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.

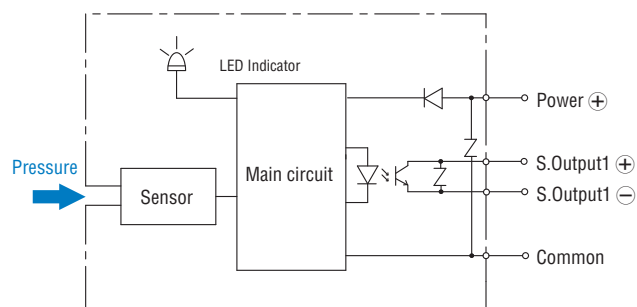
PS86 / PS87 PRESSURE SWITCHES

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							

ENVIRONMENTAL CHARACTERISTICS

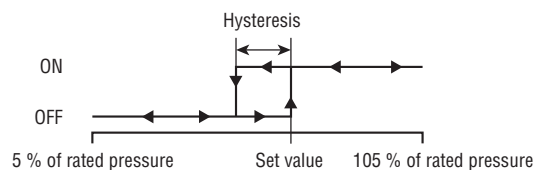
Test item	Test conditions (At 25 $\pm$ 5 °C)	Permissible change
Vibration	10 ~ 500 Hz, 1.5 mm maximum/98.1 m/s ² , 3 directions for 2 hours each	Switch output setting: $\pm$ 3 %F.S. maximum
Shock	490 m/s ² , 3 directions for 3 times each	
Pressure cycling	10 ⁶ cycles Rated pressure range	
Moisture resistance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

INTERNAL ELECTRICAL SCHEMATICS



SWITCH OUTPUT SCHEMATICS

PS86/87- * * * P



※ Adjustable hysteresis

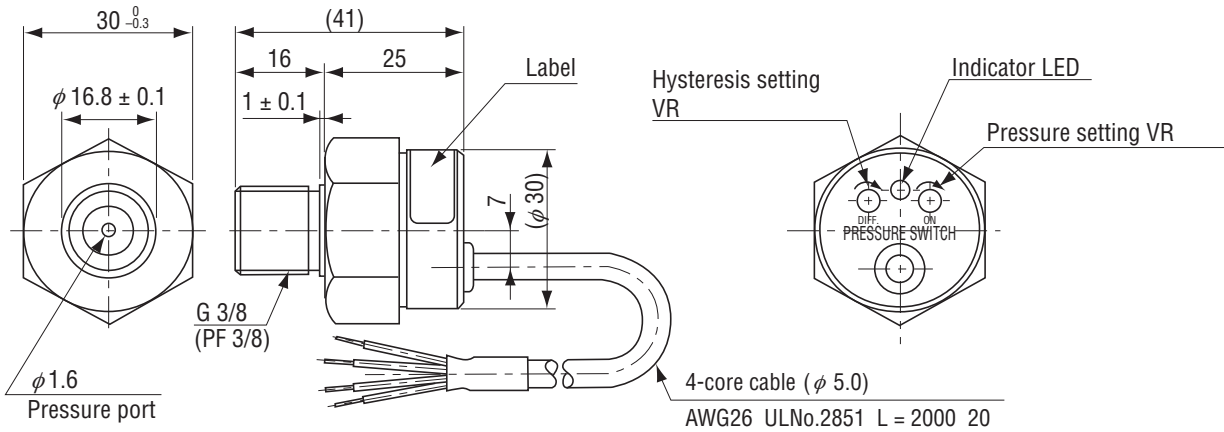
PS86/PS87

RESSURE SWITCHES

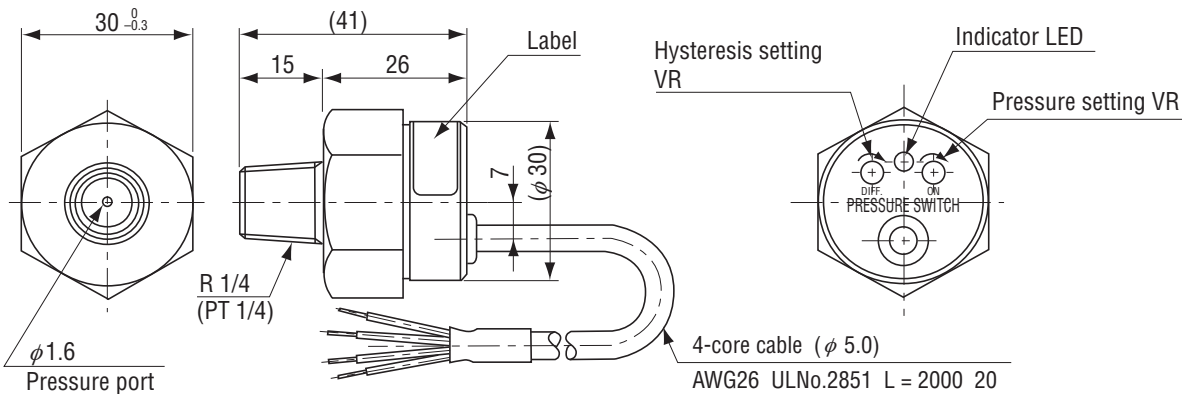
OUTLINE DIMENSIONS

Configurations of joint G3 (G 3/8) type

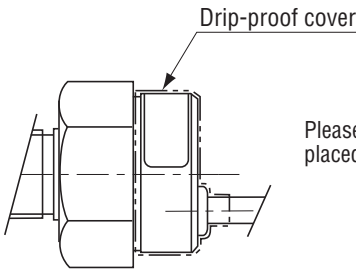
Unless otherwise specified, tolerance : ± 0.5 (Unit: mm)



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.

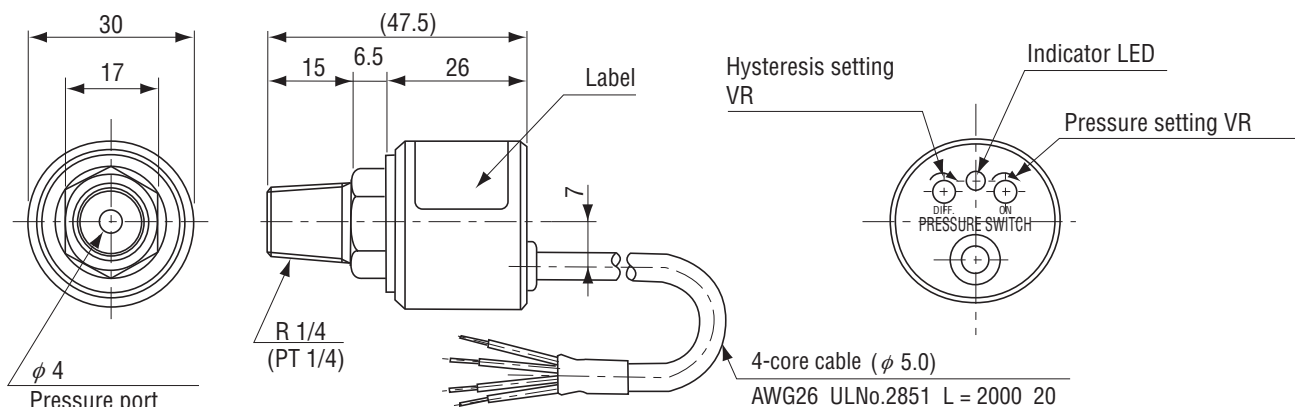
Wire color	Connection
Red	Power ⊕
Black	Power ⊖
White	Output ⊕
Green	Output ⊖

PS86 / PS87 PRESSURE SWITCHES

OUTLINE DIMENSIONS

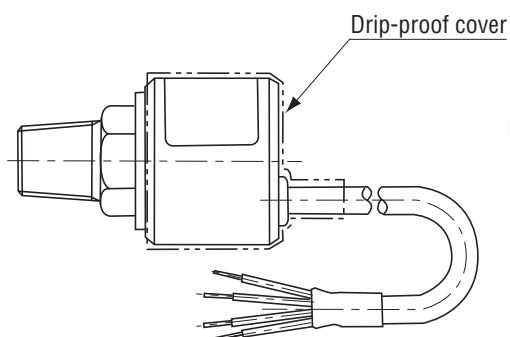
Unless otherwise specified, tolerance : ± 0.5 (Unit: mm)

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.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Nidec:

[PS87-353P-B-R2](#) [PS87-353P-H-R2](#) [PS87-503P-B-R2](#) [PS87-503P-H-R2](#)