

PRESSURE TRANSDUCERS WITH AMP.

PA-860/PA-868



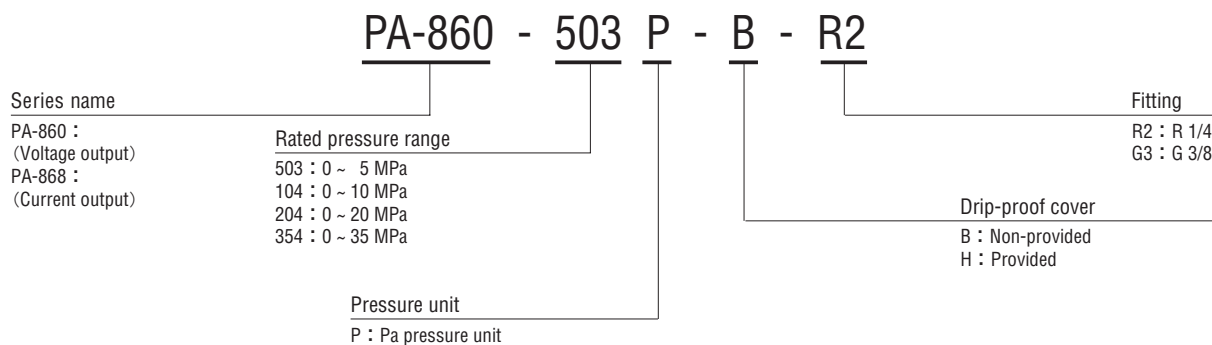
INTERNAL STRUCTURE
 PA-860/PA-868 (G 3/8)

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

FEATURES

- Resistant against surge pressure
- SUS 316L welded stainless steel diaphragm
- Built-in amplifier circuit
- Voltage or current output modes are available

MODEL NUMBER DESIGNATION



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

PA-860/PA-868

PRESSURE TRANSDUCERS WITH AMP.

LIST OF MODEL NUMBERS

Output	Fitting	Pressure reference		Gauge			
		Drip-proof cover	Rated pressure range MPa	0 ~ 5	0 ~ 10	0 ~ 20	0 ~ 35
Voltage output	R2 (R 1/4)	Non-provided		PA-860-503P-B-R2	PA-860-104P-B-R2	PA-860-204P-B-R2	PA-860-354P-B-R2
		Provided		PA-860-503P-H-R2	PA-860-104P-H-R2	PA-860-204P-H-R2	PA-860-354P-H-R2
	G3 (G 3/8)	Non-provided		PA-860-503P-B-G3	PA-860-104P-B-G3	PA-860-204P-B-G3	PA-860-354P-B-G3
		Provided		PA-860-503P-H-G3	PA-860-104P-H-G3	PA-860-204P-H-G3	PA-860-354P-H-G3
Current output	R2 (R1/4)	Non-provided		PA-868-503P-B-R2	PA-868-104P-B-R2	PA-868-204P-B-R2	PA-868-354P-B-R2
		Provided		PA-868-503P-H-R2	PA-868-104P-H-R2	PA-868-204P-H-R2	PA-868-354P-H-R2
	G3 (G 3/8)	Non-provided		PA-868-503P-B-G3	PA-868-104P-B-G3	PA-868-204P-B-G3	PA-868-354P-B-G3
		Provided		PA-868-503P-H-G3	PA-868-104P-H-G3	PA-868-204P-H-G3	PA-868-354P-H-G3

※ 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-860				PA-868				
		503P	104P	204P	354P	503P	104P	204P	354P	
General specifications	Pressure reference	Gauge ※1								
	Rated pressure range	MPa	5	10	20	35	5	10	20	35
	Maximum pressure	MPa	10	20	40	52.5	10	20	40	52.5
	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							
	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							
	Net weight	g	Approx. 170							
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.

PA-860/PA-868

PRESSURE TRANSDUCERS WITH AMP.

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-860				PA-868				
			503P	104P	204P	354P	503P	104P	204P	354P	
Power	Supply voltage	V DC	12 ~ 24 \pm 10 %								
	Consumption current	maximum	10 mA				—				
Analog output	Output voltage/current	DC	1 ~ 5 V				4 ~ 20 mA				
	Zero voltage/current		1 \pm 0.05 V				4 \pm 0.1 mA				
	Span voltage/current		4 \pm 0.05 V				16 \pm 0.1 mA				
	Linearity/Hysteresis	%F.S.	\pm 0.5								
	Thermal error	ZERO	%F.S./°C	\pm 0.05							
		SPAN	%F.S./°C	\pm 0.05							
	Load resistance			10 k Ω minimum				500 Ω maximum (At power voltage 24 V)			
Response	ms maximum		20								

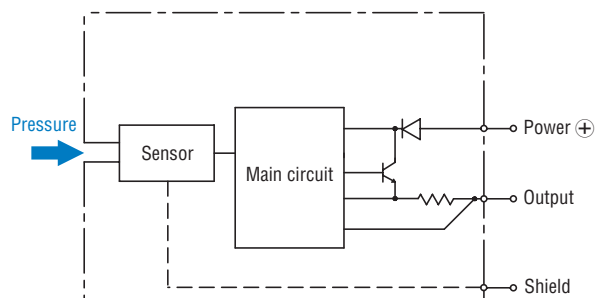
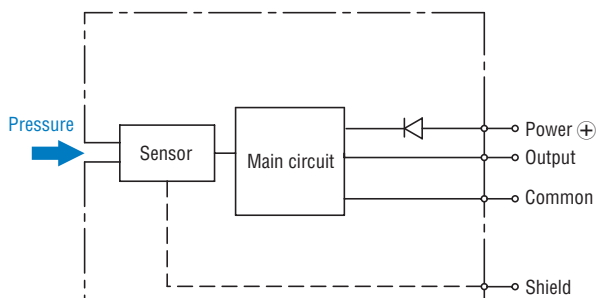
ENVIRONMENTAL CHARACTERISTICS

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

INTERNAL ELECTRICAL SCHEMATICS

● PA-860

● PA-868

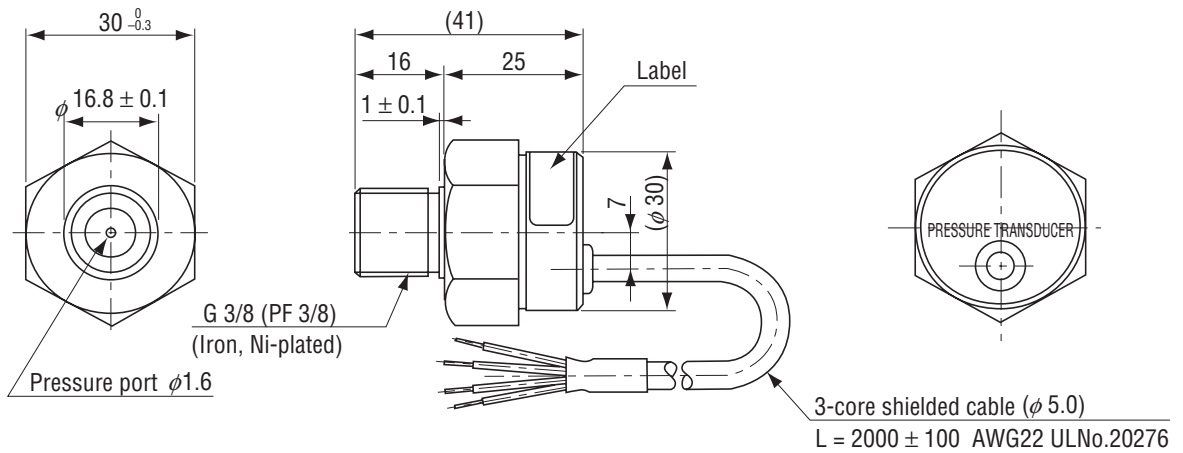


PA-860/PA-868 PRESSURE TRANSDUCERS WITH AMP.

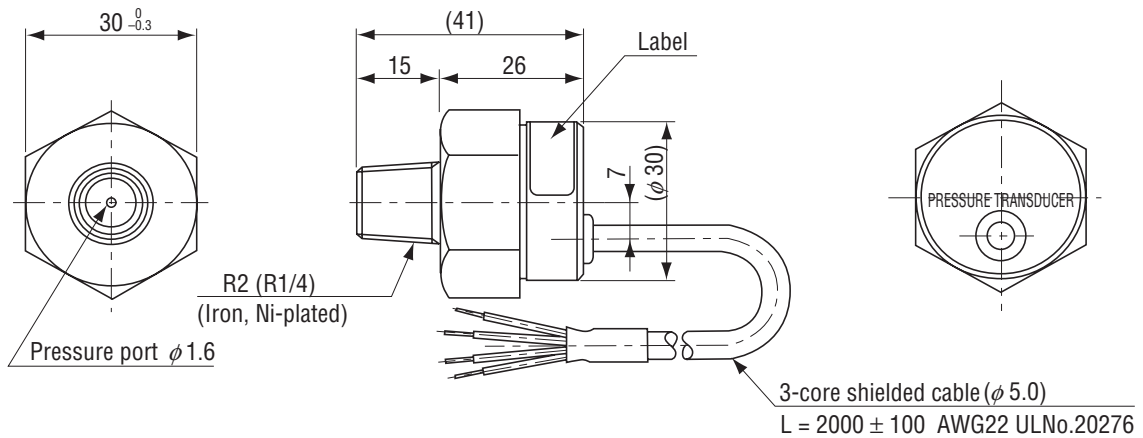
OUTLINE DIMENSIONS

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

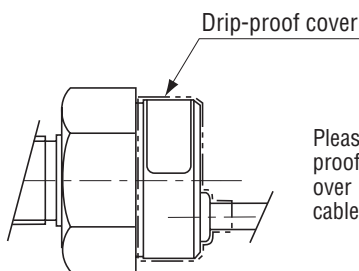
Configurations of joint G3 (G 3/8) type



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.

PA-860

Wire color	Connection
Red	Power ⊕
Black	Common
White	Output
Gray	Fitting

PA-868

Wire color	Connection
Red	Power ⊕
Black	N.C.
White	Output
Gray	Fitting

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)

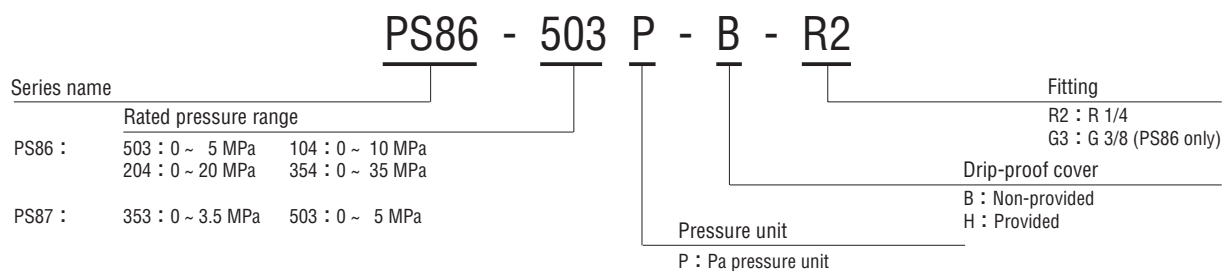
INTERNAL STRUCTURE PS86 (G 3/8)

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		Gauge				
		Drip-proof cover	Rated pressure range MPa	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.C.

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.

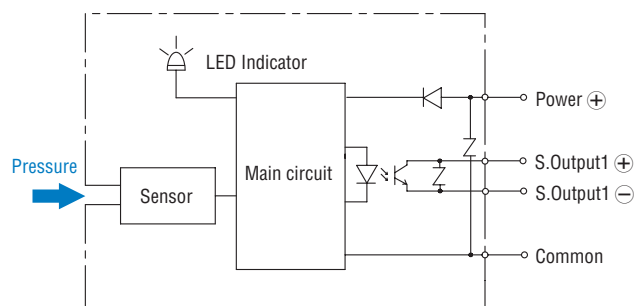
PS86/PS87 PRESSURE SWITCHES

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 maximum V	1.2					
	Response ms	Approx. 20				Approx. 2	

ENVIRONMENTAL CHARACTERISTICS

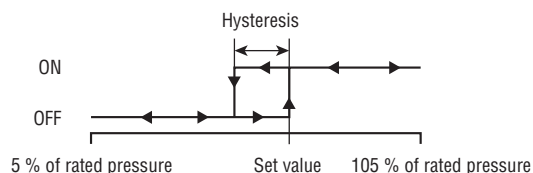
Test item	Test conditions (At 25 ± 5 °C)	Permissible change
Vibration	10 ~ 500 Hz, 1.5 mm maximum/98.1 m/s ² , 3 directions for 2 hours each	Switch output setting: ± 3 %F.S. maximum
Shock	490 m/s ² , 3 directions for 3 times each	
Pressure cycling	Rated pressure range, 10 ⁶ cycles	
Moisture resistance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

INTERNAL ELECTRICAL SCHEMATICS



SWITCH OUTPUT SCHEMATICS

● PS86/87-***P



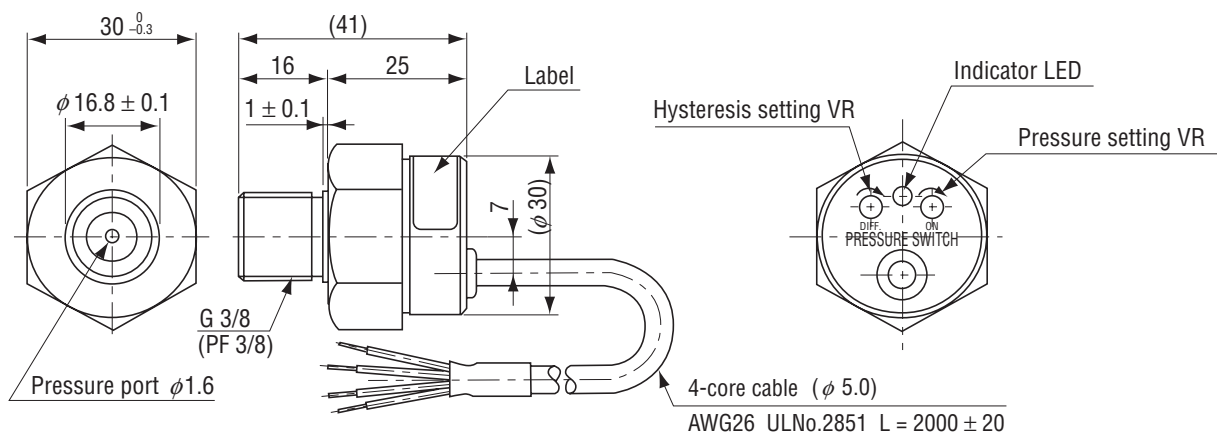
※Adjustable hysteresis

PS86/PS87 PRESSURE SWITCHES

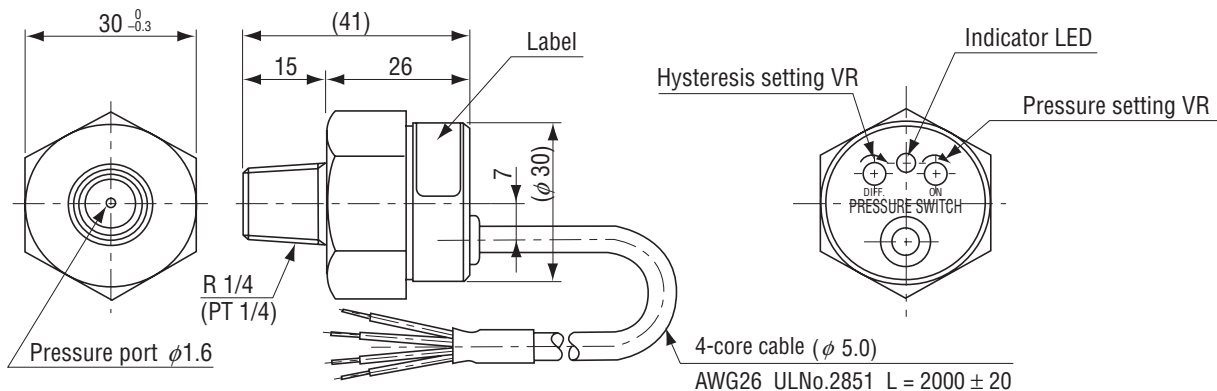
OUTLINE DIMENSIONS

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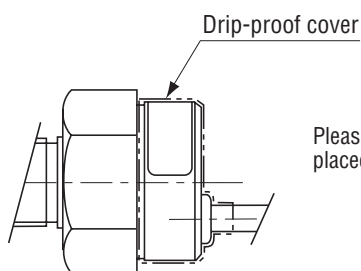
Configurations of joint G3 (G 3/8) type



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.

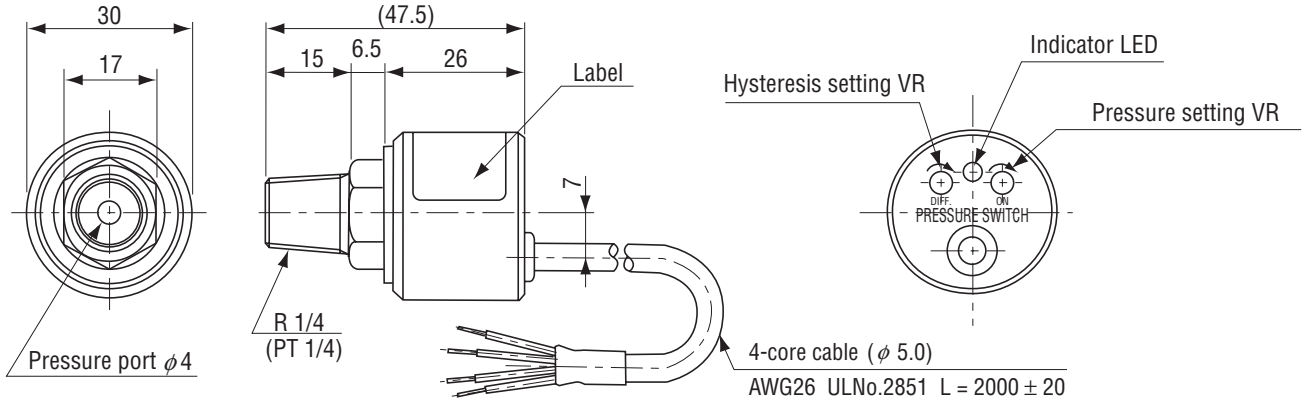
Wire color	Connection
Red	Power \oplus
Black	Power \ominus
White	Output \oplus
Green	Output \ominus

PS86/PS87 PRESSURE SWITCHES

OUTLINE DIMENSIONS

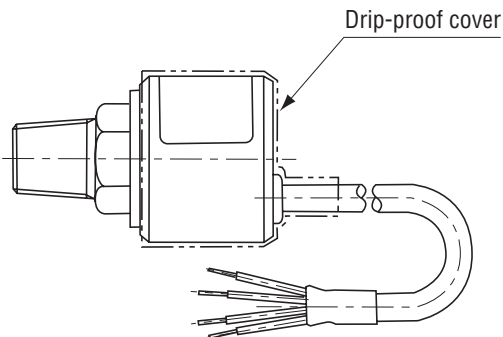
● PS87

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



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.