

PRESSURE TRANSDUCERS WITH AMP.

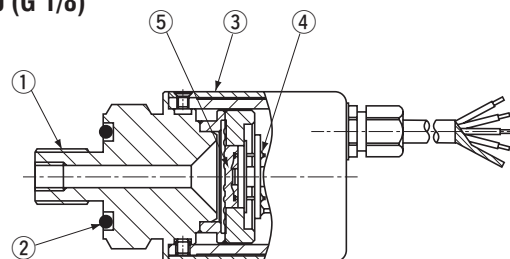
PA-830



FEATURES

- High corrosion resistance by double diaphragm structure
- Built-in amplifier circuit
- 2 types to choose from (Gauge and Absolute pressures)
- Incorporating temperature compensation function (0 ~ 50 °C)
- Voltage output mode
- Available with a * VCR® fitting

INTERNAL STRUCTURE PA-830 (G 1/8)



Part name		Material
①	Fitting	SUS 316L
②	(P15 or P12.5) "O" ring	Fluoro-rubber
③	Housing	Aluminum
④	Compensation resistor board	Ceramic
⑤	Sealed liquid	Silicone oil

MODEL NUMBER DESIGNATION

PA-830-102A-05

Series name

Rated pressure range

101 : 0 ~ 9.8 kPa {0 ~ 0.1 kgf/cm²}
 351 : 0 ~ 34.3 kPa {0 ~ 0.35 kgf/cm²}
 501 : 0 ~ 49.0 kPa {0 ~ 0.5 kgf/cm²}
 102 : 0 ~ 98.1 kPa {0 ~ 1 kgf/cm²}
 352 : 0 ~ 343 kPa {0 ~ 3.5 kgf/cm²}
 103 : 0 ~ 981 kPa {0 ~ 10 kgf/cm²}

Thermal error/Fitting

05 : ± 0.05 % F.S./°C, G 1/8
 10 : ± 0.1 % F.S./°C, G 1/8
 R2 : ± 0.05 % F.S./°C, R 1/4
 VCR : ± 0.05 % F.S./°C, VCR®

Pressure reference

G : Gauge
 A : Absolute
 V : Gauge (Vacuum)

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

※ VCR® is a registered trade name of Cajon Co. CAJON® is a registered trade name of Swagelok Co.

Note: For handling of VCR fittings, please contact a service center of Swagelok Co.

PA-830

PRESSURE TRANSDUCERS WITH AMP.

LIST OF MODEL NUMBERS

Output	Pressure reference		Gauge						Absolute	
	{% F.S./°C} Thermal error	kPa {kgf/cm²} Rated pressure range	0 ~ 9.8 {0 ~ 0.1}	0 ~ 49.0 {0 ~ 0.5}	0 ~ 98.1 {0 ~ 1}	0 ~ 343 {0 ~ 3.5}	0 ~ 981 {0 ~ 10}	0 ~ 98.1 {0 ~ 1}	0 ~ 34.3 {0 ~ 0.35}	0 ~ 98.1 {0 ~ 1}
Voltage output	± 0.05	Fitting : G 1/8		PA-830 -501G-05	PA-830 -102G-05	PA-830 -352G-05	PA-830 -103G-05	PA-830 -102V-05	PA-830 -351A-05	PA-830 -102A-05
		Fitting : R 1/4		PA-830 -501G-R2	PA-830 -102G-R2	PA-830 -352G-R2	PA-830 -103G-R2	PA-830 -102V-R2	PA-830 -351A-R2	PA-830 -102A-R2
		Fitting : VCR		PA-830 -501G-VCR	PA-830 -102G-VCR	PA-830 -352G-VCR	PA-830 -103G-VCR	PA-830 -102V-VCR	PA-830 -351A-VCR	PA-830 -102A-VCR
	± 0.10	Fitting : G 1/8	PA-830 -101G-10	PA-830 -501G-10	PA-830 -102G-10	PA-830 -352G-10	PA-830 -103G-10	PA-830 -102V-10	PA-830 -351A-10	PA-830 -102A-10

☐: 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		PA-830							
		101G	501G	102G	352G	103G	102V	351A	102A
General specifications	Pressure reference	Gauge						Absolute	
	Rated pressure range kPa {kgf/cm²}	9.8 {0.1}	49.0 {0.5}	98.1 {1}	343 {3.5}	981 {10}	98.1 {1}	34.3 (abs) {0.35}	98.1 (abs) {1}
	Maximum pressure kPa {kgf/cm²}	19.6 {0.2}	98.1 {1}	196 {2}	686 {7}	1961 {20}	196 {2}	103 (abs) {1.05}	196 (abs) {2}
	Break-down pressure kPa {kgf/cm²}	29.4 {0.3}	147 {1.5}	294 {3}	1030 {10.5}	2942 {30}	294 {3}	147 (abs) {1.5}	294 (abs) {3}
	Operating temp. range °C	- 20 ~ 70							
	Compensated temp. range °C	0 ~ 50							
	Operating humidity %RH	35 ~ 85 (No condensation)							
	Storage temp. °C	- 20 ~ 70 (Atmospheric pressure, humidity 65 %RH maximum)							
	Pressure medium	Corrosive gases/liquids compatible with SUS 316L ※ 1							
	Insulation resistance MΩ minimum	100 (500 V DC)							
	Dielectric strength	500 V AC, 60 s (Leakage current 1 mA maximum)							
	Sealed liquid	Silicone oil							
	Pressure port	G 1/8 (PF 1/8)、R 1/4 (PT 1/4)、1/4 VCR® ※ 2							
	Net weight g	Approx. 140							
Power	Supply voltage V DC	12 ~ 24 ± 10 %							
	Ripple content maximum	10 % (P-P)							
	Consumption current mA maximum	20							

※ 1 PA-830-VCR : Also compatible with SUS316.

※ 2 An "O" ring is provided for only G1/8 type. (Positive pressure : P15, Negative/Absolute Pressure : P12.5)

PA-830

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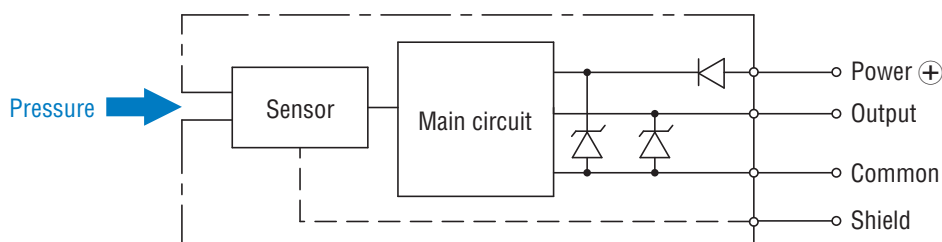
Item		Model number	PA-830							
			101G	501G	102G	352G	103G	102V	351A	102A
Analog output	Output voltage V DC		1 ~ 5							
	Zero voltage V		1 ± 0.04 (at 25 °C)							
	Span voltage V		4 ± 0.04 (at 25 °C)							
	Output current mA maximum		1 (Load resistance 5 kΩ minimum)							
	Linearity/Hysteresis %F.S.		± 0.5	± 0.3		± 0.5		± 0.3	± 0.5	
	Thermal error 0 ~ 50 °C (Reference temp.: 25 °C)	ZERO %F.S./°C	± 0.05/± 0.1 ※ 3							
		SPAN %F.S./°C	± 0.05/± 0.1 ※ 3							
	Supply voltage effect V maximum		± 0.1							
	Response ms		Approx. 2							
	Gravitational effect (From vertical position to horizontal position) %F.S. max.		Approx. 1	Approx. 0.5	Approx. 0.3	Approx. 0.1	Approx. 0.05	Approx. 0.3	Approx. 0.5	Approx. 0.3

※ 3 The thermal error of the PA-830-101G will be ± 0.1 %F.S./°C only.

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, Span voltage: ± 1 %F.S. maximum each and ±3 %F.S. (101G) 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.	

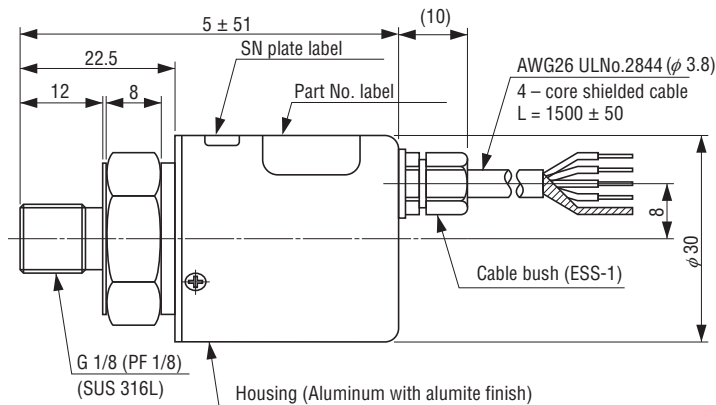
INTERNAL ELECTRICAL SCHEMATICS



- **G1/8 type**

PA-830

Wire color	Connection
Red	Power (+)
White	Output
Green	N.C.
Black	Common
Shield	Fitting



Technical drawing of the AWG26 ULN0.2844 cable head assembly, showing dimensions and components.

Dimensions:

- Total length: 56 ± 1
- Distance from front flange to start of cable: 23.5
- Distance from end of cable to back of housing: (10)
- Front flange diameter: $R\ 1/4\ (PT\ 1/4)\ (SUS\ 316L)$
- Cable diameter: $\phi\ 3.8$
- Cable length: $L = 1500 \pm 50$
- Cable bush (ESS-1) diameter: $\phi\ 30$

Labels and Components:

- SN plate label
- Part No. label
- Cable bush (ESS-1)
- Housing (Aluminum with alumite finish)

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Mouser Electronics

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Nidec:

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