SS316 series piezoresistive pressure transmitters for hot steam application

Features

- CE conformity
- Rugged construction
- Full welded sensor with pressure port
- Piezoresistive pressure sensor, oil filled
- Pressure ranges from 0..0.1 up to 1000 bar
- Isolated construction, able to test various media
- Integrated with cooling fins, maximum temp to 250°C
- Output signals: 4-20mA and 0-10V, 0-5V voltage output

Descriptions

SS316 series high temperature pressure transmitter is developed from SS306 series, the sensor capsule is full welded with the pressure port, no elastic element is used inside, has a good anti-impact, anti-shock ability. Different numbers of cooling fins are integrated between the process connection and housing, acting as a heat sink, which cools the process before it reaches the transmitter, extend the maximum process temperature of pressure sensor from 302 °F (150 °C) up to 482 °F (250 °C), with 5 pcs of cooling extensions, the standard medium working temperature is up to 150°C, 10 pcs is 200°C, and 15 pcs is 250°C.

SS316 series with cooling fins for use in applications for measuring pressure of high temperature steam such as sterilizing autoclaves, food processing and power generation. The whole product is produced through components making, semi-finished product and all-finished product strict testing and aging, having stable and reliable performance.

Technical data

Performance (EN 60770)

Accuracy @ 25 °C	± 0.5% F.S. (incl. non-linearity, hysteresis and repeatability)
Non-linearity BFSL (conformity)	± 0.3% F.S.
Hysteresis and repeatability	± 0.1% F.S.
Response time	< 4 ms
Pressure range	Minimum range: 0.1 bar Maximum range: 1000 bar See more details in page 5 (part number chart)
Overload pressure	2.0 × F.S. (≤ 250 bar)
	1.5 × F.S. (> 250 bar), 1.2 × F.S. (1000bar)
Pressure type	vented gauge, sealed gauge, absolute
Long term stability	≤ 0.2% F.S./Year
Temperature coefficient	± 0.03% F.S./°C

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Electrical specifications

Output signal	4-20mA	0-10V	0-5V/0.5-4.5V	0.5-4.5V	10%-90%
Supply voltage	9-30Vdc	12-30Vdc	9-30Vdc	5Vdc	5V ratio-metric
Polarity protected	yes	yes	yes	yes	yes
Short-circuit protected	yes	yes	yes	yes	yes
Zero and span adjustment	No	No	No	No	No
Surge protection	yes	yes	yes	yes	yes

Environmental conditions

Medium temp range	-20 → +150 °C (typical)	More options see page 5
Ambient temp range	-20 → +80 °C (depending on electrical connection)	
Compensated temp range	0 → +70 °C	
EMC - Emission	EN 61000-6-3	
EMC - Immunity	EN 61000-6-1	
Insulation resistance	> 100 MΩ at 250 V	

Mechanical characteristics

Materials	Diaphragm	Stainless steel 316L (typical)	More options see page 5
	Housing	Stainless steel 304 (typical)	Stainless steel 316L (optional)
	Pressure connection	Stainless steel 304 (typical)	Stainless steel 316L (optional)
	Electrical connection	Depending on the connection type	
	O-ring	No elastic element, the transmitter capsule is full welded with the pressure port	
Pressure connection	1/4” BSP, 1/4” NPT, 9/16-18 UNF, M14 x 1.5	More options see page 5	
Electrical connection	DIN43650A, DIN43650C, Cable outlet, M12 × 1, LED Display		
Weight	300-500g (depending on pressure connection and electrical connection)		
Sealing rating	IP 65 (fulfilled together with mating connector)		

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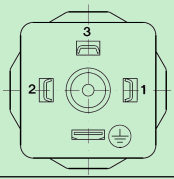
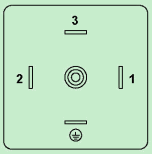
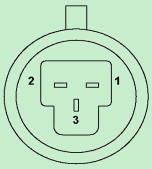
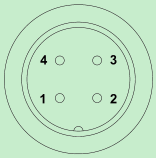
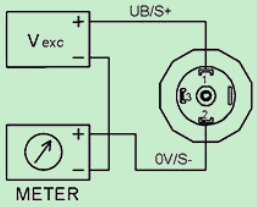
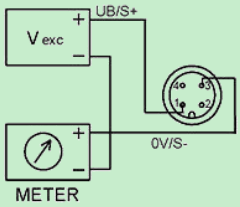
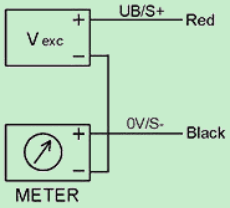
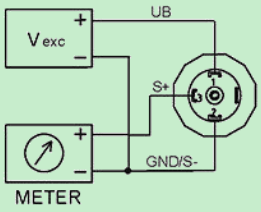
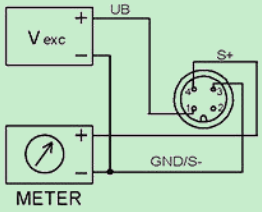
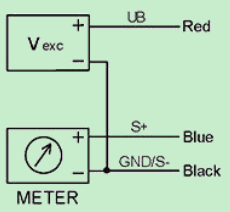
Electrical connector type

DIN43650A	DIN43650C	3-pin Packard	M12 × 1
			

Electrical connections for 4-20mA current output signal (2 wire)

DIN43650	M12 × 1	Cable outlet
Pin 1: + supply Pin 2: + output	Pin 1: + supply Pin 3: + output	Red: + supply Black: + output
		

Electrical connections for 0-10V, 0-5V, 0.5-4.5V voltage output signal (3 wire)

DIN43650	M12 × 1	Cable outlet
Pin 1: + supply Pin 2: GND Pin 3: + output	Pin 1: + supply Pin 3: GND Pin 4: + output	Red: + supply Black: GND Blue: + output
		

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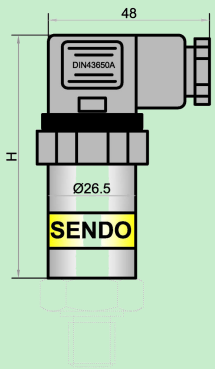
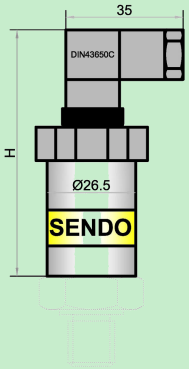
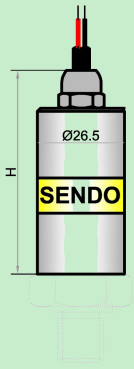
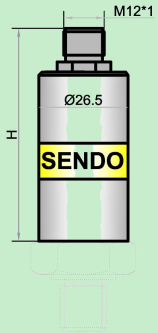
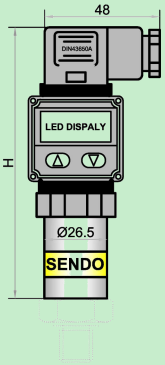
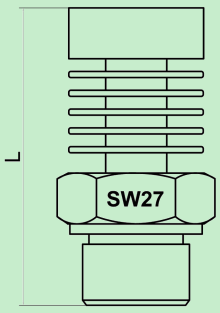
Dimensions for electrical connections and housing (Unit: mm)

DIN43650A	DIN43650C	Cable outlet
		
H = 74 mm	H = 74 mm	H = 64 mm

M12 × 1	LED Display	
		
H = 67 mm	H = 122 mm	

Dimensions for pressure connections (Unit: mm)

5pcs of cooling extensions	10pcs of cooling extensions	15pcs of cooling extensions
		
L = 61 mm		

Part number chart (How to order)

PART NUMBER REQUIRED: SS316.T05.PL.01.A.04.A.06 (EXAMPLE)

0	Medium working temperature	T05
	T05(150 °C) T10(200 °C) T15(250 °C) TZ(Other temperature is on request)	
1	Pressure range(bar)	PL
	NA(-1...0) NB(-0.7...0) NC(-0.5...0) ND(-0.35...0) NE(-0.2...0) NF(-0.1...0) PA(0...0.1) PB(0...0.2) PC(0...0.35) PD(0...0.5) PE(0...0.7) PF(0...1) PG(0...1.6) PH(0...2) PI(0...2.5) PJ(0...4) PK(0...6) PL(0...10) PM(0...16) PN(0...25) PO(0...40) PP(0...60) PQ(0...100) PR(0...160) PS(0...200) PT(0...250) PU(0...300) PV(0...350) PW(0...400) PX(0...500) PY(0...600) PZ(0...1000) CA(-1...0.6) CB(-1...1.5) CC(-1...3) CD(-1...5) CE(-1...9) CF(-1...15) CG(-1...24) 1Z(Other pressure range or unit is on request)	
2	Pressure type	01
	01(Gauge) 02(Absolute)	
3	Electrical connection	A
	A(DIN43650A) B(Cable Outlet) C(M12 × 1) D(LED Display) E(DIN43650C) F(Plug type)	
4	Pressure connection	04
	01(1/4” NPT male) 02(1/2” NPT male) 03(1/8” NPT male) 04(G 1/4” male) 05(G 1/2” male) 06(G 1/8” male) 07(PT 1/4” male) 08(PT 1/2” male) 09(PT 1/8” male) 10(9/16-18 UNF male) 11(7/16-20 UNF male) 12(1/2-20 UNF male) 13(3/8-24 UNF male) 14(M10 x 1.25 male) 15(M14 x 1.5 male) 16(M20 x 1.5 male) 4Z(Other pressure connection is on request)	
5	Signal & supply	A
	A(4-20mA & 9-30Vdc) B(0-10V & 12-30Vdc) C(0-5V & 9-30Vdc) D(0.5-4.5V & 9-30Vdc) E(0.5-4.5V & 5Vdc) F(0.5-4.5V & 5Vdc ratiometric)	
6	Cable length	06
	01(1m) 02(2m) 03(3m) 04(4m) 05(5m) 06(None) 6Z(Other length is on request)	

NON- REQUIRED: SS316.T03.PL.01.A.04.A.06 - V3C

1	Material of housing	V3C
	V3C(Stainless steel 316L)	
2	Material of diaphragm	V4E
	V4D(Titanium) V4E(Tantalum) V4F(Hastelloy-C)	
3	Material of wetted parts (metal parts, not include the diaphragm)	V5G
	V5G(Stainless steel 316L)	
4	Pulse snubber / Bumper (Anti cavitation, pressure spikes, or pulses)	V6H
	V6H(Assemble into the pressure hole)	

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*Specifications subject to change without notice, the latest date sheet please contact: sales@sendo-sensor.com

WARNING: DO NOT USE THIS PRODUCT AS SAFETY OR EMERGENCY STOP DEVICE OR IN ANY OTHER APPLICATION WHERE FAILURE OF THE PRODUCT COULD RESULT IN PERSONAL INJURY OR EVEN DEATH.