



Electronic Pressure Transmitter

HDA 4700

CSA Intrinsically safe
CSA Non Incendive



Description:

The pressure transmitter HDA 4700 in **CSA** version has been specially developed for the North American market for use in potentially explosive atmospheres and is based on the HDA 4000 series.

As with the industry model, the HDA 4700 in **CSA** version has a stainless steel measurement cell with thin-film strain gauge for measuring relative pressure in the high pressure range.

Intended areas of application are, for example, in the oil and gas industry, on gas turbines or in locations with high levels of dust, e.g. in mills.

Protection types and zones:

Intrinsically safe:

- Class I Div. 1 Group A, B, C, D T6 [C, US]
- Class I Zone 0 AEx ia IIC T6 [US]
- Ex ia IIC T6 [C]

- Class I, II, III Div. 1 Group A, B, C, D, E, F, G T6 [C, US]

Non incendive:

- Class I Div. 2 Group A, B, C, D T4A [C, US]
- Class I Zone 2 AEx nL IIC T4 [US]
- Class I Zone 2 Ex nL IIC T4 [C]

- Class I, II, III Div. 2 Group A, B, C, D, F, G T4A [C, US]
- Class I Zone 2 AEx nA II T4 [US]
- Class I Zone 2 Ex nA II T4 [C]

Special features:

- Accuracy $\leq \pm 0.25$ % FS typ.
- Certificate: CSA 1760344
- Output signal 4 .. 20 mA
- Very small temperature error
- Excellent EMC characteristics
- Excellent long-term properties

Technical specifications:

Input data	
Measuring ranges*	-1 .. 9; 16; 60; 100; 250; 400; 600 bar
Overload pressures	20; 32; 120; 200; 500; 800; 1000 bar
Burst pressure	200; 200; 300; 500; 1000; 2000; 2000 bar
Mechanical connection	G1/4 A DIN 3852; 9/16-18 UNF 2A; 1/4-18 NPT
Torque value	20 Nm; 20 Nm; 40 Nm
Parts in contact with medium	Sensor: Stainless steel Mech. connection: < 40 bar 1.4542; 316L ≥ 40 bar 316L; 1.4435; 1.4571; 1.4404
	Seal: FPM
Output data	
Output signal, permitted resistance	4 .. 20 mA, 2 conductor $R_{Lmax} = (U_B - 10 V) / 20 \text{ mA} [\text{k}\Omega]$
Accuracy to DIN 16086, Max. setting	$\leq \pm 0.25$ % FS typ. $\leq \pm 0.5$ % FS max.
Accuracy at min. setting (B.F.S.L.)	$\leq \pm 0.15$ % FS typ. $\leq \pm 0.25$ % FS max.
Temperature compensation Zero point	$\leq \pm 0.008$ % FS / °C typ. $\leq \pm 0.015$ % FS / °C max.
Temperature compensation Over range	$\leq \pm 0.008$ % FS / °C typ. $\leq \pm 0.015$ % FS / °C max.
Non-linearity at max. setting to DIN 16086	$\leq \pm 0.3$ % FS max.
Hysteresis	$\leq \pm 0.1$ % FS max.
Repeatability	$\leq \pm 0.05$ % FS
Rise time	≤ 1 ms
Long-term drift	$\leq \pm 0.1$ % FS typ. / year
Ambient conditions	
Compensated temperature range	Intrinsically safe: -20 .. +60 °C Non incendive: -20 .. +85 °C
Operating temperature range	Intrinsically safe: -20 .. +60 °C Non incendive: -20 .. +85 °C
Storage temperature range	-40 .. +100 °C
Fluid temperature range	Intrinsically safe: -20 .. +60 °C Non incendive: -20 .. +85 °C
CSA mark	Certificate No.: CSA 1760344
Vibration resistance to DIN EN 60068-2-6 at 10 .. 500 Hz	≤ 20 g
Protection class to DIN 40050 / NEMA (depending on the electr. connection)	Min. IP 65 Min. NEMA 4
Relevant data for Ex applications	
Supply voltage	12 .. 28 V DC
Max. supply current	100 mA
Max. supply capacity	up to 28 V: 1 W
Connection capacitance of the sensor	≤ 12 nF
Inductance of the sensor	0 H
Housing isolation voltage	125 V AC (500 V AC on request)
Other data	
Residual ripple of supply voltage	≤ 5 %
Life expectancy	> 10 million cycles 0 .. 100 % FS
Weight	approx. 150 g

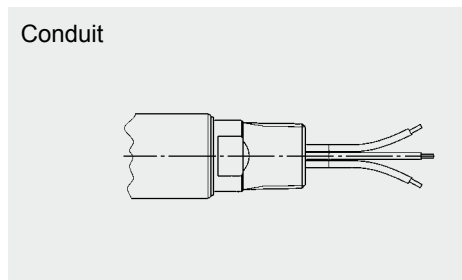
Note: Reverse polarity protection of the supply voltage, excess voltage, override, short circuit protection are provided.

FS (Full Scale) = relative to the complete measuring range

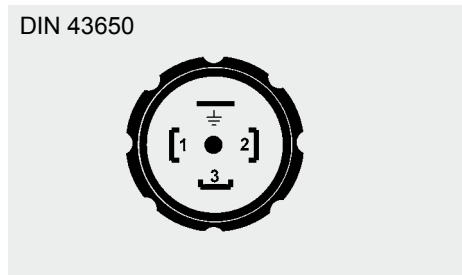
B.F.S.L. = Best Fit Straight Line

* psi pressure ranges on request

Pin connections:



Wire	HDA 47X9-A
green	Signal +
white	Signal -
green/ yellow	PE



Pin	HDA 47X5-A	HDA 47XA-A
1	Signal +	Signal +
2	Signal -	Signal -
3	n.c.	n.c.
⊥	PE	PE

Areas of application:

Group	1	2	3	4
Protection type	Intrinsically safe Gases and dusts	Intrinsically safe Gases	Non incensive (with field cabling) Gases	Non incensive Gases and dusts
Certificate	CSA 1760344			
Zones/ Categories	Intrinsically safe - Class I, II, III - Division 1 - Group A, B, C, D, E, F, G T6	Intrinsically safe Ex ia IIC T6 - Class I - Zone 0 - AEx ia IIC T6 - Class I - Division I - Group A, B, C, D T6	Non incensive - Class I - Division 2 - Group A, B, C, D T4A - Class I - Zone 2 - AEx nL IIC T4 - Class I - Zone 2 - Ex nL IIC T4	Non incensive - Class I, II, III - Division 2 - Group A, B, C, D, F, G T4A - Class I - Zone 2 - Ex nA II T4 - Class I - Zone 2 - AEx nA II T4
Electrical connection	9, A	5, 9, A	5, 9, A	9
Code Type code	A	B		C

Model code:

HDA 4 7 X X - A - XXXX C N X 000 - XXX

Mechanical connection*

- 4 = G1/4 A DIN 3852 (male)
- 7 = 9/16-18 UNF 2A, SAE 6 (male)
- 8 = 1/4-18 NPT (male)

Electrical connection

- 5 = 3 pole+ PE, DIN 43650
(connector supplied)
- 9 = conduit connection thread
(1/2-14 NPT, male)
- A = DIN 43650, 3 pole + PE
(1/2" conduit female thread)

Signal

- A = 4 .. 20 mA, 2 conductor

Pressure ranges in bar

0009 (-1..9); 0016; 0060; 0100; 0250; 0400; 0600

Approval

- C = CSA

Isolation voltage **

- N = 125 V AC (housing)

Protection types and zones (code)

- A = Group 1
- B = Group 2 and 3
- C = Group 4

Modification number ***

000 = Standard

Cable length in cm (only for electr. connection type 9)

Standard = 122 cm (48 inch)

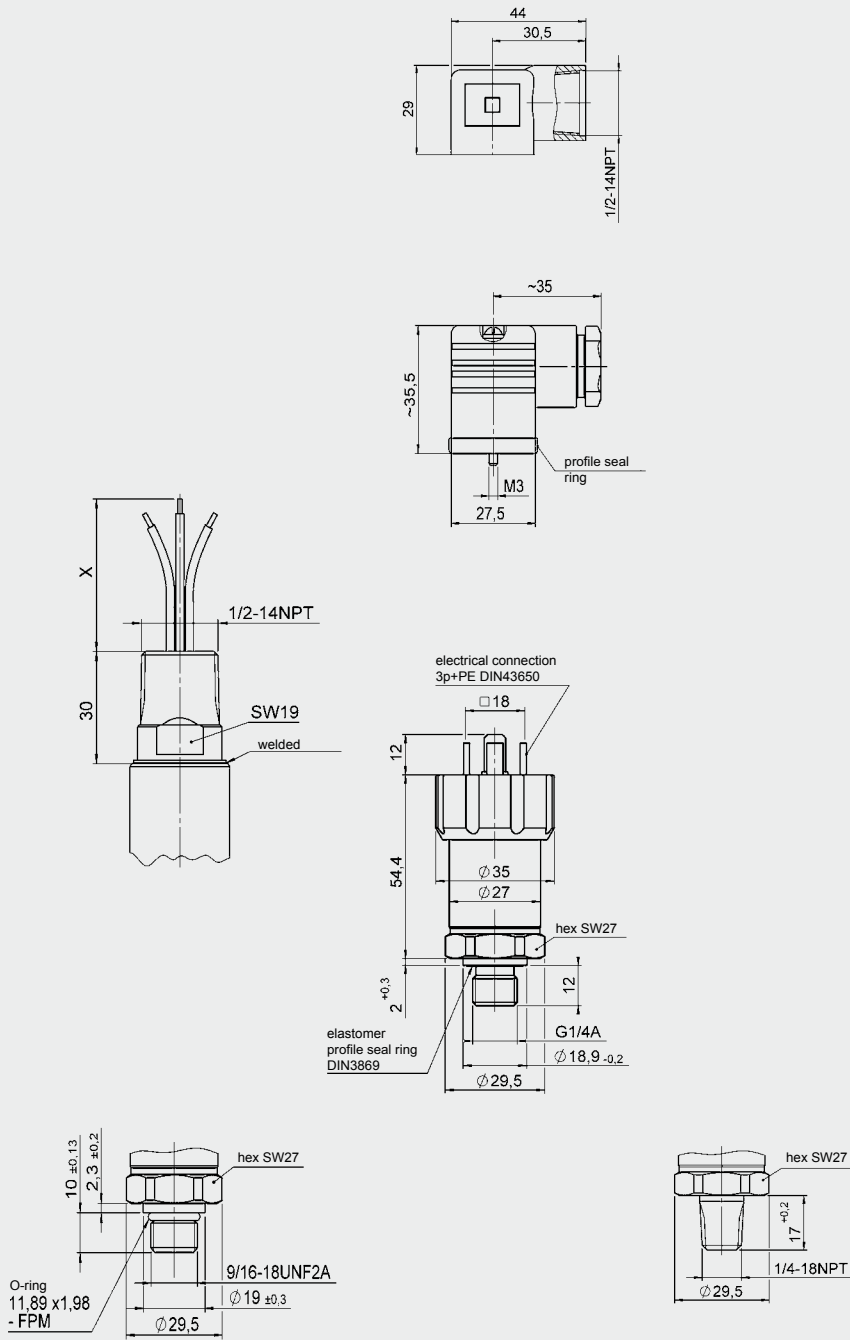
Notes:

- * Devices with different connections are available on request.
- ** Units with a housing isolation voltage of 500 V AC are available on request.
- *** On units with a different modification number, please read the label or the technical amendment details supplied with the unit.

Accessories:

Appropriate accessories, such as electrical connectors can be found in the Accessories section.

Dimensions:



Note:

The information in this brochure relates to the operating conditions and applications described.
For applications and operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.

