Electronic Pressure Transmitter

HDA 4400
CSA Intrinsically safe
CSA Non Incendive

C US

Description:

The pressure transmitter HDA 4400 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 4400 in **CSA** version has a stainless steel measurement cell with thin-film strain gauge.

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

Protection types and applications:

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 ≤ ± 0.5 % FS typ.
- Certificate: CSA 1760344
- Output signal 4 .. 20 mA
- Very small temperature error
- Excellent EMC characteristics
- Excellent durability

Technical data:

Input data	
Measuring ranges[1)]	16; 60; 100; 250; 400; 600; 1000 bar
Overload pressures	32; 120; 200; 500; 800; 900; 1600 bar
Burst pressures	200; 300; 500; 1000; 2000; 2000; 3000 bar
Mechanical connection[1)]	G1/2 A DIN 3852 G1/4 A DIN 3852
Torque value	45 Nm; 20 Nm
Parts in contact with medium[2)]	Stainless steel: 1.4542; 1.4571; 1.4435; 1.4404; 1.4301 Seal: FPM
Output data	
Output signal, permitted load resistance	4 .. 20 mA, 2 conductor $R_{Lmax} = (U_B - 12\ V) / 20\ mA\ [k\Omega]$
Accuracy to DIN 16086, Max. setting	≤ ± 0.5 % FS typ. ≤ ± 1 % FS max.
Accuracy at min. setting (B.F.S.L.)	≤ ± 0.25 % FS typ. ≤ ± 0.5 % FS max.
Temperature compensation Zero point	≤ ± 0.015 % FS / °C typ. ≤ ± 0.025 % FS / °C max.
Temperature compensation Over range	≤ ± 0.015 % FS / °C typ. ≤ ± 0.025 % FS / °C max.
Non-linearity at max. setting to DIN 16086	≤ ± 0.3 % FS max.
Hysteresis	≤ ± 0.4 % FS max.
Repeatability	≤ ± 0.1 % FS
Rise time	≤ 1.5 ms
Long-term drift	≤ ± 0.3 % FS typ. / year
Environmental 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[3)]	Intrinsically safe: -40 .. +60 °C / -20 .. +60 °C Non incendive: -40 .. +85 °C / -20 .. +85 °C
mark	Certificate No.: CSA 1760344
Vibration resistance to DIN EN 60068-2-6 at 10 .. 500 Hz	≤ 20 g
Protection class to IEC 60529 / NEMA (depending on the electr. connection)	Min. IP 65 Min. NEMA 4
Relevant data for Ex applications	
Supply voltage	12 .. 28 V DC
Max. input current	100 mA
Max. input power	up to 28 V: 1 W
Connection capacitance of the sensor	≤ 22 nF
Inductance of the sensor	0 mH
Insulation voltage [4)]	50 V AC, with integrated overvoltage protection EN 61000-6-2
Other data	
Residual ripple of supply voltage	≤ 5 %
Life expectancy	> 10 million cycles 0 .. 100 % FS
Weight	~ 150 g

Note: Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection are provided.
FS (**F**ull **S**cale) = relative to complete measuring range, **B.F.S.L.**= **B**est **F**it **S**traight **L**ine
[1)] 1000 bar only with mechanical connection G ½ DIN 3852 and vice versa
[2)] Other seal materials available on request
[3)] -20 °C with FPM seal, -40 °C on request
[4)] 500 V AC on request

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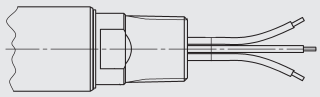
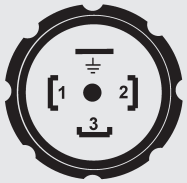
Pin connections:

Conduit (single cores)



Core	HDA 44X9-A
green	Signal +
white	Signal -
green-yellow	Housing

EN175301-803 (DIN 43650)



Pin	HDA 44X5-A	HDA 44XA-A
1	Signal +	Signal +
2	Signal -	Signal -
3	n.c.	n.c.
⊥	Housing	Housing

Areas of application:

Group	1	2	3	4
Protection Type	Intrinsically safe Gases and dusts	Intrinsically safe Gases	Non incendive (with field cabling) Gases	Non incendive 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 incendive - 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 incendive - 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 IP 6x
Electrical Connection	9, A	5, 9, A	5, 9, A	9
Code for Model Code	A	B		C

Model code:

HDA 4 4 X X – A – XXXX – C N X – 000 (2m)

Mechanical connection
2 = G1/2 DIN 3852
(only for pressure range "1000 bar")
4 = G1/4 A DIN 3852 (male)

Electrical connection
5 = Male, 3 pole + PE,
EN175301-803 (DIN 43650)
(connector supplied)
9 = Conduit connection thread
(1/2-14 NPT, male)
A = Male, EN175301-803
(DIN 43650), 3 pole + PE
(1/2" conduit female thread)

Signal
A = 4 .. 20 mA, 2 conductor

Pressure ranges in bar
0016; 0060; 0100; 0250; 0400; 0600
1000 (only in conjunction with mechanical connection code "2")

Approval
C = CSA

Insulation voltage
N = 50 V AC

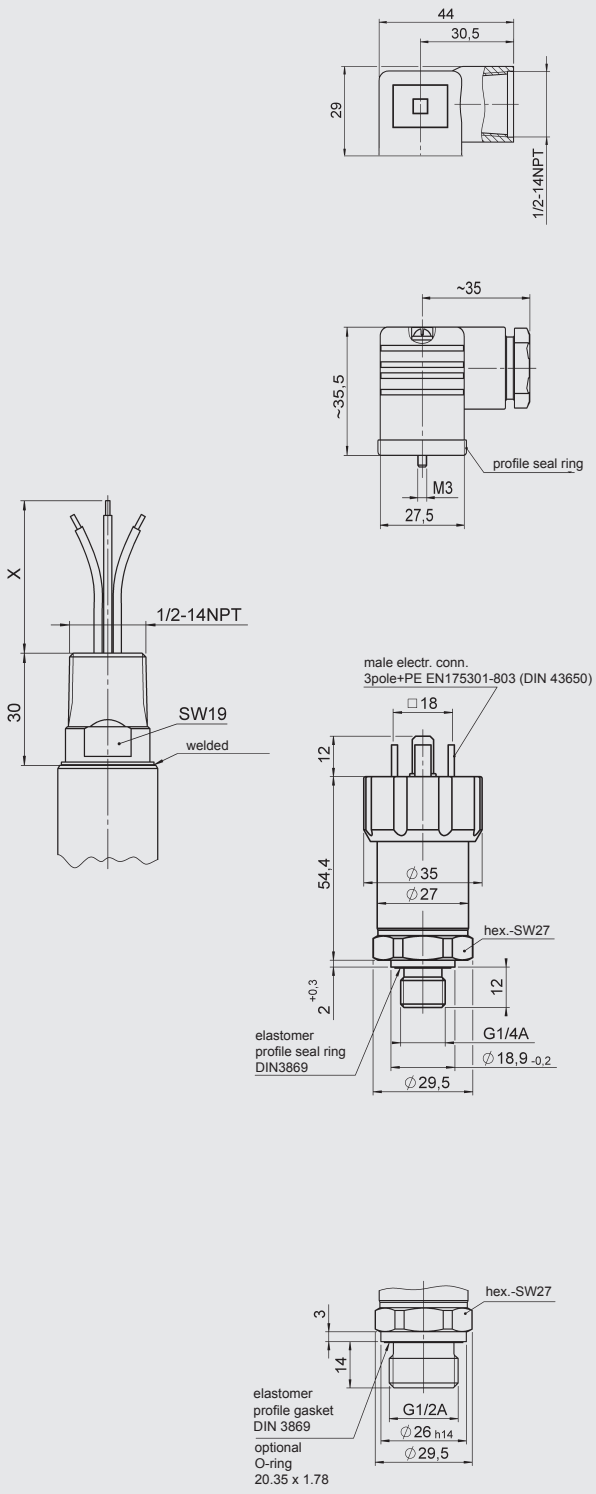
Protection types and applications (code)
A = Group 1
B = Group 2 and 3
C = Group 4

Modification number
000 = Standard

Cable length in m (only for electr. connection code 9)
Standard = 2 m

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

Dimensions:



Note:

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

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