



## Electronic Pressure Transmitter

HDA 4100  
 CSA Intrinsically safe  
 CSA Non Incendive



### Description:

The pressure transmitter HDA 4100 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 4100 in CSA version has a ceramic measurement cell with thick-film strain gauge for measuring absolute pressure in the low 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  $\leq \pm 0.5\%$  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; 2.5 bar
Overload pressures	3; 8 bar
Burst pressure	5; 12 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: Ceramic Al2O3 Mech. connection: 1.4571 (1.4462) Seal: FPM / EPDM
Output data	
Output signal, permitted resistance	4 .. 20 mA, 2 conductor $R_{Lmax} = (U_B - 10 V) / 20 \text{ mA} [k\Omega]$
Accuracy to DIN 16086, Max. setting	$\leq \pm 0.5\%$ FS typ. $\leq \pm 1.0\%$ FS max.
Accuracy at min. setting (B.F.S.L.)	$\leq \pm 0.25\%$ FS typ. $\leq \pm 0.5\%$ FS max.
Temperature compensation Zero point	$\leq \pm 0.02\%$ FS / °C typ. $\leq \pm 0.03\%$ FS / °C max.
Temperature compensation Over range	$\leq \pm 0.02\%$ FS / °C typ. $\leq \pm 0.03\%$ FS / °C max.
Non-linearity at max. setting to DIN 16086	$\leq \pm 0.5\%$ FS max.
Hysteresis	$\leq \pm 0.25\%$ FS max.
Repeatability	$\leq \pm 0.1\%$ FS
Rise time	$\leq 1 \text{ ms}$
Long-term drift	$\leq \pm 0.3\%$ 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
mark	Certificate No.: CSA 1760344
Vibration resistance to DIN EN 60068-2-6 at 10 .. 500 Hz	$\leq 20 \text{ g}$
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	$\leq 12 \text{ nF}$
Inductance of the sensor	0 H
Housing isolation voltage	125 V AC (500 V AC on request)
Other data	
Residual ripple of supply voltage	$\leq 5\%$
Life expectancy	> 10 million cycles 0 .. 100 % FS
Weight	approx. 180 g

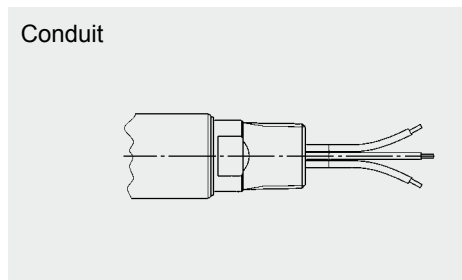
Note: Reverse polarity protection of the supply voltage, excess voltage, override, short circuit protection are provided.

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

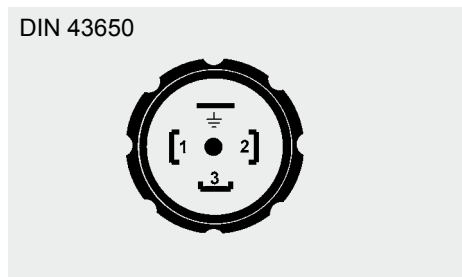
B.F.S.L. = Best Fit Straight Line

\* psi pressure ranges on request

## Pin connections:



Wire	HDA 41X9-A
green	Signal +
white	Signal -
green/ yellow	PE



Pin	HDA 41X5-A	HDA 41XA-A
1	Signal +	Signal +
2	Signal -	Signal -
3	n.c.	n.c.
⊥	PE	PE

## Areas of application:

Group	1	2	3	4
<b>Protection type</b>	Intrinsically safe Gases and dusts	Intrinsically safe Gases	Non incandive (with field cabling) Gases	Non incandive Gases and dusts
<b>Certificate</b>	CSA 1760344			
<b>Zones/ Categories</b>	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 incandive - 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 incandive - 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
<b>Electrical connection</b>	9, A	5, 9, A	5, 9, A	9
<b>Code Type code</b>	A	B		C

## Model code:

**HDA 4 1 X X - A - XXXX C N X 000 - X 1 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

- 01.0; 02.5

### 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

### Seal material (in contact with fluid)

- F = FPM seal (e.g.: for hydraulic oils)
- E = EPDM seal (e.g.: for refrigerants)

### Material of connection (in contact with fluid)

- 1 = stainless steel

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

- Standard = 122 cm (48 inch)

### Notes:

- \* Devices with other 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.



