Pressure Transmitter
HDA 4700 Ex applications

Relative pressure | **Accuracy 0.25 %**

Intrinsically Safe
Non-Incendive
CSA approval

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 very accurate and robust sensor cell with a thin-film strain gauge on a stainless steel membrane.

Intended fields of application are, for example, the oil and gas industry, on gas turbines or in locations with high levels of dust contamination, 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]

Technical data:

Input data										
Measuring ranges [1]	bar	6	16	40	60	100	250	400	600	1000
Overload pressures	bar	15	32	80	120	200	500	800	1000	1600
Burst pressure	bar	100	200	200	300	500	1000	2000	2000	3000
Mechanical connection		G1/4 A ISO 1179-2								
Tightening torque, recommended		20 Nm								
Parts in contact with fluid		Stainless steel: 1.4542; 1.4571; 1.4548; 1.4435; 1.4404; 1.4301 Seal: FKM								
Output data										
Output signal, permitted load resistance		4 .. 20 mA, 2-conductor $R_{Lmax} = (U_B - 12\ V) / 20\ mA\ [k\Omega]$								
Accuracy acc. to DIN 16086, terminal based		≤ ± 0.25 % FS typ. ≤ ± 0.5 % FS max.								
Accuracy, B.F.S.L.		≤ ± 0.15 % FS typ. ≤ ± 0.25 % FS max.								
Temperature compensation Zero point		≤ ± 0.008 % FS / °C typ. ≤ ± 0.015 % FS / °C max.								
Temperature compensation Span		≤ ± 0.008 % FS / °C typ. ≤ ± 0.015 % FS / °C max.								
Non-linearity acc. to DIN 16086, terminal based		≤ ± 0.3 % FS max.								
Hysteresis		≤ ± 0.1 % FS max.								
Repeatability		≤ ± 0.05 % FS								
Rise time		≤ 1.5 ms								
Long-term drift		≤ ± 0.1 % FS typ. / year								
Environmental conditions										
Compensated temperature range		-25 .. +85 °C								
Operating/ambient temperature range [2]		Intrinsically safe: T_a = -40 .. +60 °C / -20 .. +60 °C Non-incendive: T_a = -40 .. +85 °C / -20 .. +85 °C								
Storage temperature range		-40 .. +100 °C								
Fluid temperature range [2]		Intrinsically safe: T_a = -40 .. +60 °C / -20 .. +60 °C Non-incendive: T_a = -40 .. +85 °C / -20 .. +85 °C								
Vibration resistance acc. to DIN EN 60068-2-6 at 10 .. 500 Hz		≤ 10 g (1/2-14 NPT Conduit) ≤ 20 g (male connector)								
Protection class acc. to DIN EN 60529 / NEMA[3] ISO 20653		IP 65, NEMA 4 (male connector) IP6K9K (1/2-14 NPT Conduit)								
Relevant data for Ex applications										
Supply voltage		12 .. 28 V DC								
Max. input current		Ii = 100 mA								
Max. input power		up to 28 V: Pi = 1 W								
Connection capacitance of the sensor		Ci ≤ 22 nF								
Inductance of the sensor		Li = 0 mH								
Insulation voltage [4]		50 V AC, with integrated overvoltage protection acc. to EN 61000-6-2								
Other data										
Residual ripple of supply voltage		≤ 5 %								
Current consumption		≤ 25 mA								
Life expectancy[5]		> 10 million cycles, 0 .. 100 % FS								
Weight		~ 150 g; ~ 300 g (1/2-14 NPT Conduit)								

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] psi measuring ranges on request
[2] -20 °C with FKM seal, -40 °C on request
[3] With mounted mating connector in corresponding protection class
[4] 500 V AC on request
[5] Measuring range 1000 bar: > 1 million cycles (0 .. 100 % FS)

Fields of application:

Group	1	2	3	4
Protection type	Intrinsically safe Gases and dusts	Intrinsically safe Gases	Non-incendive (with field wiring) Gases	Non-incendive Gases and dusts
Certificate	CSA 1760344			
Application fields	Intrinsically safe - Class I, II, III Division 1 Group A, B, C, D, E, F, G T6	Intrinsically safe - Class I Division 1 Group A, B, C, D T6 - Class I Zone 0 AEx ia IIC T6 - Ex ia IIC 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	5, 9, A	5, 9, A	9
Code for model code	A	B		C

Model code:

HDA 4 7 4 X – A – XXXX – C N X – 000 (2m)

Mechanical connection
4 = G1/4 A ISO 1179-2

Electrical connection
5 = male EN175301-803
3 pole + PE
(IP67 mating connector supplied)
9 = 1/2-14 NPT Conduit (male thread),
single leads
A = male EN175301-803
3 pole + PE
(1/2" Conduit female thread)

Output signal
A = 4 .. 20 mA, 2-conductor

Measuring ranges in bar
0006, 0016; 0040; 0060; 0100; 0250; 0400; 0600; 1000

Approval
C = CSA

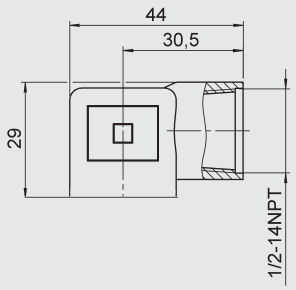
Isolation voltage
N = 50 V AC to housing

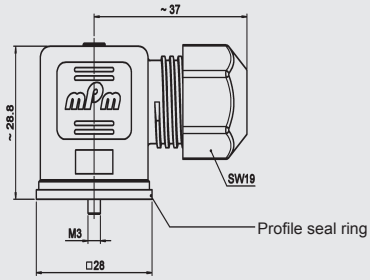
Protection types and applications (code)
A = Group 1
B = Group 2 and 3
C = Group 4

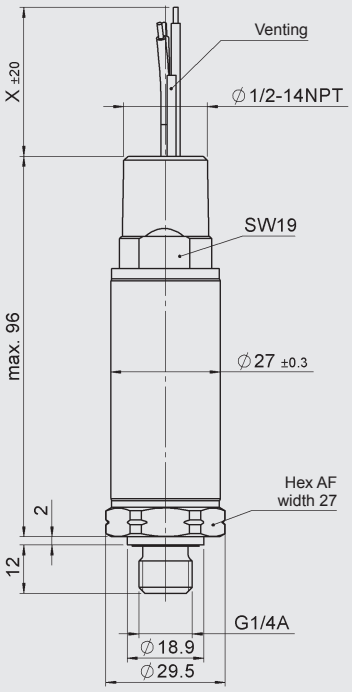
Modification number
000 = standard

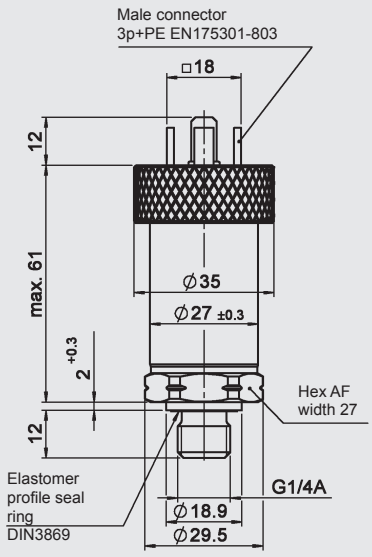
Cable length in m (only for electr. connection code "9")
Standard = 2 m

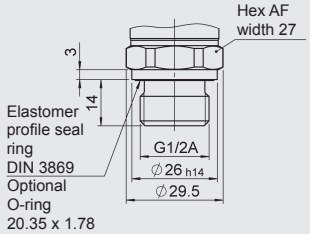
Dimensions:





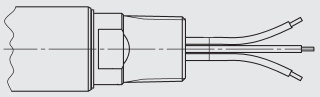






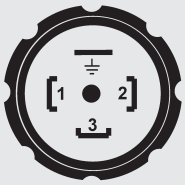
Pin connections:

Conduit (single leads)



Lead	HDA 47X9-A
green	Signal +
white	Signal -
green-yellow	Housing

EN175301-803



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

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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