

## HYDAC INTERNATIONAL

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### Pressure Transmitter HDA 4700 Ex applications

Relative pressure Accuracy 0.25 %

Intrinsically Safe  
IECEx approval



#### Description:

The pressure transmitter HDA 4700 IECEx intrinsically safe version has been especially developed for use in potentially explosive atmospheres and is based on the HDA 4000 series.

As with the industry model of the HDA 4700, devices with IECEx intrinsically safe approval have a proven, fully welded sensor cell with a thin-film strain gauge on a stainless steel membrane without internal seal.

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

#### Protection types and applications:

Ex ia I Ma  
Ex ia IIC T6 Ga  
Ex ia IIC T6 Ga/Gb  
Ex ia IIC T6 Gb

#### Technical data:

##### Input data

Measuring ranges <sup>1)</sup>	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 1.4542; 1.4571; 1.4435; 1.4404; steel: 1.4301; 1.4548 Seal: FKM									

##### Output data

Output signal, permitted load resistance	4 .. 20 mA, 2-conductor $R_{Lmax} = (U_B - 12 \text{ V}) / 20 \text{ mA} [\text{k}\Omega]$
Accuracy acc. to DIN 16086, terminal based	$\leq \pm 0.25 \% \text{ FS typ.}$ $\leq \pm 0.5 \% \text{ FS max.}$
Accuracy, B.F.S.L.	$\leq \pm 0.15 \% \text{ FS typ.}$ $\leq \pm 0.3 \% \text{ FS max.}$
Temperature compensation	$\leq \pm 0.008 \% \text{ FS} / ^\circ\text{C typ.}$
Zero point	$\leq \pm 0.015 \% \text{ FS} / ^\circ\text{C max.}$
Temperature compensation	$\leq \pm 0.008 \% \text{ FS} / ^\circ\text{C typ.}$
Span	$\leq \pm 0.015 \% \text{ FS} / ^\circ\text{C max.}$
Non-linearity acc. to DIN 16086, terminal based	$\leq \pm 0.3 \% \text{ FS max.}$
Hysteresis	$\leq \pm 0.1 \% \text{ FS max.}$
Repeatability	$\leq \pm 0.05 \% \text{ FS}$
Rise time	$\leq 1.5 \text{ ms}$
Long-term drift	$\leq \pm 0.1 \% \text{ FS typ.} / \text{year}$

##### Environmental conditions

Compensated temperature range	-25 .. +85 °C
Operating/ambient temperature range <sup>1)2)</sup>	$T_a = -40 .. +60 ^\circ\text{C} / -20 .. +60 ^\circ\text{C}$
Storage temperature range	-40 .. +100 °C
Fluid temperature range <sup>1)2)</sup>	$T_a = -40 .. +60 ^\circ\text{C} / -20 .. +60 ^\circ\text{C}$
Vibration resistance acc. to DIN EN 60068-2-6 at 10 .. 500 Hz	$\leq 20 \text{ g}$
Protection class acc. to DIN EN 60529 <sup>3)</sup>	IP 67

##### Relevant data for Ex applications

Supply voltage	12 .. 28 V DC
Max. input current	$I_i = 100 \text{ mA}$
Max. input power	$P_i = 1 \text{ W}$
Connection capacitance of the sensor	$C_i \leq 22 \text{ nF}$
Inductance of the sensor	$L_i = 0 \text{ mH}$
Insulation voltage <sup>4)</sup>	50 V AC, with integrated overvoltage protection acc. to EN 61000-6-2

##### Other data

Residual ripple of supply voltage	$\leq 5 \%$
Current consumption	$\leq 25 \text{ mA}$
Life expectancy <sup>5)</sup>	> 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 (Full Scale) = relative to complete measuring range

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

<sup>1)</sup> -20 °C with FKM seal, -40 °C on request

<sup>2)</sup> With M12x1 male connector, only up to -25 °C

<sup>3)</sup> With mounted mating connector in corresponding protection class

<sup>4)</sup> 500 V AC on request

<sup>5)</sup> Measuring range 1000 bar: > 1 million cycles (0 .. 100 % FS)

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## Fields of application:

<b>Certificate</b>	IECEX TSA 09.0041X		
<b>Protection types</b>	Ex ia I Ma	Ex ia IIC T6 Ga Ex ia IIC T6 Ga/Gb	Ex ia IIC T6 Gb
	Mining	Gases	Gases
	Protection type: intrinsically safe ia with barrier	Protection type: intrinsically safe ia with barrier	Protection type: intrinsically safe ia with barrier

## Model code:

HDA 4 7 4 X - A - XXXX - I N 1 - 000

### Mechanical connection

4 = G1/4 A ISO 1179-2

### Electrical connection

5 = male, EN175301-803, 3 pole + PE (IP 67 mating connector supplied)

6 = male M12x1, 4 pole (mating connector not supplied)

### Output signal

A = 4 .. 20 mA, 2-conductor

### Measuring ranges in bar

0006; 0016; 0040; 0060; 0100; 0250; 0400; 0600; 1000

### Approval

I = IECEX Australia

### Insulation voltage

N = 50 V AC to housing

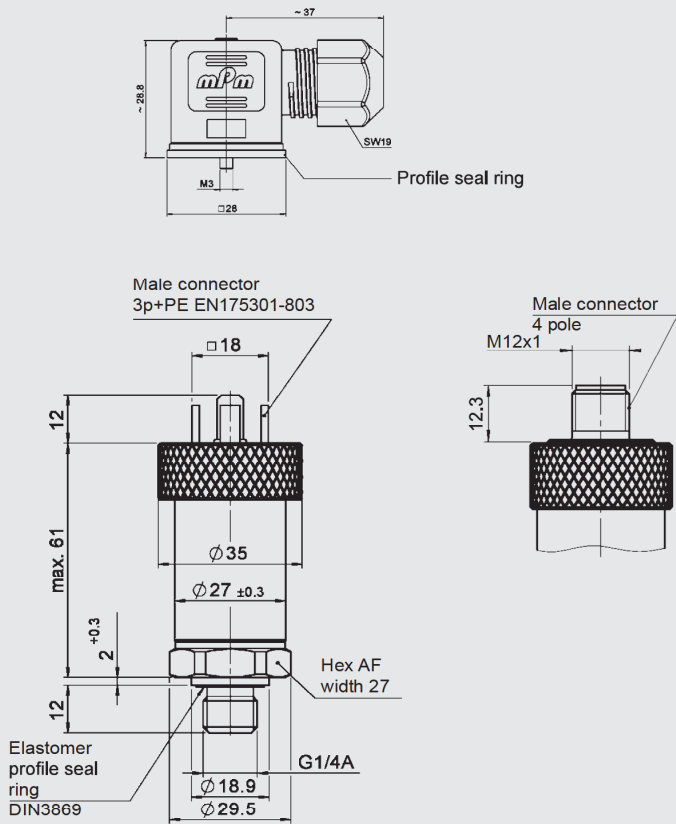
### Protection types and applications (code)

1 = Ex ia I Ma  
Ex ia IIC T6 Ga  
Ex ia IIC T6 Ga/Gb  
Ex ia IIC T6 Gb

### Modification number

000 = standard

Dimensions:



EN175301-803



Pin	HDA 4745-A
1	Signal +
2	Signal -
3	n.c.
L	Housing

M12x1



Pin	HDA 4746-A
1	Signal +
2	n.c.
3	Signal -
4	n.c.

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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