Pressure Transmitter
HDA 4400 Ex applications

Relative pressure | **Accuracy 0.5 %**

Intrinsically Safe, Dustproof enclosure
Non-Sparking
ATEX, IECEx, double approval
For the medium hydrogen

Description:

This intrinsically safe version of the pressure transmitter HDA 4400 has been specially developed for the use in hydrogen applications and potentially explosive atmospheres and it is based on the HDA 4000 series. The dual approval in accordance with ATEX and IECEx enables universal, almost world-wide utilisation of the devices in potentially explosive atmospheres.

As with the industry model, the HDA 4400 has a pressure measurement cell with thin-film strain gauge on a stainless steel membrane.

The main fields of application are hydrogen fuelling stations.

Due to the specially selected material, this HDA 4400 is suited for the use in hydrogen applications.

Protection types and applications:

ATEX

I M1	Ex ia	I	Ma
II 1G	Ex ia	IIC	T6 Ga
II 1/2G	Ex ia	IIC	T6 Ga/Gb
II 2G	Ex ia	IIC	T6 Gb
II 1D	Ex ia	IIIC	T85 °C Da

IECEx

Ex ia	I	Ma
Ex ia	IIC	T6 Ga
Ex ia	IIC	T6 Ga/Gb
Ex ia	IIC	T6 Gb
Ex ia	IIIC	T85 °C Da

Technical data:

Input data										
Measuring range	bar	16	25	40	200	250	400	500	600	1050
Overload pressures	bar	50	50	80	500	500	800	1000	1000	1400
Burst pressure	bar	125	125	200	1250	1250	2000	3000	3000	3000
Mechanical connection		SF250CX20, autoclave (7/16-20 UNF 2B)								
(Tightening torque, recommended)		(15 Nm for measuring range < 1000 bar) (20 Nm for measuring range 1050 bar)								
		G 1/4 B DIN EN 837								
		(20 Nm for measuring range < 1000 bar) (40 Nm for measuring range 1050 bar)								
Parts in contact with fluid		Stainless steel 1.4435 (Ni content ≥ 13 %) Seal: Copper (Cu-DHP) (G 1/4 B)								
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		≤ ± 0.5 % FS typ. ≤ ± 1 % FS max.								
Accuracy, 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 Span		≤ ± 0.015 % FS / °C typ. ≤ ± 0.025 % FS / °C max.								
Non-linearity acc. to DIN 16086, terminal based		≤ ± 0.3 % FS max.								
Hysteresis		≤ ± 0.4 % FS max.								
Repeatability		≤ ± 0.1 % FS								
Rise time		≤ 2 ms								
Long-term drift		≤ ± 0.3 % FS typ. / year								
Environmental conditions										
Compensated temperature range		-25 .. +85 °C								
Operating/ambient temperature range		Ta = -25 .. +60 °C								
Storage temperature range		-40 .. +100 °C								
Fluid temperature range		Ta = -25 .. +60 °C								
CE mark		EN 61000-6-1 / 2 / 3 / 4 EN 60079-0 / 11 / 26 EN 50303								
Vibration resistance acc. to DIN EN 60068-2-6 at 10 .. 500 Hz		≤ 20 g								
Protection class acc. to DIN EN 60529 [1]		IP 67								
Relevant data for Ex applications		**Ex ia**								
Supply voltage		12 .. 28 V DC								
Max. input current		Ii = 100 mA								
Max. input power		Pi = 1 W								
Connection capacitance of the sensor		Ci ≤ 22 nF								
Inductance of the sensor		Li = 0 mH								
Insulation voltage		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		> 1 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] With mounted mating connector in corresponding protection class

Fields of application:

Code no. for use in model code	1		
ATEX KEMA 05 ATEX 1016X	I M1 Ex ia I Ma	II 1G Ex ia IIC T6 Ga II 1/2G Ex ia IIC T6 Ga/Gb II 1D Ex ia IIIC T85 °C Da	II 2G Ex ia IIC T6 Gb
IECEx KEM 08.0014X	Ex ia I Ma	Ex ia IIC T6 Ga Ex ia IIC T6 Ga/Gb Ex ia IIIC T85 °C Da	Ex ia IIC T6 Gb
Application fields	Mining Protection type: intrinsically safe ia with barrier	Gases/conductive dust Protection type: intrinsically safe ia with barrier	Gases Protection type: intrinsically safe ia with barrier

Model code:

HDA 4 4 X 6 – A – XXXX – E N 1 – H00

Mechanical connection
C = SF250CX20, autoclave (7/16-20 UNF 2B)
G = G1/4 B DIN EN 837

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

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

Measuring ranges in bar
0016; 0025; 0040; 0200; 0250; 0400; 0500; 0600; 1050

Approval
E = ATEX / IECEx

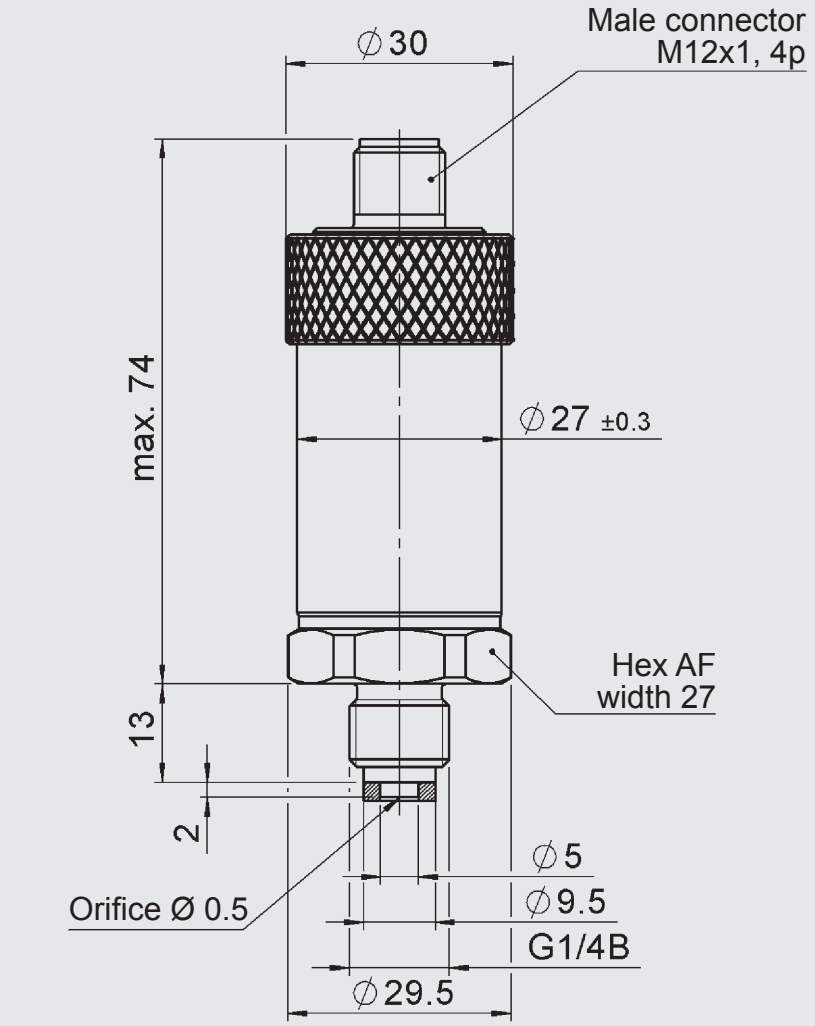
Insulation voltage
N = 50 V AC to housing

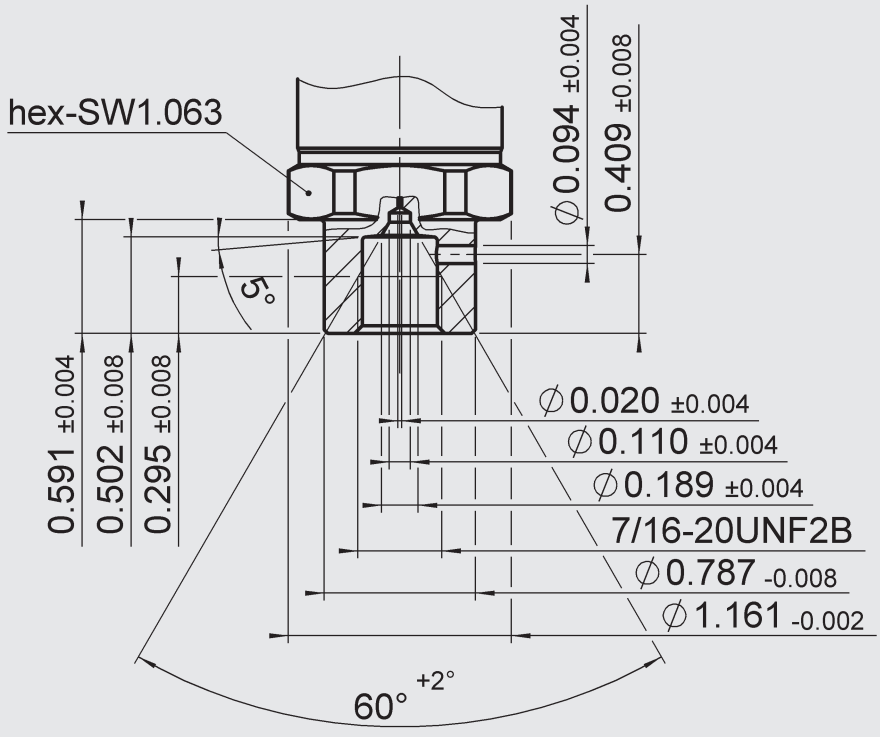
Protection types and applications (code)

	ATEX	IECEx
1 =	I M1 Ex ia I Ma	Ex ia I Ma
	II 1G Ex ia IIC T6 Ga	Ex ia IIC T6 Ga
	II 1/2 G Ex ia IIC T6 Ga/Gb	Ex ia IIC T6 Ga/Gb
	II 2 G Ex ia IIC T6 Gb	Ex ia IIC T6 Gb
	II 1D Ex ia IIIC T85 °C Da	Ex ia IIIC T85 °C Da

Modification number
H00 = standard

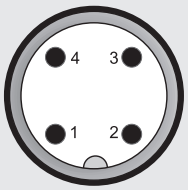
Dimensions:





Pin connections:

M12x1



Pin	HDA 44X6-A
1	+ Sig
2	n.c.
3	- Sig
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.

HYDAC ELECTRONIC GMBH
Hauptstr. 27, 66128 Saarbrücken
Germany
Telephone +49 (0)6897 509-01
Fax +49 (0)6897 509-1726
e-mail: electronic@hydac.com
Internet: www.hydac.com