HYDAC INTERNATIONAL

Pressure Transmitter
HDA 4700 Ex applications

Relative pressure | **Accuracy 0.25 %**

Flameproof enclosure
ATEX, IECEx, CSA, triple approval

Description:

The HDA 4700 electronic pressure transmitter series with flameproof enclosure has triple approval acc. to ATEX, CSA and IECEx which ensures the instrument is universally suitable for use in potentially explosive atmospheres around the world.

Each instrument is certified by the three approvals organizations and is labelled acc. ly. Therefore there is no longer any need to stock multiple devices with separate individual approvals.

As with the industry model of the HDA 4700, those with triple approval have a proven, fully welded sensor cell with a thin-film strain gauge on a stainless stell membrane without internal seal.

The main fields of application are in mining and the oil & gas industry, e.g. in underground vehicles, hydraulic power units, blow-out preventers (BOPs), drill drives or valve actuation stations as well as in areas with high levels of dust contamination.

Protection types and applications:

$_{c}$CSA$_{US}$ Explosionproof - Seal not required
Class I Group A, B, C, D, T6, T5
Class II Group E, F, G
Class III
Type 4

ATEX Flameproof
I M2 Ex d I Mb
II 2G Ex d IIC T6, T5 Gb
II 2D Ex tb IIIC T110 .. 130 °C Db

IECEx Flameproof
Ex d I Mb
Ex d IIC T6, T5 Gb
Ex tb IIIC T110 .. 130 °C Db

Technical data:

Input data												
Measuring ranges	bar	6	16	40	60	100	250	400	600	1000	1600	2000
Overload pressures	bar	15	32	80	120	200	500	800	1000	1600	2400	3000
Burst pressure	bar	100	200	200	300	500	1000	2000	2000	3000	3000	4000
Mechanical connection		G1/4 A ISO 1179-2 G1/2 B DIN EN 837										
Tightening torque, recommended		20 Nm (G 1/4); 45 Nm (G 1/2)										
Parts in contact with fluid		Stainless steel: 1.4542; 1.4571; 1.4435; 1.4404; 1.4301; 1.4548 Seal: FKM										
Conduit, housing material		1.4435; 1.4404										
Output data												
Output signal, permitted load resistance		4 .. 20 mA, 2-conductor $R_{Lmax} = (U_B - 8\ V) / 20\ mA\ [k\Omega]$										
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)3)]		T6, T110 °C T_a = -40 .. +60 °C / -20 .. +60 °C T5: T_a = -40 .. +80 °C / -20 .. +80 °C										
Storage temperature range		-40 .. +100 °C										
Fluid temperature range [2)3)]		T6, T110 °C T_a = -40 .. +60 °C / -20 .. +60 °C T5: T_a = -40 .. +80 °C / -20 .. +80 °C										
CE mark		EN 61000-6-1 / 2 / 3 / 4 EN 60079-0 / 1 / 31										
Vibration resistance acc. to DIN EN 60068-2-6 at 10 .. 500 Hz		≤ 10 g										
Protection class acc. to DIN EN 60529 ISO 20653		IP 65 (Vented Gauge), IP 69 (Sealed Gauge) IP 6K9K (Sealed Gauge)										
Other data												
Supply voltage		8 .. 30 V DC										
Residual ripple of supply voltage		≤ 5 %										
Current consumption		≤ 25 mA										
Life expectancy [4)]		> 10 million cycles 0 .. 100 % FS										
Weight		~ 300 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) Other output signals on request
2) T130 °C with Ta = -40 .. +80 °C/ -20 .. +80 °C with electr. connection single lead possible
3) -20 °C with FKM seal, -40 °C on request
4) Measuring ranges ≥ 1000 bar: > 1 million cycles (0 .. 100 % FS)

EN 18.385.2/02.18

Fields of application:

	Single leads Electrical connection "9"	Jacketed cable Electrical connection "G"
CSA	Explosionproof (seal not required)	
ATEX	Flameproof	
IECEx	Flameproof	
$_cCSA_{US}$	Class I Group A, B, C, D, T6, T5 Class II Group E, F, G Class III Type 4	
ATEX	I M2 Ex d I Mb II 2G Ex d IIC T6, T5 Gb	
	II 2D Ex tb IIIC T110 .. 130 °C Db	II 2D Ex tb IIIC T110 °C Db
IECEx	Ex d I Mb Ex d IIC T6, T5 Gb	
	Ex tb IIIC T110 .. 130 °C Db	Ex tb IIIC T110 °C Db

Model code:

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

Mechanical connection
1 = G1/2 B DIN EN 837
(only for measuring ranges ≥ 1600 bar)
4 = G1/4 A ISO 1179-2

Electrical connection
9 = 1/2-14 NPT Conduit (male thread), single leads

G = 1/2-14 NPT Conduit (male thread), jacketed cable

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

Measuring ranges in bar
0006; 0016; 0040; 0060; 0100; 0250; 0400; 0600; 1000
(only with mechanical connection code "4")
1600; 2000
(only with mechanical connection code "1")

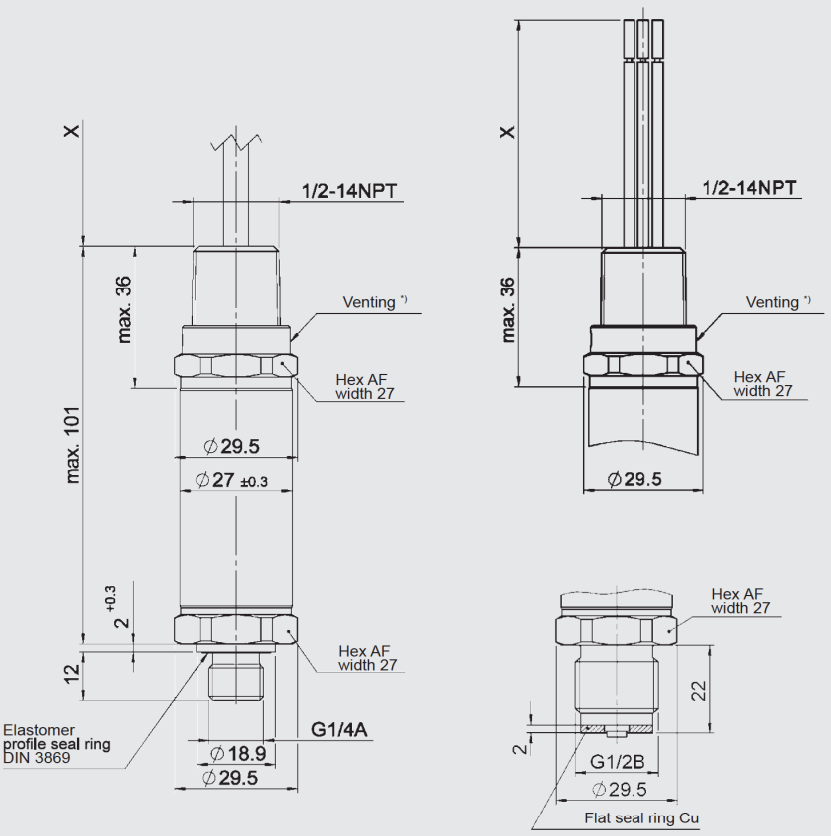
Approval
D = CSA Explosionproof - Seal not required
ATEX Flameproof
IECEx Flameproof

Type of measurement cell
S = Sealed Gauge (sealed to atmosphere) ≥ 40 bar
V = Vented Gauge (vented to atmosphere) < 40 bar

Modification number
000 = standard

Cable length in m
Standard = 2 m

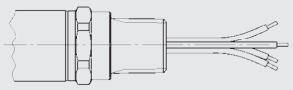
Dimensions:



*) optional depending on type "Sealed Gauge" / "Vented Gauge"

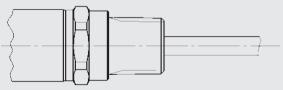
Pin connections:

Conduit (single leads)



Lead	HDA 47X9-A
red	Signal +
black	Signal -
green-yellow	Housing

Conduit (jacketed cable)



Lead	HDA 47XG-A
white	Signal -
brown	Signal +
green	n.c.
yellow	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.