



Pressure Transmitter HDA 4400 Ex applications

Relative pressure

Accuracy 0.5 %

Flameproof enclosure
ATEX, IECEx, CSA, triple approval
Flush membrane



Description:

The pressure transmitter series HDA 4400 with flush membrane is certified in the ignition protection type flameproof enclosure to ATEX, IECEx and CSA. The devices have triple approval, ensuring that they are universally suitable for use in potentially explosive atmospheres around the world. Therefore it is no longer necessary to stock multiple devices with separate individual approvals.

The pressure port is achieved with a fully-sealed stainless steel front membrane filled internally with a pressure transfer fluid. The process pressure is transmitted hydrostatically to the measurement cell via the pressure transfer fluid.

This device is used for applications in which a standard pressure port could become blocked, clogged or frozen by the particular medium used. Further applications include processes where the medium changes regularly and any residues could cause mixing or contamination of the media, or in highly viscous media.

The main fields of application are in the oil & gas industry, e.g. in hydraulic power units, drill drives or valve actuation stations. The device is also used in mining applications as well as in locations with high dust contamination.

Protection types and applications:

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	4	6	10	16	25	40	100	250	400	600	-1..3
Overload pressures	bar	8	12	20	32	50	80	200	500	800	1000	8
Burst pressure	bar	20	30	50	80	125	200	500	1000	2000	2000	20

Mechanical connection ¹⁾

G1/2 A ISO 1179-2
G1/2 with additional front O-ring seal
G1/4 with additional front O-ring seal

Tightening torque, recommended

20 Nm (G 1/4); 45 Nm (G 1/2)

Parts in contact with fluid

Stainless steel: 1.4435; 1.4301

Seal: FKM

O-ring: FKM

Conduit, housing material

1.4435; 1.4404

Pressure transfer fluid

Silicon-free oil

Output data

Output signal, permitted load resistance ²⁾

4 .. 20 mA, 2-conductor
R_{Lmax} = (U_B - 8 V) / 20 mA [kΩ]

Accuracy acc. to DIN 16086, terminal based

≤ ± 0.5 % FS typ.
≤ ± 1.0 % 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

≤ 1.5 ms

Long-term drift

≤ ± 0.3 % FS typ. / year

Environmental conditions

Compensated temperature range

-25 .. +85 °C

Operating/ambient temperature range ^{3,4)}

T6, T110 °C Ta = -30 .. +60 °C / -20 .. +60 °C
T5 Ta = -30 .. +80 °C / -20 .. +80 °C

Storage temperature range

-40 .. +100 °C

Fluid temperature range ^{3,4)}

T6, T110 °C Ta = -30 .. +60 °C / -20 .. +60 °C
T5 Ta = -30 .. +80 °C / -20 .. +80 °C

CE mark

EN 61000-6-1 / 2 / 3 / 4
EN 60079-0 / 1 / 31

Vibration resistance acc. to

≤ 10 g

DIN EN 60068-2-6 at 10 .. 500 Hz

Protection class acc. to DIN EN 60529
ISO 20653

IP 65 (Vented Gauge), IP 69 (Sealed Gauge)
IP 6K9K (Sealed Gauge)

Other data

Voltage supply

8 .. 30 V DC

Residual ripple of supply voltage

≤ 5 %

Life expectancy

> 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 (Full Scale) = relative to complete measuring range

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

¹⁾ Other mechanical connections on request

²⁾ Other output signals on request

³⁾ -20 °C with FKM seal, -30 °C on request

⁴⁾ T130 °C with Ta = -30 .. +80 °C / -20 .. +80 °C with electr. connection single lead possible

Fields of application:

	Single leads Electrical connection "9"	Jacketed cable Electrical connection "G"
CSA	Explosionproof (seal not required)	
ATEX	Flameproof	
IECEX	Flameproof	
^c CSA_{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 4 Z X - A - XXXX - XXX - D X - 000 (2m)

Mechanical process connection

Z = flush membrane

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

04.0; 06.0; 0010; 0016; 0025; 0040; 0060; 0100; 0250; 0400; 0600
0003 (-1 .. 3)

Mechanical connection

G01 = G1/2 A ISO 1179-2

G02 = G1/2 with additional front O-ring seal

G04 = G1/4 with additional front O-ring seal (only measuring ranges 0040; 0100; 0250; 0400 and 0600)

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

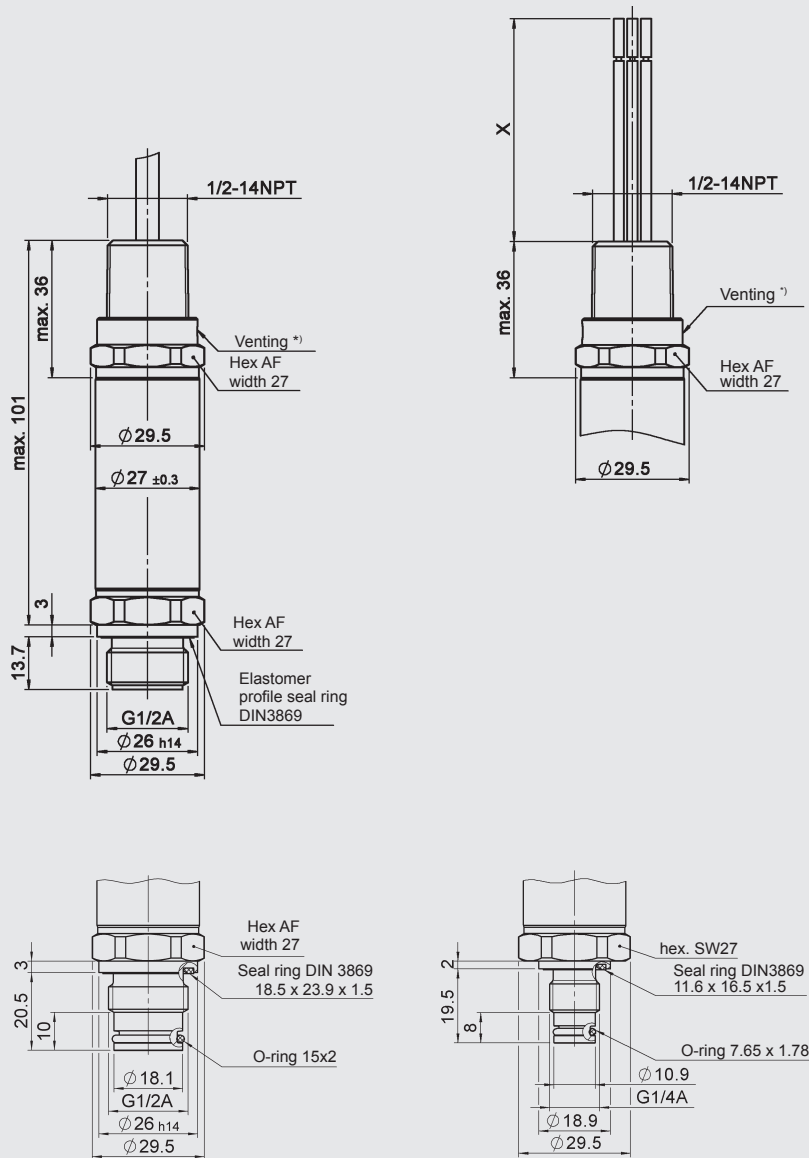
Modification number

000 = standard

Cable length in m

Standard = 2 m

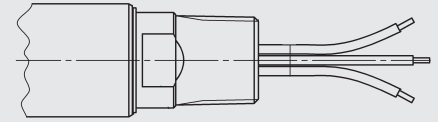
Dimensions:



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

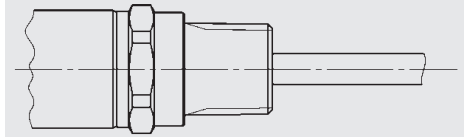
Pin connections:

Conduit (single leads)



Lead	HDA 44Z9-A
red	Signal +
black	Signal -
green-yellow	Housing

Conduit (jacketed cable)



Lead	HDA 44ZG-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.

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