



Description:

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

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

As with the industrial version of the HDA 4700, those with triple approval have a proven, fully-welded stainless steel measurement cell with thin film strain gauge without internal seals.

The main areas 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:

cCSAus Explosion Proof - Seal Not Required

- Class I Group A, B, C, D, T6, T5
- Class II Group E, F, G
- Class III
- Type 4

ATEX Flame Proof

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

IECEx Flame Proof

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

Special features:

- Accuracy $\leq \pm 0.25\%$ FS B.F.S.L.
- Certificates:
 - ATEX KEMA 10ATEX0100 X
 - CSA MC 224264
 - IECEx KEM 10.0053X
- Robust design
- Very small temperature error
- Excellent EMC characteristics
- Excellent durability

Electronic Pressure Transmitter

HDA 4700 ATEX, CSA, IECEx

Flameproof Enclosure



Technical data:

Input data	
Measuring ranges	100, 300, 500, 1000, 1500, 3000, 5000, 6000, 9000, 10000, 15000, 20000, 30000 psi
Overload pressures	290, 1160, 1160, 2900, 2900, 7250, 11600, 11600, 14500, 14500, 23200, 38400, 43500 psi
Burst pressures	1450, 2900, 2900, 7250, 7250, 14500, 29000, 29000, 29000, 29000, 43500, 43500, 58000 psi
Mechanical connection ¹⁾ (torque value)	1/4-18 NPT, male 1/4-18 NPT, female SAE 6 9/16-18 UNF 2A SF 250 CS20, Autoclave(7/16-20-UNF 2B) F 250 C, Autoclave (9/16-18 UNF 2B)
	30lb-ft(40Nm) - 1/4 NPT, SF 250 CX20 15 lb-ft(20Nm) - SAE 6, F 250 C
Parts in contact with medium	Stainless steel: 1.4542; 1.4571; 1.4435; 1.4404; 1.4301 Seal: FPM
Conduit and housing material	1.4404; 1.4435 (316L)
Output data	
Output signal, permitted load resistance ²⁾	4 .. 20 mA, 2 conductor $R_{Lmax} = (U_B - 8 V) / 20 \text{ mA} [\text{k}\Omega]$
Accuracy to DIN 16086, Max. setting	$\leq \pm 0.25\%$ FS typ. $\leq \pm 0.5\%$ FS max.
Accuracy at min. setting (B.F.S.L.)	$\leq \pm 0.0045\%$ FS/°F typ. $\leq \pm 0.0085\%$ FS/°F max.
Temperature compensation Zero point	$\leq \pm 0.0045\%$ FS/°F typ. $\leq \pm 0.0085\%$ FS/°F max.
Temperature compensation Over range	$\leq \pm 0.008\%$ FS / °C typ. $\leq \pm 0.015\%$ FS / °C max.
Non-linearity at max. setting to DIN 16086	$\leq \pm 0.3\%$ FS max.
Hysteresis	$\leq \pm 0.1\%$ FS max.
Repeatability	$\leq \pm 0.05\%$ FS
Rise time	≤ 1.5 ms
Long-term drift	$\leq \pm 0.1\%$ FS typ. / year
Environmental conditions	
Compensated temperature range	T5, T130 °C: -13..+176°F T6, T110 °C: -13..+140°F
Operating temperature range ³⁾	T5, T130 °C: -40..+176°F / -4..+176°F T6, T110 °C: -40..+140°F / -4..+140°F
Storage temperature range	-40..+212°F
Fluid temperature range ³⁾	T5, T130 °C: -40..+176°F / -4..+176°F T6, T110 °C: -40..+140°F / -4..+140°F
CE mark	EN 61000-6-1 / 2 / 3 / 4 EN 60079-0 / 1 / 31
Vibration resistance to DIN EN 60068-2-6 at 10 .. 500 Hz	≤ 20 g
Protection class to IEC 60529 to ISO 20653	IP 65 (Vented Gauge) IP 69K (Sealed Gauge)
Other data	
Voltage supply	8 .. 30 V DC
Residual ripple of supply voltage	$\leq 5\%$
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 the full measuring range

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

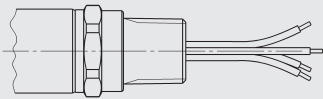
¹⁾ Other mechanical connections on request

²⁾ Other output signals on request

³⁾ -4°F with FPM seal, -40°F on request

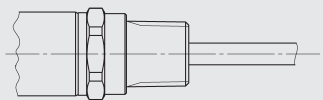
Pin connections:

Conduit (single cores)



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

Conduit (flying leads)



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

Areas of application:

Approvals	cCSAus: Explosion Proof - Seal not required ATEX: Flame Proof IECEX: Flame Proof
Certificate	ATEX KEMA 10ATEX100X CSA MC 224264 IECEX KEM 10.0053X
Applications / Protection types	cCSAus: 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 IECEX: Ex d I Mb Ex d IIC T6, T5 Gb Ex tb IIIC T110 .. 130 °C Db

Model code:

HDA 4 7 X X – A – XXXXX – D X – 000 (PSI) 72in

Mechanical connection

- 7 = SAE 6, 9/16-18 UNF
2A male
- 8 = 1/4-18 NPT, male
- F = 1/4-18 NPT, female
- C = SF 250 CX20, Autoclave
(7/16-20 UNF2B)
- B = F 250 C, Autoclave
(9/16-18 UNF 2B, female)
- Others on request

Electrical connection

- 9 = 1/2-14 NPT Conduit (male thread),
single cores
- G = 1/2-14 NPT Conduit (male thread),
flying leads

Signal

- A = 4 .. 20 mA, 2 conductor

Pressure ranges in psi

- 0100, 0300, 0500, 1500, 3000, 5000, 6000, 9000
- 10000, 15000 (only with mechanical connection "C")
- 20000, 30000 (only with mechanical connection "B")

Approval

- D = CSA Explosion Proof - Seal not required
ATEX Flame Proof
IECEX Flame Proof

Type of measurement cell

- S = Sealed Gauge (sealed to atmosphere) ≥ 500 psi
- V = Vented Gauge (vented to atmosphere) ≤ 300 psi

Modification number

- 000 = Standard

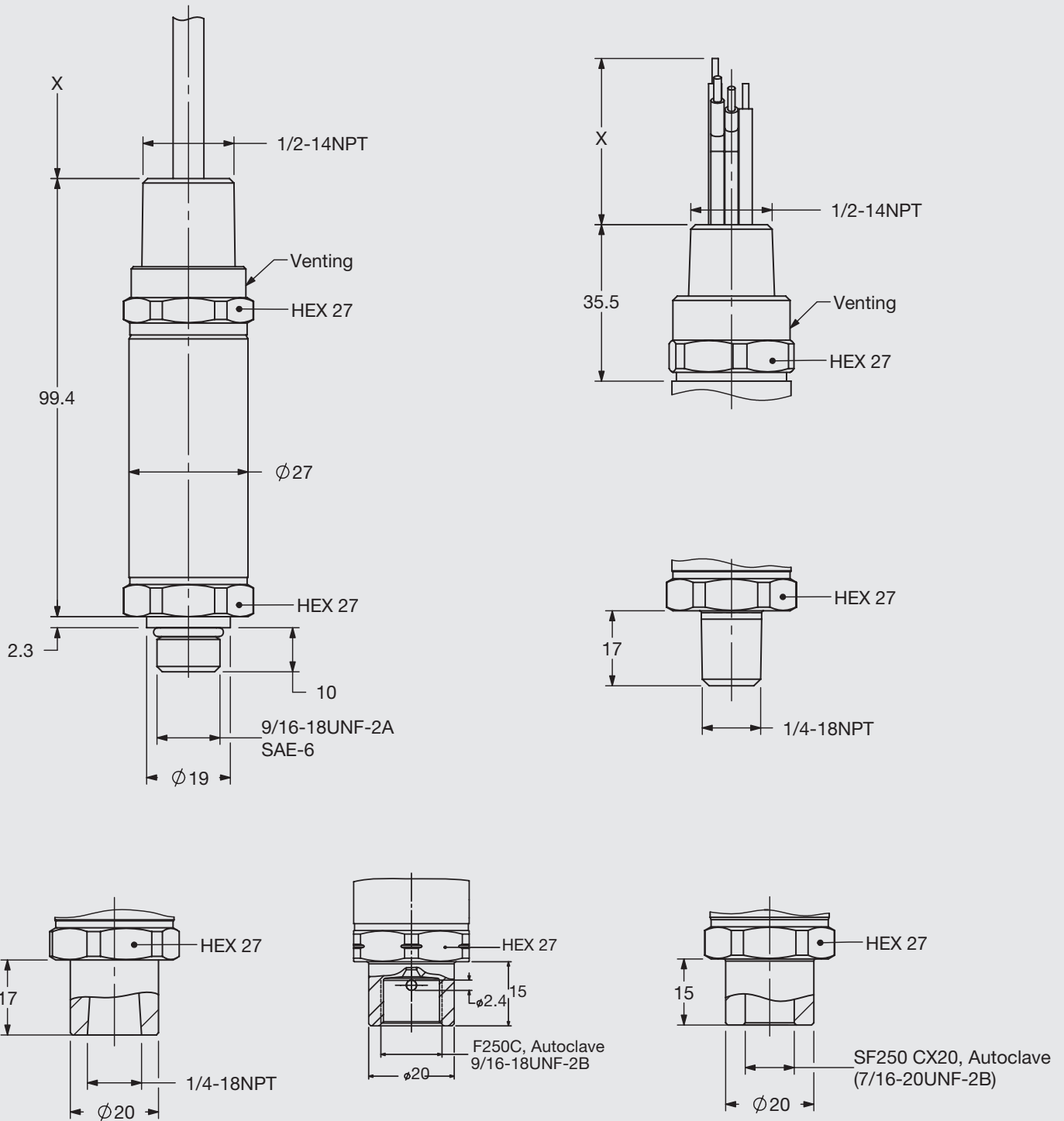
Cable length in inches

- Standard = 72 inches

Accessories:

Appropriate accessories, such as electrical connectors, can be found in the Accessories brochure.

Dimensions:



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.

For European mechanical connection and bar ranges see European Catalog

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