



Electronic Pressure Transmitter HDA 8700 for Applications with Increased Functional Safety

Functional Safety
PL d
SIL 2



Description:

This version of the pressure transmitter series HDA 8700 has been developed specifically for use in safety circuits / safety functions as part of the functional safety of machinery and equipment up to SIL 2 (IEC 61508) or PL d (ISO 13849).

During normal operation, the pressure transmitter HDA 8700 generates a pressure-proportional output signal. In the background, the pressure transmitter performs cyclical diagnostic tests to detect internal errors.

If an instrument error is detected, the pressure transmitter HDA 8700 supplies an output signal < 3 mA which is recognized by the user as an unacceptable discrepancy.

This means that the pressure transducer HDA 8700 achieves Performance Level d in the Safety category (based on a Category 2 of the architecture) and SIL 2. As a result, the pressure transducer can be recommended for use in applications where safety is critical.

The main areas of application are in mobile and stationary safety-oriented systems such as load torque displays or load torque limitation in loading cranes or working platforms.

Special features:

- SIL 2 / PL d certification
- Accuracy $\leq \pm 0.25\%$ FS B.F.S.L.
- Outstanding performance in terms of temperature effect and EMC
- Very compact design

Technical data:

Input data	
Measuring ranges	500; 750; 1000; 1500; 3000; 5000; 6000; 9000 psi
Overload pressures	1160; 1740; 2900; 2900; 7250; 11600; 11600; 14500 psi
Burst pressures	2900; 4350; 7250; 7250; 14500; 14500; 29000; 29000 psi
Mechanical connection (Torque value)	SAE 4, 7/16-20 UNF 2A(11 lb-ft; 15 Nm) SAE 6, 9/16-18 UNF 2A(15 lb-ft; 20 Nm) G1/4 A DIN 3852 (15 lb-ft; 20 Nm) each with orifice 0.5 mm
Parts in contact with medium ¹⁾	Mech. conn.: Stainless steel Seal: FPM
Output data	
Output signal, permitted load resistance	4 .. 20 mA $R_{Lmax} = (U_B - 8 V) / 20 \text{ mA}$ [kΩ]
Output signal with error recognition	< 3 mA
Accuracy to DIN 16086	$\leq \pm 0.25\%$ FS typ.
Max. setting	$\leq \pm 0.5\%$ FS max.
Accuracy at minimum setting (B.F.S.L.)	$\leq \pm 0.15\%$ FS typ. $\leq \pm 0.25\%$ FS max
Temperature compensation	$\leq \pm 0.006\%$ FS/ °F typ.
Zero point	$\leq \pm 0.0012\%$ FS/ °F max.
Temperature compensation	$\leq \pm 0.006\%$ FS/ °F typ.
Over range	$\leq \pm 0.0012\%$ FS/ °F max.
Non-linearity at max. setting to DIN 16086	$\leq \pm 0.03\%$ FS max.
Hysteresis	$\leq \pm 0.1\%$ FS max.
Repeatability	$\leq \pm 0.1\%$ FS.
Rise time	$\leq 10 \text{ ms}$
Long term drift	$\leq \pm 0.3\%$ FS typ. / year
Environmental conditions	
Compensated temperature range	-13 .. +185 °F
Operating temperature range ²⁾	-40 .. +212 °F / -13 .. +212 °F
Storage temperature range	-40 .. +212 °F
Fluid temperature range ²⁾	- 40 .. +257 °F / -13 .. +257 °F
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance according to DIN EN 60068-2-6 at 0 .. 500 Hz	$\leq 25 \text{ g}$
Shock resistance according to DIN EN 60068-2-29 (11 ms)	100 g / 6 ms / half-sine 500 g / 1 ms / half-sine
Protection class to IEC 60529	IP 67
Other data	
Electrical connection	AMP Junior Power Timer, 2 pole
Supply voltage	8 .. 32 V DC
Service life	> 10 million cycles (0 .. 100 %)
Weight	~ 75 g
Safety-related data	
Performance level	
Based on	DIN EN ISO 13849-1:2008
PL	d
Architecture	Category 2
Safety Integrity Level	
Based on	DIN EN 61508:2001
SIL	2

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

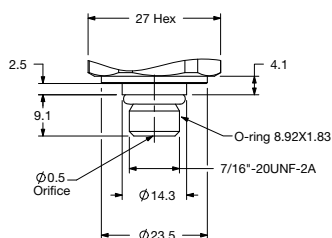
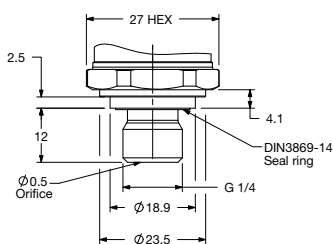
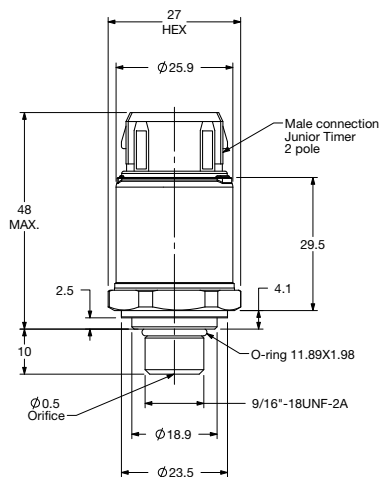
Other seal materials on request

¹⁾

-13°F with FPM seal, -40°F on request

²⁾

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 bar ranges see European Catalog

Order details:

For exact specification, please contact the Sales Department of HYDAC ELECTRONIC.

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