HYDROGEN

Pressure Transducer
AST2000

Overview

The AST2000 series is now available for hydrogen pressure sensing applications. Tested to a variety of hydrogen and automotive standards, the AST2000 series combines the best mechanical design for hydrogen measurement with high performance digital compensation.

Benefits

- One-piece design
- All 316L wetted material for optimal compatibility
- No oil-filled cavities leave no chance of containment
- Non-welded diaphragm eliminates leak paths and weak points
- Digitally compensated
- Krystal Bond™ Technology

Applications

- PEM Fuel Cells I Hydrogen Storage
- Hydrogen Filling Stations I Test Stands
- Back Up Power

Approvals

- EC Type-approval NO. e24*79/2009*406/2010*0006*02
- (EC) No 79/2009, as implemented by Regulation (EU) No 406/2010
- CE EN61326 (all models)

TUV Approval Files	Normal Working Pressure (NWP)	Max Applied Working Pressure (MAWP)	Pressure Range
07-01820/1-TUV	20 Bar (2MPa)	25 Bar (2.5MPa)	20 Bar (2MPa)
EC79	350 Bar (35MPa)	438 Bar (43.8MPa)	448 Bar (44.8MPa)
EC79	700 Bar (70MPa)	875 Bar (87.5MPa)	900 Bar (90MPa)

Performance @ 25°C (77°F)

Accuracy < ±0.25% BFSL
(Accuracy includes non-linearity, hysteresis & non-repeatability)

Stability (1 year) ±0.25% FS, typical

Pressure Cycles 50,000

Environmental Data

Temperature

Operating -40 to 85°C (-40 to 185°F)

Storage -40 to 125°C (-40 to 250°F)

0-100% relative humidity, non-condensing

Thermal Limits

Compensated Range -10 to 60°C (14 to 140°F)

Thermal Error ±2% of FS (±1% OF FS Optional)

Other

Shock 100G, 11 msec, 1/2 sine

Vibration 20G peak, 20 to 2400 Hz.

EMI/RFI Protection: Yes

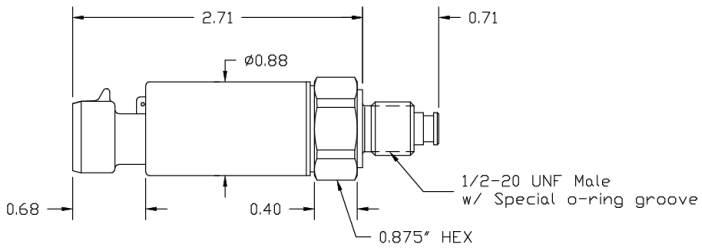
Rating: IPX6K

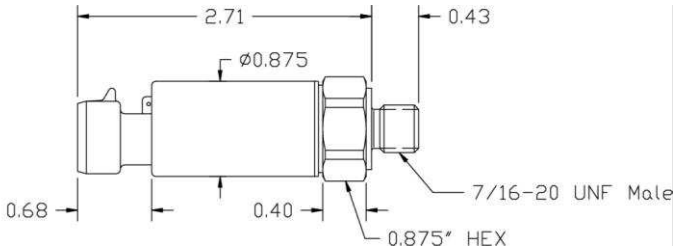
Electrical Data

Output	0.5-4.5V Ratiometric
Excitation	5VDC
Output Impedance	< 100 Ohms, Nominal
Current Consumption:	< 10mA
Bandwidth	(3dB): DC to 3kHz
Output Noise	< 2mV RMS
Zero Offset:	±0.5% of FS
Span Tolerance:	±0.5% of FS
Output Load:	10k Ohms, Min.
Reverse Polarity Protection	Yes

**4-20mA and 1-5V outputs available, contact factory

Dimensions





Test Performed

The tests performed are marked as "X" in the following table. The test conditions, parameters, and details are described in the Annex 1. (Test Report) to Technical Report No. KS1011296 dated 2011-01-04.

No.	Type of Test	EU 406/2010 Annex IV	Remark
1	General Requirements	Part 3 Sect. 2	X
2	Technical Requirements	Part 3 Sect. 3	X
3	Hydrogen Compatibility Test	Part 3 Sect. 4.1.1	X
4	Ageing Test*	Part 3 Sect. 4.1.2	X
5	Ozone Compatibility Test**	Part 3 Sect. 4.1.3	Not Applicable
6	Corrosion Resistance Test	Part 3 Sect. 4.2.1	X
7	Endurance Test	Part 3 Sect. 4.2.2	X
8	Hydraulic Pressure Cycle Test	Part 3 Sect. 4.2.3	X
9	Internal Leakage Test	Part 3 Sect. 4.2.4	Not Applicable
10	External Leakage Test	Part 3 Sect. 4.2.5	X
11	Isolation Resistance Testing	ECE R110 Rev. 1	X
12	EMC Compatibility Testing	ECE R110 Rev. 1	X
13	Review of Information Documentation	EU 406/2010 Annex II Part 1	X

* Test applies only for non-metallic materials ** Test applies only to elastomer materials where either a sealing surface is exposed directly to air or if used as a flexible fuel line cover.

Ordering Information

AST2000	F	00448	B	1	F	1	000

Series Type

Process Connection
F= 7/16-20 UNF Male [SAE 4]
M= 3/8-24 UNF Male [SAE 3]
X= Special (see option code 487)

Pressure Range*
00020= 20 Bar
00448= 448 Bar
00900= 900 Bar
* 3/8-24 UNF Male [SAE 3] is only available for 20 bar

Pressure Unit
B= Bar

Outputs
1= 0.5-4.5V ratiometric

Electrical
F= Packard Metripack 150 3-Pin

Wetted Material
1= 316L

Options
000= No Options
384= High Accuracy
487= 1/2-20 UNF Stud for high pressure H_2 storage

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