

# AST2000 Hydrogen ASIC Pressure Sensor



**316L Stainless Steel, Media Isolated Pressure Sensor for Hydrogen Applications**

## 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
- Hydrogen Storage
- Hydrogen Filling Stations
- Test Stands
- Back Up Power

\* Lean more about Hydrogen pressure measurement ([Hydrogen Applications](#))

## Approvals

- EC79 (applicable to table below)
- CE EN61326 (all models)



TUV Approval Files	Pressure Range	Burst Pressure
07-01820/1-TUV	20 Bar (2MPa)	600 Bar
EC79	20 Bar (2MPa)	600 Bar
EC79	350 Bar (35MPa)	2800 Bar
EC79	700 Bar (70MPa)	2800 Bar

Performance @ 25°C (77°F)	
Accuracy*	< ±0.5% BFSL
Stability (1 year)	±0.25% FS, typical
Over range Protection	2X Rated Pressure
Pressure Cycles	> 100 Million
* Accuracy includes non-linearity, hysteresis & non-repeatability	

Environmental Data	
<b>Temperature</b>	
Operating	-40 to 85°C (-40 to 185°F)
Storage	-40 to 125°C (-40 to 250°F)
<b>Thermal Limits</b>	
Compensated Range	-10 to 70°C (14 to 148°F)
Thermal Error	+/- 2% of FS (+/- 1% OF FS Optional)
<b>Other</b>	
Shock	100G, 11 msec, 1/2 sine
Vibration	20G peak, 20 to 2400 Hz.
EMI/RFI Protection:	Yes
Rating:	IPX6K

Electrical Data	
<b>Output</b>	<b>0.5-4.5V ratiometric**</b>
Excitation	5VDC regulated
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



## Ordering Information

**AST2000 F 00500 B 1 F 1 000**

**Series**

**Pressure Ports**

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  
 00500= 500 Bar  
 00700= 700 Bar  
 00900= 900 Bar

**Pressure Unit**

B= Bar

**Output**

1 = 0.5-4.5V ratiometric [5VDC supply]

**Electrical**

F= Packard Metripack 150

**Wetted Material**

1= 316L

**Options**

000= No Options  
 384= High Accuracy  
 487= 1/2-20 UNF Stud for high pressure H<sub>2</sub> storage

*\*3/8-24 UNF Male [SAE 3] is only available for 20 bar and 448 bar*

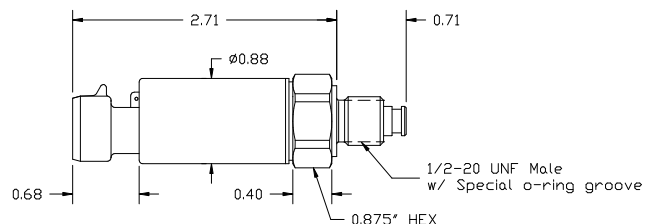
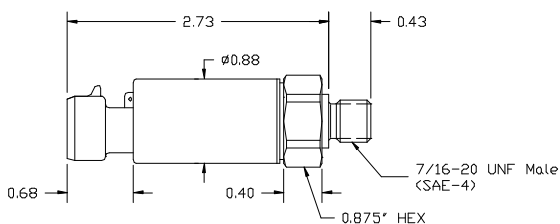
**Test Performed**

*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.

## Dimensional Data



## Warranty

**Workmanship** - AST, Inc. pressure transmitters have a limited one-year warranty to the original purchaser. AST, Inc. will replace or repair, free of charge, any defective transmitter. This warranty does not apply to any units that have been modified; misused, neglected or installed where the application exceeds published ratings. AST's sensors are made with pride in New Jersey, USA. If in the area please feel free to stop by for a visit!

**Installation/Applications** - The purchaser is responsible for media compatibility, functional adequacy, and correct installation of the transmitter.