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

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

<table>
<thead>
<tr>
<th>TUV Approval Files</th>
<th>Pressure Range</th>
<th>Burst Pressure</th>
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<tbody>
<tr>
<td>07-01820/1-TUV</td>
<td>20 Bar (2MPa)</td>
<td>600 Bar</td>
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<tr>
<td>EC79</td>
<td>20 Bar (2MPa)</td>
<td>600 Bar</td>
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<tr>
<td>EC79</td>
<td>350 Bar (35MPa)</td>
<td>2800 Bar</td>
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<td>EC79</td>
<td>700 Bar (70MPa)</td>
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</table>

Performance @ 25°C (77°F)

- Accuracy: < ±0.25% BFSL
  (Accuracy includes non-linearity, hysteresis & non-repeatability)
- Stability (1 year): ±0.25% FS, typical
- Over Range Protection: 2X Rated Pressure
- Pressure Cycles: > 100 Million

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

<table>
<thead>
<tr>
<th>No.</th>
<th>Type of Test</th>
<th>EU 406/2010 Annex IV</th>
<th>Remark</th>
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<tbody>
<tr>
<td>1</td>
<td>General Requirements</td>
<td>Part 3 Sect. 2</td>
<td>X</td>
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<td>2</td>
<td>Technical Requirements</td>
<td>Part 3 Sect. 3</td>
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<td>3</td>
<td>Hydrogen Compatibility Test</td>
<td>Part 3 Sect. 4.1.1</td>
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<td>4</td>
<td>Ageing Test*</td>
<td>Part 3 Sect. 4.1.2</td>
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<td>5</td>
<td>Ozone Compatibility Test**</td>
<td>Part 3 Sect. 4.1.3</td>
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<td>6</td>
<td>Corrosion Resistance Test</td>
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<td>7</td>
<td>Endurance Test</td>
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<td>Hydraulic Pressure Cycle Test</td>
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<td>Internal Leakage Test</td>
<td>Part 3 Sect. 4.2.4</td>
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<td>10</td>
<td>External Leakage Test</td>
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<td>11</td>
<td>Isolation Resistance Testing</td>
<td>ECE R110 Rev. 1</td>
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<td>12</td>
<td>EMC Compatibility Testing</td>
<td>ECE R110 Rev. 1</td>
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</table>

* 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.

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.
# Ordering Information

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<thead>
<tr>
<th>Item</th>
<th>Code</th>
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<td>Process Connection</td>
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<td>Pressure Range</td>
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**Series Type**

- **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

*3/8-24 UNF Male [SAE 3] is only available for 20 bar and 448 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 H₂ storage