HYDRASTAR is a non-contact, fast response, shock resistant displacement transducer designed for mounting inside hydraulic or pneumatic cylinders.

Designed to fit in applications where space is limited, its total length is only 2.6" (6.3 cm) longer than the measurement length. This includes bulkhead mounting flange and non-linear portion of the probe.

The core is mounted in a gun drilled hole in the piston and piston rod. As the core/piston moves over the transducer, a proportional voltage is generated by the signal processor.

Patented signal processing allows it to measure high speed displacement with less error than magnetostrictive sensors.

**FEATURES**

- Fast 35 µS response
- ±0.15% linearity, (±0.10% optional)
- Dynamic temperature compensation
- Body length only 2.6" longer than stroke
- Compact design
- Absolute continuous measurement
- Single coil wound with large gauge wire

**BENEFITS**

- Monitor high speed motions
- Accurate measurements
- Stable over a wide temperature range
- Measure high speed displacement
- Less sensitive to temperature extremes
- Accurate position at power up
- Better shock and vibration resistance

**APPLICATIONS**

- Hydraulic cylinders
- Hydraulic valves
- Pneumatic cylinders
- Pneumatic valves
- Material handling systems
- Clevis cylinders
- Liquid level measurement
- Military applications
- Aerospace flight controls
- X-Y positioning feedback
Technical Specifications

### Models

<table>
<thead>
<tr>
<th>Models</th>
<th>HS1K</th>
<th>HS2K</th>
<th>HS3K</th>
<th>HS4K</th>
<th>HS5K</th>
<th>HS6K</th>
<th>HS9K</th>
<th>HS12K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Linear Range</td>
<td>2 (51)</td>
<td>4 (102)</td>
<td>6 (152)</td>
<td>8 (203)</td>
<td>10 (254)</td>
<td>12 (305)</td>
<td>18 (457)</td>
<td>24 (610) inches (mm)</td>
</tr>
</tbody>
</table>

### PERFORMANCE

- **Non-Linearity**: < ±0.10% standard (±0.05% optional*)
- **Resolution**: infinite
- **Repeatability**: 0.003% of full scale typical
- **Compensated Temperature Range**: 25°F to 175°F (-5°C to 80°C)
- **Operating Temperature Range**: -60°F to 257°F (-50°C to 125°C)
- **Vibration Resistance**: Meets MIL-STD 810C, Figure 514-5, Curve AK Time Schedule II Random Vibration Test (Overall g rms=20.7)
- **Shock Resistance**: 50 g’s peak (6 milliseconds) half sine

### ELECTRICAL

- **Excitation**: 112 kHz
- **Frequency Response**: DC to 10,000 Hz (-3 dB)
- **Response Time**: 35µS
- **Connections**: 10 ft (3m) coaxial cable; cable dia 0.1" (2.5mm); with Mini DIN connector

### PHYSICAL

- **Core Material**: aluminum
- **Transducer Construction**: stainless steel
- **Maximum Operating Pressure**: 5000 psi (350 bar)

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*Not available for HS1K

HydraStar and related products are protected by one or more of the following patents: U.S. 4,667,158; 4,327,350; 4,912,409; 4,912,409; 4,866,378; 5,068,607; U.K. 2054954; Japan 1498268; France 8014767; 8101087. Additional U.S. and Foreign patents pending.

**WARRANTY**

All Sentech Inc. products are warranted against defective materials and workmanship. This warranty applies for a period of one year from the date of delivery to the original purchaser. Any product that is found within the one year period not to meet these standards will be replaced or repaired at the discretion of Sentech Inc. No other warranty is expressed or implied. Although Sentech Inc. manufactures its products to exacting specification standards, we assume no responsibility for their misuse. Sentech Inc. accepts no liability for damages, incidental or punitive, in applications using our products. Please note: It is solely the user’s responsibility to properly install and maintain transducers. Sentech Inc. manufactures its products to meet stringent specifications and cannot assume responsibility for those consequences arising from their misuse or unauthorized modification.

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