ARS PRO & ARS HG
High Performance Angular Rate Sensors

The lightweight, single axis ARS PRO and ARS HG are the highest rated angular rate sensors for high energy testing.

Features

- Ultra-small, low mass single-axis package
- All models now offer improved vibration and shock tolerance
- Standard range options: ±300, 1500, 8k, 18k, 50k deg/sec
  Variety of bandwidth options, DC response
- Shunt check 3000 Ω equivalent bridge resistance
- Optional Dallas ID and/or user-specified connector
- ISO 17025 (A2LA Accredited) calibration services available, NIST traceable
- IP67 rated for dust protection and immersion in water

The ARS PRO and ARS HG angular rate sensors are low mass and high shock tolerant designed to reliably measure high rates of angular velocity. Packaged in rugged aluminum enclosures, the ARS PRO and ARS HG are available in multiple ranges and bandwidth options. For extreme applications, the ARS HG offers unparalleled reliability up to ±50k deg/sec and shock survivability up to 10000 g.

High performance and flexible packaging options make DTS the preferred sensors for automotive, aerospace, biomechanics and blast testing applications worldwide.

DTS mounting blocks offer an easy three axis solution. Add three Endevco 7264 or MSI 64 accelerometers to create a six degrees of freedom package.

Diversified Technical Systems designs and manufactures data acquisition systems and sensors for the experienced test professional.

www.dtsweb.com
Specifications

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<tr>
<th>MODEL</th>
<th>RANGE</th>
<th>BANDWIDTH</th>
<th>NOISE</th>
<th>APPLICATION NOTES</th>
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<tr>
<td>ARS PRO-300</td>
<td>±300 deg/sec range</td>
<td>0-300 Hz</td>
<td>&lt;0.6% of full scale over rated bandwidth</td>
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<tr>
<td></td>
<td>5.2 rad/sec</td>
<td></td>
<td></td>
<td>Lower rate dynamic measurements</td>
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<tr>
<td></td>
<td></td>
<td>0-2000 Hz</td>
<td></td>
<td>Vehicle handling, NVH</td>
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<tr>
<td>ARS PRO-1500</td>
<td>±1500 deg/sec range</td>
<td>0-2000 Hz</td>
<td>&lt;0.15% of full scale over rated bandwidth</td>
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<tr>
<td></td>
<td>26.2 rad/sec</td>
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<td></td>
<td>Medium range dynamic measurements</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Meets NHTSA specs for FMVSS 202a rear impact test</td>
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<tr>
<td>ARS PRO-8K</td>
<td>±8000 deg/sec range</td>
<td>0-300 Hz</td>
<td>&lt;0.15% of full scale over rated bandwidth</td>
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<tr>
<td></td>
<td>139.6 rad/sec</td>
<td></td>
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<td>High rate dynamic studies</td>
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<tr>
<td></td>
<td></td>
<td>0-600 Hz</td>
<td>&lt;0.20% of full scale over rated bandwidth</td>
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<td></td>
<td></td>
<td></td>
<td>High rate measurements requiring higher bandwidth</td>
</tr>
<tr>
<td>ARS PRO-18K</td>
<td>±18000 deg/sec range</td>
<td>0-2000 Hz</td>
<td>&lt;0.35% of full scale over rated bandwidth</td>
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<tr>
<td></td>
<td>314.2 rad/sec</td>
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<td>High rate measurements</td>
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<td></td>
<td></td>
<td></td>
<td>Biomechanics tests requiring high rate measurements</td>
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<tr>
<td>ARS HG-50K</td>
<td>±50000 deg/sec range</td>
<td>0-2000 Hz</td>
<td>&lt;0.15% of full scale over rated bandwidth</td>
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</tr>
<tr>
<td></td>
<td>872.7 rad/sec</td>
<td></td>
<td></td>
<td>Extreme environments, heavy-duty mounting</td>
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</tbody>
</table>

**PHYSICAL**
- ARS PRO: 7.6 x 10.2 x 14.6 mm (0.3 x 0.4 x 0.6")
- Enclosure: Anodized aluminum
- Weight: 2.2 g (0.078 oz)
- ARS HG: 7.6 x 16.5 x 14.6 mm (0.3 x 0.7 x 0.6")
- Enclosure: Anodized aluminum
- Weight: 2.5 g (0.081 oz)
- Triax Aluminum Mounting Block
  - ARS PRO Block: 21.6 x 21.6 x 10.9 mm (0.85 x 0.85 x 0.43")
  - Weight: 9.9 g (0.35 oz)
  - ARS HG Block: 21.6 x 21.6 x 16.8 mm (0.85 x 0.85 x 0.66")
  - Weight: 15.2 g (0.54 oz)

**ENVIRONMENTAL**
- Operating Temp.: -40 to +85°C (-40 to +185°F)
- Humidity: Short-term immersion OK
- Acceleration: 10000 g, 0.5 ms (survival only)
- IP Rating: IP67

**CONNECTORS**
- Type: LEMO typical, options available on request
- Dallas ID: Installed in connector
- Options: C: Add connector, CID: Add connector and Dallas ID

**CABLE**
- Type: Four conductor with overall shield, 30 AWG
- Element and shield isolated from enclosure
- Length: 25 ft (7.6 m) standard
- Termination: Pigtail termination standard
- Color Code:
  - Black: - Excitation
  - Red: + Excitation
  - Green: + Signal
  - White: – Signal

**ELECTRICAL**
- Excitation: 4.9-14.0 VDC
- Output not proportional to excitation
- Current: 4 mA nominal
- Signal Voltages: Centered 2.4 V above – Excitation
- Zero Output: ±200 mV
- Full Scale Output: ±2 V nominal
- Shunt Check: 3000 Ω equivalent bridge resistance

**PERFORMANCE**
- Cross Axis Sensitivity: <1.0%
- Non-Linearity: <0.5% full scale
- Influence of Linear Acceleration: <0.1 deg/sec/deg typical
- Thermal Drift: <40 to +85°C
- Zero: ±1 deg/sec (±5 deg/sec for 18k & 50k)
- Sensitivity: ±2% (±5% for 1500 & 8k)

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