

Best Performing
Angular Rate Sensor
For Dynamic Testing

ARS PRO & ARS HG

High Performance, Single-Axis Angular Rate Sensors

APPLICATIONS

- Aerospace analysis
- Amusement ride testing
- Automotive safety
- Biomechanics
- Blast testing
- Embedded monitoring
- Helicopter & aircraft
- Impact testing
- In-dummy
- Injury investigation
- Parachute deployment
- Package testing: truck, air, ship & rail
- Pedestrian head & leg form
- Ride & handling
- Sports & safety equipment



ARS PRO & ARS HG are the world's smallest, high shock tolerant angular rate sensors available. Designed to measure high rates of angular velocity, DTS offers multiple sensor ranges and bandwidths to support a variety of dynamic test applications.

Features

- Ultra-small, low mass single-axis package
- Advanced vibration and shock tolerance
- Multiple 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 engineered to measure high rates of angular velocity. Packaged in rugged aluminum enclosures, the ARS PRO and ARS HG are available in multiple range and bandwidth options. For extreme test environments, the ARS HG offers unparalleled performance up to $\pm 50k$ deg/sec and is shock rated to 10,000 g survivability. Performance and reliability make DTS sensors the preferred choice worldwide for automotive safety, aerospace, biomechanics and blast testing.



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



Need a smaller triaxial solution? The ARS3 PRO features three angular rate sensors in a single enclosure. DTS also offers the ultra-small 6DX PRO six degrees of freedom with a triaxial angular rate sensor & triaxial accelerometer.

PRODUCTS

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



www.dtsweb.com

DSH-004 (Rev 08.2017)

Specifications



ARS PRO
ALL Models
Actual Size



ARS HG
Actual Size

MODEL	RANGE	BANDWIDTH	NOISE	APPLICATION NOTES
ARS PRO-300	±300 deg/sec range 5.2 rad/sec	0-300 Hz	<0.6% of full scale over rated bandwidth	<ul style="list-style-type: none"> Lower rate dynamic measurements Vehicle handling, NVH SAE J211/ISO 6487 CFC 180 measurements
	±300 deg/sec range 5.2 rad/sec	0-2000 Hz	<0.6% of full scale over rated bandwidth	<ul style="list-style-type: none"> Low rate measurements requiring higher bandwidth
ARS PRO-1500	±1500 deg/sec range 26.2 rad/sec	0-2000 Hz	<0.15% of full scale over rated bandwidth	<ul style="list-style-type: none"> Medium range dynamic measurements Meets NHTSA specs for FMVSS 202a rear impact test SAE J211/ISO 6487 CFC 1000 Measurements
ARS PRO-8K	±8000 deg/sec range 139.6 rad/sec	0-300 Hz	<0.15% of full scale over rated bandwidth	<ul style="list-style-type: none"> High rate dynamic studies Whole body motion during impact Vehicle crash, sled testing SAE J211/ISO 6487 CFC 180 measurements
	±8000 deg/sec range 139.6 rad/sec	0-600 Hz	<0.20% of full scale over rated bandwidth	<ul style="list-style-type: none"> High rate measurements requiring higher bandwidth
	±8000 deg/sec range 139.6 rad/sec	0-2000 Hz	<0.30% of full scale over rated bandwidth	<ul style="list-style-type: none"> High range measurements and highest bandwidth Test dummies, headform impacts SAE J211/ISO 6487 CFC 1000 measurements
ARS PRO-18K	±18000 deg/sec range 314.2 rad/sec	0-2000 Hz	<0.35% of full scale over rated bandwidth	<ul style="list-style-type: none"> High rate dynamic measurements Biomechanics tests requiring high rate measurements SAE J211/ISO 6487 CFC 1000 measurements
ARS HG-50K	±50000 deg/sec range 872.7 rad/sec	0-2000 Hz	<0.15% of full scale over rated bandwidth	<ul style="list-style-type: none"> Extreme environments, heavy-duty mounting SAE J211/ISO 6487 CFC 1000 measurements

CFC = Channel Frequency Class

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)

Triaxial 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)
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

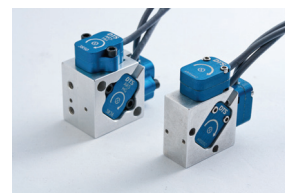
Excitation: 4.9-14.0 VDC
Output not proportional to excitation
Current: 4 mA nominal
Signal Voltages: Centered 2.4 V above -Excitation
Zero Output: ±200 mV
Full Scale Output: ±2 V nominal
Shunt Check: 3000 Ω equivalent bridge resistance

PERFORMANCE

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

CALIBRATION

Calibration Supplied: NIST traceable
ISO 17025: ISO 17025 (A2LA Accredited) available
Service Options: Factory, On-site & Service Contracts available



Triaxial mounting blocks are available for both the ARS PRO and ARS HG.

SERVICES

24/7 Worldwide Tech Support
ISO 17025 (A2LA) Calibration
On-site Calibration & Training
Application Support
Software Integration
OEM/Embedded Applications

WORLDWIDE SUPPORT

HELP CENTER (24/7/365 Access)
DTS Technical Centers
Global Sales Partners

HEADQUARTERS

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