

Best Performing
Angular Rate Sensor
For Dynamic Testing

ARS PRO & ARS HG

High Performance 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

PRODUCTS

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



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



Package size:
 0.3 x 0.4 x 0.6"
 (7.6 x 10.2 x 14.6 mm)

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 $\pm 50k$ 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.

Need a smaller triax solution?
Check out the DTS ARS3 PRO

Need 6 degrees of freedom?
DTS 6DX PRO is the smallest,
most reliable sensor available
for high shock environments



SERVICES

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

TECH CENTERS

Novi, Michigan USA
Sydney, Australia
Lincoln, United Kingdom
Tokyo, Japan



HEADQUARTERS

Seal Beach, California USA

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Specifications

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
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"> Low rate measurements requiring higher bandwidth 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
 Actual Size ARS PRO ALL Models	±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
MODEL	RANGE	BANDWIDTH*	NOISE	APPLICATION NOTES
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
 Actual Size				

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)
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 4 mA nominal
Current:	
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 +85°C
Zero:	±1 deg/sec (±5 deg/sec for 18k & 50k)
Sensitivity:	±2% (±5% for 1500 & 8k)



Specifications subject to change without notice.
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