

ARS-16 MHD Angular Rate Sensor

The ARS-16 is our most sensitive angular rate sensor, designed to work in a variety of high-performance applications, such as line-of-sight stabilization and precision motion control systems. The ARS-16 can measure angular motions as low as 40 nanoradians, and has low sensitivity to linear acceleration inputs, making it ideal for use in highly dynamic environments such as aerial and ground-based vehicles. The ARS-16 has a wide, usable frequency range from less than 2 Hz to more than 1,000 Hz.

The ARS-16 is designed to be a replacement for our older ARS-14 model. It is designed to provide an improved noise floor and larger temperature range to any application previously utilizing our ARS-14 sensor.

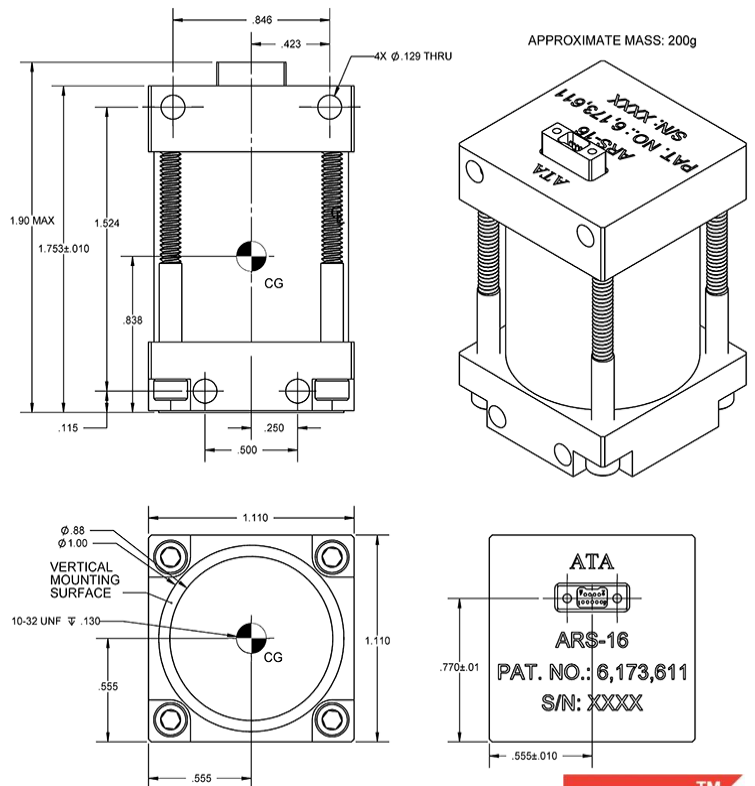
The ARS-16 is designed with a simple screw attachment method, or for applications requiring minimal size and weight, a cylindrical version is available which is designed to be epoxy bonded or clamped in place.

ATA's patented magneto-hydrodynamic angular motion sensors utilize the finest materials and workmanship combined in durable packages that feature:

- Dynamic range > 120 dB
- Low power consumption
- Low cross-axis angular sensitivity
- Low linear acceleration sensitivity
- Integral electronics/low noise
- One-year warranty against defects in materials and workmanship on sensors, 90 days on cables

This product is subject to U.S. Government approval as required in accordance with the U.S. Government International Traffic in Arms (ITAR) Subchapter M, Title 22, Code of Federal Regulations, Parts 120 through 130 (22 CFR 120-130).

Specifications are subject to change without notice. Contact ATA for detailed specifications and interface drawings.



"Sensing ways to make the world better"™

1300 Britt St SE ♦ Albuquerque, NM 87123 USA ♦ Tel: (505) 767-1200 ♦ Fax: (505) 768-1379
E-mail: ContactATA@atacorp.com ♦ Website: www.atacorp.com

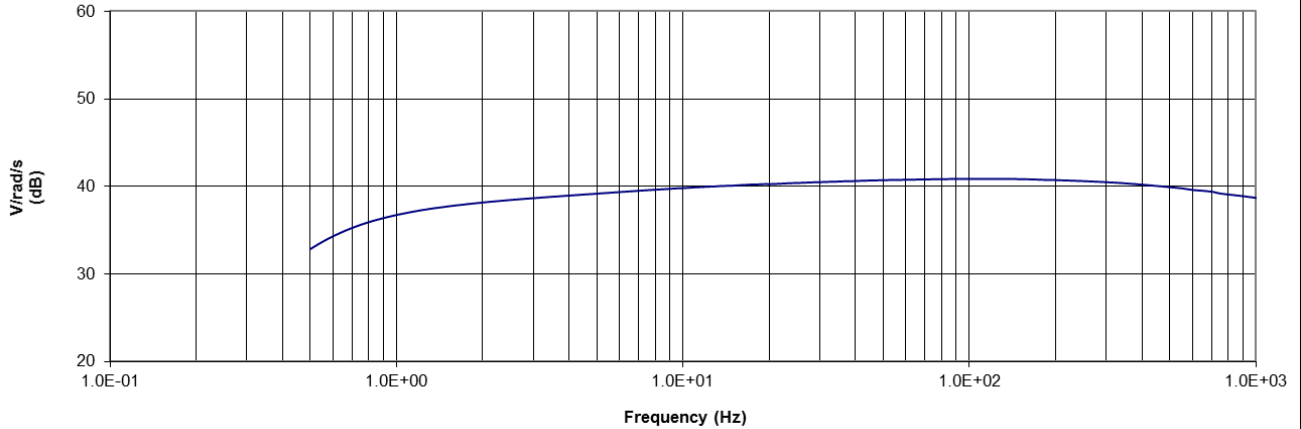


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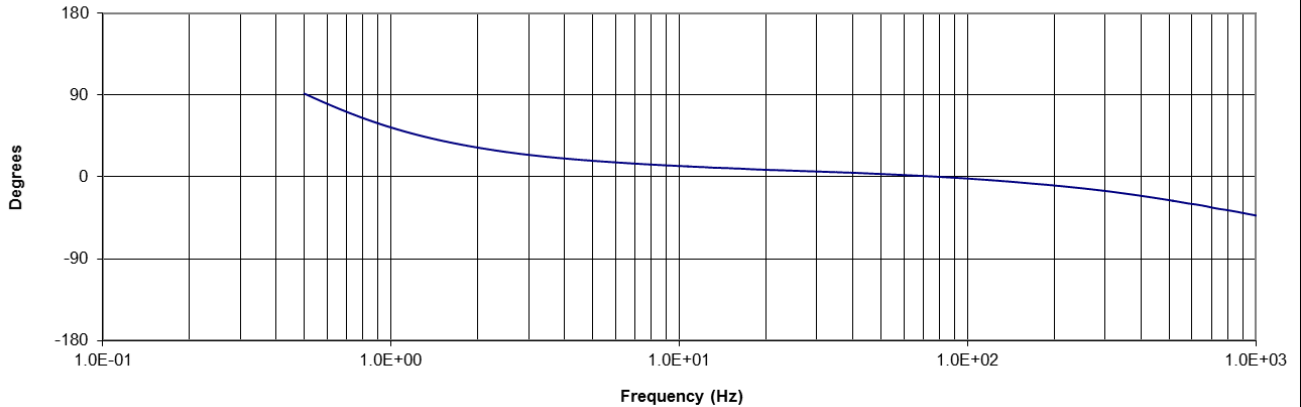
ARS-16 Product Specifications

Typical ARS-16 Frequency Response

ARS-16 Magnitude



ARS-16 Phase



Performance / Electrical

ARS-16 Range ¹	± 0.1 radians/sec
ARS-16 Scale Factor ²	100 Volt/(rad/sec)
Bandwidth, -3dB in testing	<2 to 1,000 Hz
Cross-axis Angular Error	< 2 %
Noise Equivalent Rate ⁴	$<5 \times 10^{-6}$ radians/sec rms
Noise Equivalent Angle ⁴	$<40 \times 10^{-9}$ radians rms
Temperature Coefficient ⁵	< 0.3 % Scale Factor / °C
Power Dissipation	< 0.2 Watts
Output Impedance	< 100 Ohms
Grounding ⁶	Case isolated from signal common by 1M Ω minimum

Notes:

- Based on a +/- 10V output voltage swing.
- Measured @ 10 Hz, custom scale factors available.
- Linear Acceleration Sensitivity is flat in angular displacement over sensor bandwidth.
- Over 1-1000 Hz.
- Percent change in Scale Factor per °C @ 10 Hz.
- Signal common may be connected to case if required.
- Analog Devices AD590 2 Terminal IC Temperature Transducer.

Wiring

ARS-16 Pin Out Airborn NK-2H2-009-235-TH00, M32139		
Pin	Std. Color	Connection
1	Black	Temp Sensor ⁷
2	Brown	Power/Signal Ground
3	Red	Power/Signal Ground
4	Orange	Signal Out
5	Yellow	Power/Signal Ground
6	Green	+15V
7	Blue	-15V
8	Violet	Power/Signal Ground
9	Gray	Case Ground

Environmental

Temperature-Operating	-30°C to +60°C
Temperature- Non-Operating	-30°C to +70°C

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