

ARS-12B MHD Angular Rate Sensor

The ARS-12 is our most sensitive angular rate sensor. Designed to eliminate jitter from airborne and space borne mirrors, optical systems or lasers, and for accurate line-of-sight imaging platform stabilization, the ARS-12 can measure vibrations and angular motions as low as 50 nanoradians.

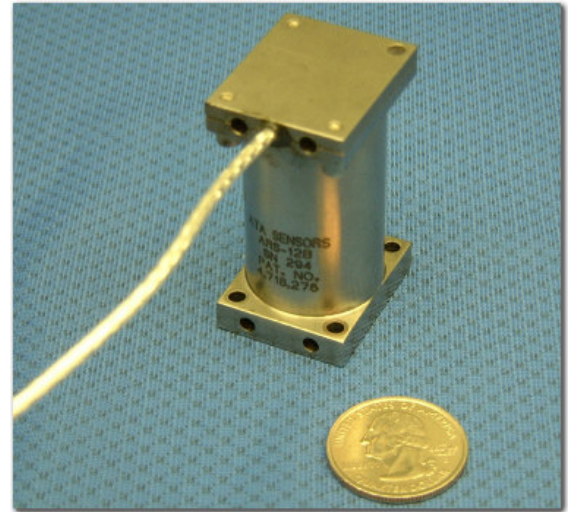
This product has very high sensitivity and a very low noise floor. The stainless steel housing and mounting plate make a rugged assembly, able to operate accurately after an 800g shock load. Its compact size and mass allow use in very small spaces. The ARS-12 has a wide, usable frequency range from less than 1 to more than 1,000 Hz. The ARS-12 is available in three standard ranges for angular rate measurement and three standard ranges for angular displacement measurement.

The ARS-12B has an optional test signal input and an optional temperature sensor.

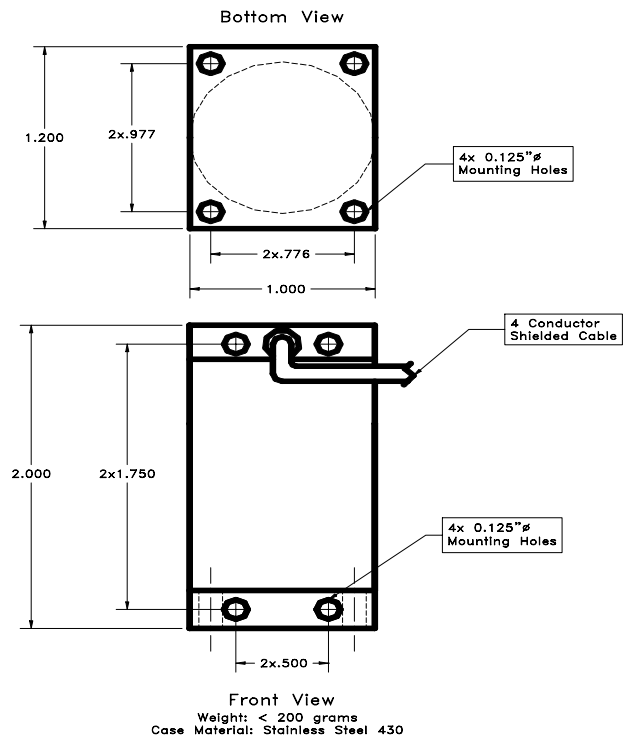
Custom scale factors and ranges are available.

ATA Sensors' patented MHD angular motion sensors utilize the finest materials and workmanship combined in durable packages that feature:

- No moving parts
- Dynamic range > 100 dB
- Low power consumption
- Low cross axis angular sensitivity
- Low linear acceleration sensitivity
- Integral electronics/low noise
- High survivable shock limits
- Superior applications support
- One-year warranty against defects in materials and workmanship on sensors, 90 days on cables.



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Product Specifications

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Dynamic

ARS-12B Angular Rate Standard Ranges ¹	± 1 rad/sec	± 100 mrad/sec	± 10 mrad/sec
ARS-12B Angular Rate Standard Scale Factors ²	10 V/rad/sec	100 V/rad/sec	1,000 V/rad/sec
Bandwidth	1 to 1000 Hz		
Cross-axis Angular Error	< 2 %		
Linear Acceleration Sensitivity	<5mrad/sec/g		
Noise Equivalent Rate	<8 microradians/s (rms)		
Non-linearity	< 0.1 %		
Temperature Coefficient ³	< 0.4 % Scale Factor / °C		

Electrical

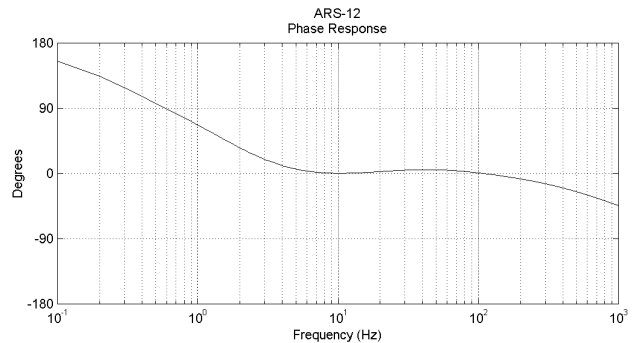
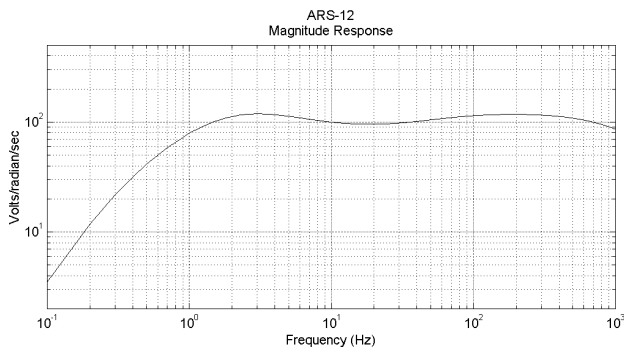
Power Dissipation	< 0.5 Watts
Output Impedance	< 100 Ohms
Grounding ⁴	Case isolated from signal common by 1M Ω minimum

Wiring

ARS-12B	
Red Lead	+Power (+5 Vdc to +15 Vdc)
White Lead	-Power (-5 Vdc to -15 Vdc)
Black Lead	Power and Signal Common (0 Vdc)
Yellow Lead	Signal

Environmental

Temperature - Operating	-35 to +60 °C (-31 to +140 °F)
Temperature - Non-operating	-35 to +60 °C (-31 to +140 °F)
Linear Acceleration, Max. Operating	500 g any axis
Linear Acceleration, Max. Survivable	800 g any axis



Notes:

1. Based on a +/- 10V output voltage swing.
2. Measured @ 10 Hz.
3. Percent change in Scale Factor per °C @ 10 Hz.
4. Signal common may be connected to case if required.