

ARS-14 MHD Angular Rate Sensor (Preliminary)

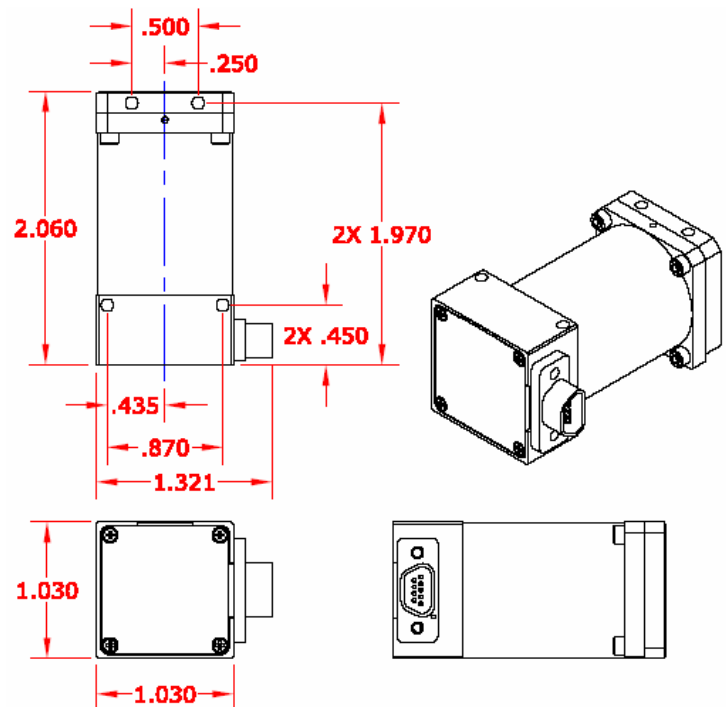
The ARS-14 is one of our most sensitive angular rate sensors. Designed to work in a variety of high-performance applications, the ARS-14 can measure vibrations and angular motions as low as 30 nanoradians.

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 TBDg shock load. Its compact size and mass allow use in very small spaces. The ARS-14 has a wide, usable frequency range from less than 2 Hz to more than 1,000 Hz. The scale factor of the ARS-14 is nominally 10V/rad/sec, but can be customized based on customer requirements.



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.



Product Specifications

ARS-14 MHD Angular Rate Sensor (*Preliminary*)

Dynamic

ARS-14 Angular Rate Standard Range ¹	± 1 rad/sec
ARS-14 Angular Rate Standard Scale Factor ²	10 V/rad/sec
Bandwidth	2 to 1000 Hz
Cross-axis Angular Error	< 2 %
Linear Acceleration Sensitivity	< TMD mrad/sec/g
Noise Equivalent Rate	<5 microradians/s (rms, 2.5-1000Hz)
Non-linearity	< TBD %
Temperature Coefficient ³	< TBD % Scale Factor / °C

Electrical

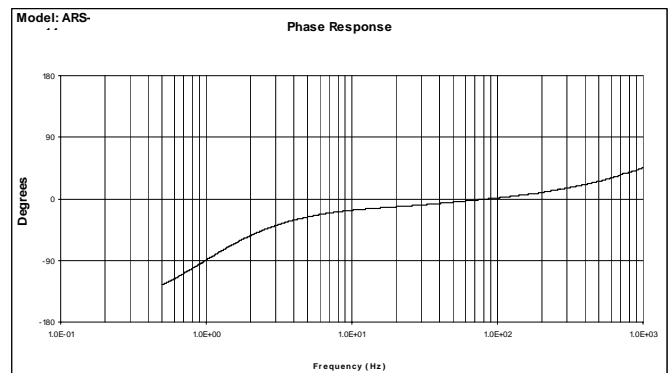
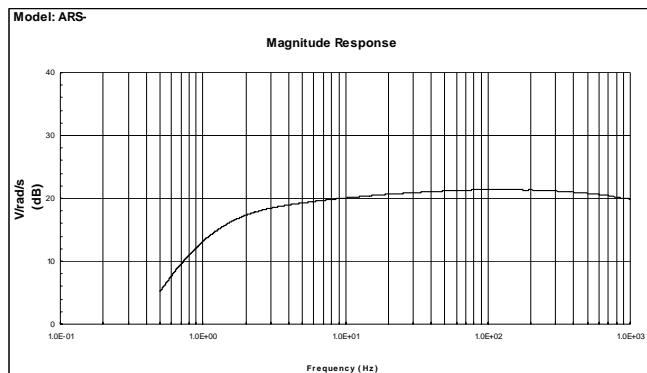
Power Dissipation	< 0.5 Watts
Output Impedance	< 100 Ohms
Grounding ⁴	Case isolated from signal common by 1MΩ minimum

Wiring

ARS-14 Pinout					
Pin	Color	Connection	Pin	Color	Connection
1	Black	Temp Out (-)	6	Green	+15V
2	Brown	Temp +	7	Blue	-15V
3	Red	PCB Ground	8	Purple	Power Ground
4	Orange	Signal Out	9	Gray	Case Ground
5	Yellow	N/C			

Environmental

Temperature – operating	-30 to +50 °C
Temperature - Non-operating	-40 to +60 °C
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, custom scale factors available.
3. Percent change in Scale Factor per °C @ 10 Hz.
4. Signal common may be connected to case if required.