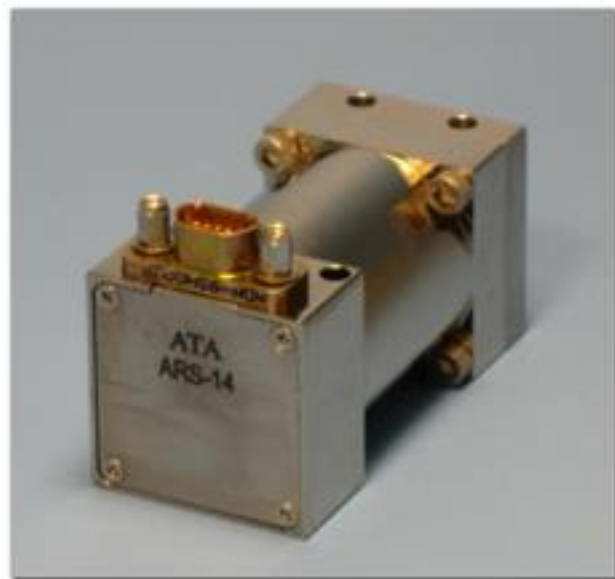


# ARS-14 MHD Angular Rate Sensor

The ARS-14 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-14 can measure angular motions as low as 50 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-14 also features low power consumption, making it a candidate for application where power is limited. The assembly is compact, rugged, and capable of handling environmental extremes without affecting performance. The ARS-14 is also space qualifiable. 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 20 Volt/(rad/sec), but can be customized based on customer requirements.

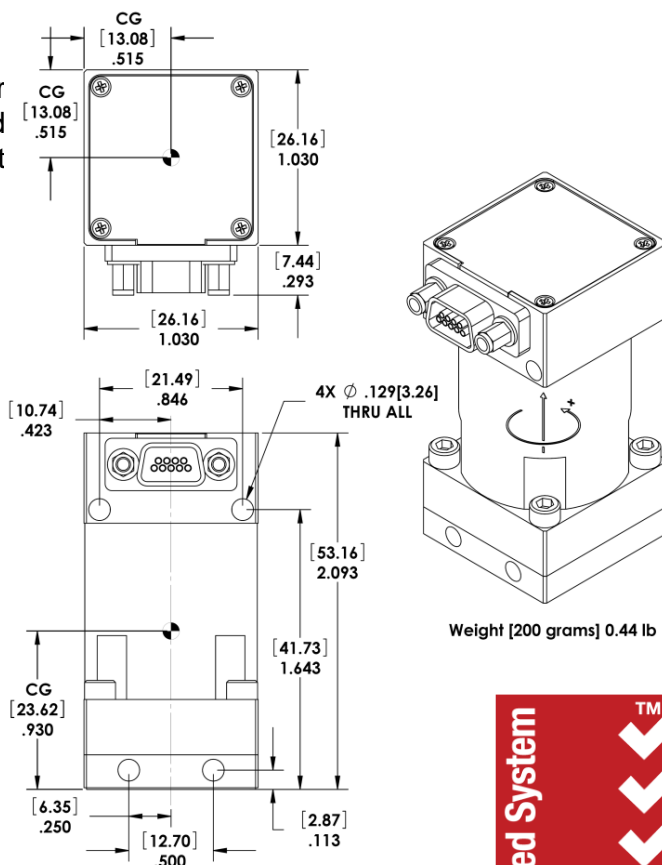


ATA's patented magneto-hydrodynamic angular motion sensors utilize the finest materials and workmanship combined in durable packages that feature:

- 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.



**ATA**

*"Sensing ways to make the world better"®*

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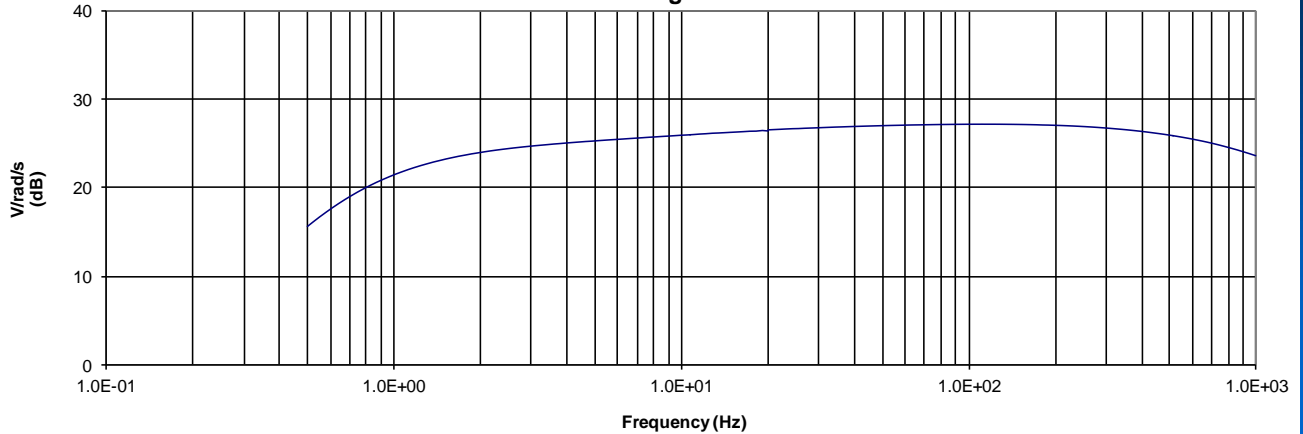


SAI GLOBAL  
ISO 9001  
Quality

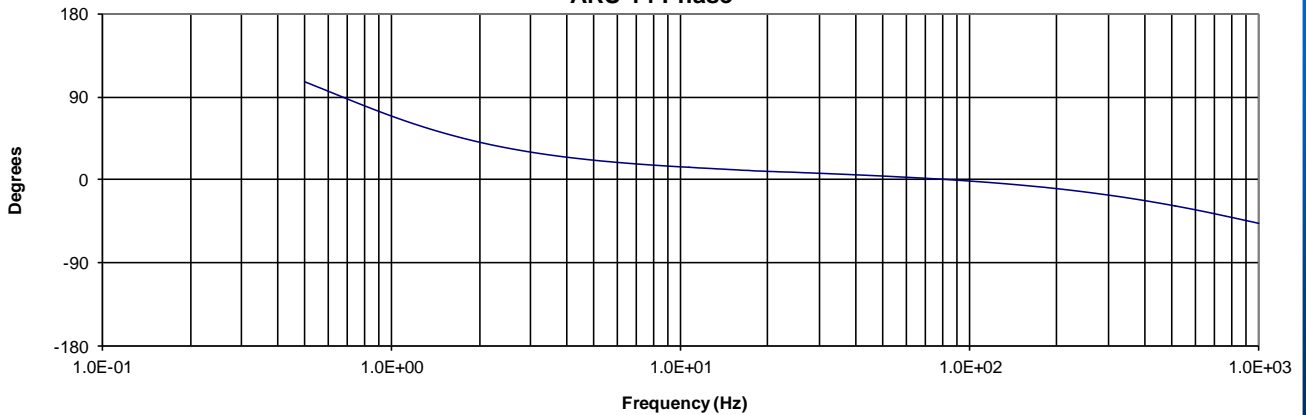
# ARS-14 Product Specifications

## Typical ARS-14 Frequency Response

ARS-14 Magnitude



ARS-14 Phase



### Performance / Electrical

ARS-14 Range <sup>1</sup>	± 0.5 radians/sec
ARS-14 Scale Factor <sup>2</sup>	20 Volt/(rad/sec)
Bandwidth, -3dB in testing	<2 to 1,000 Hz
Cross-axis Angular Error	< 2 %
Linear Acceleration Sensitivity <sup>3</sup>	1 x 10 <sup>-6</sup> radians/g
Noise Equivalent Rate <sup>4</sup>	<5 x 10 <sup>-6</sup> radians/sec rms
Noise Equivalent Angle <sup>4</sup>	<50 x 10 <sup>-9</sup> radians rms
Non-linearity	< 0.25 %
Temperature Coefficient <sup>5</sup>	< 0.3 % Scale Factor / °C
Power Dissipation	< 0.2 Watts
Output Impedance	< 100 Ohms
Grounding <sup>6</sup>	Case isolated from signal common by 1MΩ minimum

### Wiring

ARS-14 Pin Out ITT, MDM-9S MIL-83513		
Pin	Std. Color	Connection
1	Black	Temp - <sup>7</sup>
2	Brown	Temp + <sup>7</sup>
3	Red	Power/Signal Ground
4	Orange	Signal Out
5	Yellow	N/C
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

#### Notes:

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

Specifications are subject to change without notice.