

ARS-06 & 06S MHD Angular Rate Sensor Arrays

The ARS-06 is a popular addition to our lineup of angular rate sensors. The ARS-06 is designed to give performance similar to the ARS-01 in a smaller and less expensive package. The ARS-06 is available in two standard models: the ARS-06 and the ARS-06S. The frequency response of the ARS-06 products comply with SAE J-211 Class 1000 frequency response specifications.

3-Axis and 6-Axis Packages are 1.02 inches high and 2.1 inches on the diagonal. They're small enough to fit inside the 12 month CRABI dummy head.

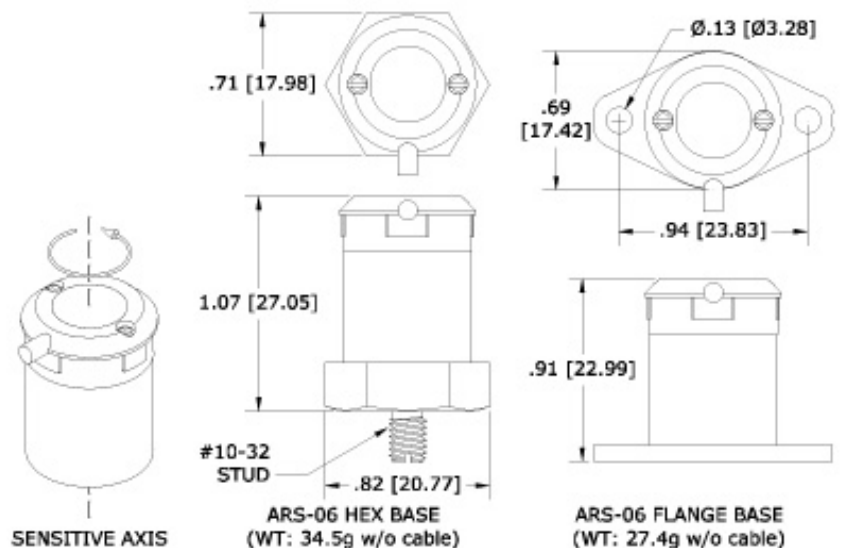
The **ARS-06** and **ARS-06S** require use of the CA-06 cable assembly.



ARS-06 & 06S MHD Angular Rate Sensor

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
- Hermetically sealed units
- Low power consumption
- Low cross axis angular sensitivity
- Low linear acceleration sensitivity
- Integral electronics/low noise
- Three mounting options
- 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-06 & 06S MHD Angular Rate Sensor

Dynamic

ARS-06 Range ¹	± 200 radian/sec (± 11,500 degree/sec)
ARS-06S Range ²	± 200 radian/sec (± 11,500 degree/sec)
ARS-06 Scale Factor ³	50 mV/radian/sec (0.87 mV/degree/sec)
ARS-06S Scale Factor ³	6.5 mV/radian/sec (0.11 mV/degree/sec)
Bandwidth ⁴	0.38 to 1000 Hz
Cross-axis Angular Error	< 2 %
Linear Acceleration Sensitivity	< 0.005 radians/sec/g (<0.3 degrees/sec/g)
ARS-06 Voltage Noise PSD ⁵	1.1 x 10 ⁻¹⁰ V ² /Hz
ARS-06S Voltage Noise PSD ⁵	1.5 x 10 ⁻⁹ V ² /Hz
ARS-06 Noise Equivalent Angle	< 80 microradians (rms)
ARS-06S Noise Equivalent Angle	< 2.5 milliradians (rms)
Non-linearity	< 0.1 %
Temperature Coefficient ⁶	< 0.05 % Scale Factor / °C

Electrical

Power Dissipation	< 0.3 Watts
Output Impedance	< 100 Ohms
Grounding	Base isolated from signal return

Wiring

ARS-06 (requires CA-06 cable assembly)

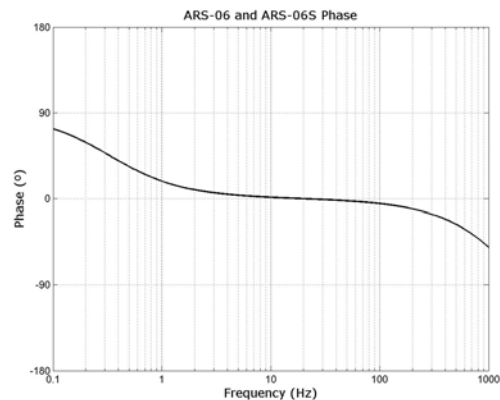
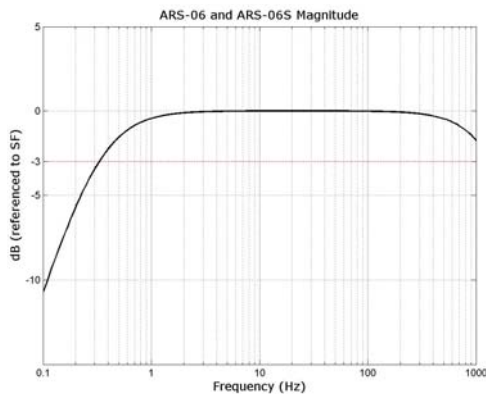
Red Lead.(Pin 1)	+Power (+5 Vdc to +15 Vdc)
Black Lead (Pin 2)	Power and Signal Common (0 Vdc)
White Lead (Pin 3)	-Power (-5 Vdc to -15 Vdc)
Yellow Lead.(Pin 5)	Signal

ARS-06S (requires CA-06 cable assembly)

Red Lead	+Power (+5 Vdc to +20 Vdc)
Black Lead	Power and Signal Common
White Lead	Power and Signal Common
Yellow Lead.	Signal

Environmental

Temperature – operating	-20 °C to +50 °C (-4 to +122 °F)
Temperature - Non-operating	-20 °C to +50 °C (-4 to +122 °F)
Humidity	Unaffected - Hermetically sealed unit
Linear Acceleration, Max. Operating ⁷	TBD g any axis
Linear Acceleration, Max. Survivable ⁷	TBD g any axis



Notes:

1. Based on a ± 10V output voltage swing.
2. Based on a ± 1.3V output voltage swing.
3. Measured @ 10 Hz.
4. The standard frequency response of MHD sensors can be extended significantly by the use of digital filtering in post processing of signal data as covered in ATA Sensors' application note AN-01.
5. Power spectral density flat to angular velocity over specified bandwidth.
6. Percent change in Scale Factor per °C @ 100 Hz.
7. Peak, 100 Hz half sine.