

ARS-04E & 04R MHD Angular Rate Sensor

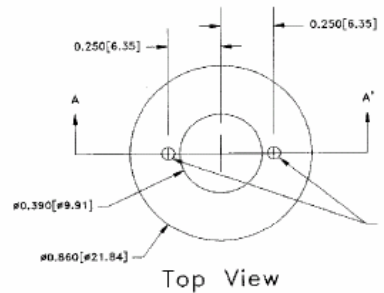
The ARS-04 is our smallest, lightest and least expensive angular rate sensor. Designed for automotive and aerospace applications, the ARS-04 has become a standard component of our Dynacube™ products. Small enough to be mounted in hand-held instruments, within the vertebrae, arms and legs of anthropomorphic test devices, the ARS-04 is available in two standard models. The ARS-04E has fully encapsulated electronics. The ARS-04R is supplied with an exposed electronics board for integration into higher level customer assemblies before encapsulation. With our optional ILC units, single voltage input and acceleration or amplified outputs are available.

The ARS-04E and ARS-04R require use of the CA-01A cable assembly.

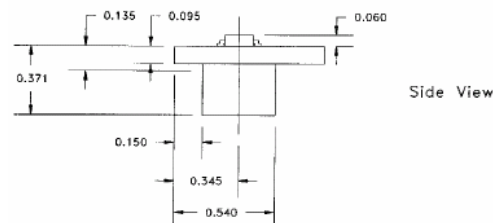
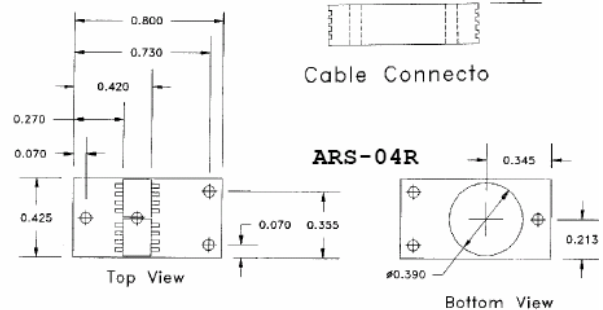
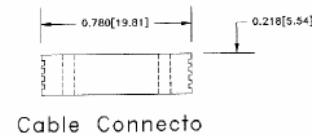
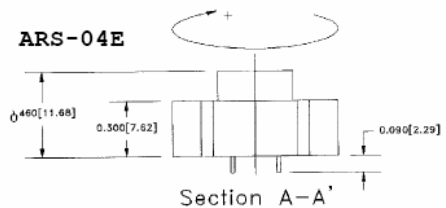
Custom scale factors and ranges are available.

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.



ARS-04E & 04R
MHD Angular Rate Sensor



Product Specifications

ARS-04E & 04R MHD Angular Rate Sensor

Dynamic

ARS-04 Range ¹	± 100 radian/sec (± 5,750 degree/sec)
Sensitivity ²	100 mv/radian/sec (1.7 mv/degree/sec)
Bandwidth	0.5 to 1000 Hz
Cross-axis Angular Error	<2%
Linear Acceleration Sensitivity	< 0.005 radians/sec/g (<0.5 degrees/sec/g)
Voltage Noise PSD ³	1.1 x 10 ⁻⁸ V ² /Hz
Noise Equivalent Angle	< 400 microradians (rms)
Non-linearity	< 0.1 %
Temperature Coefficient ⁴	< 0.001 % Scale Factor/°C

Electrical

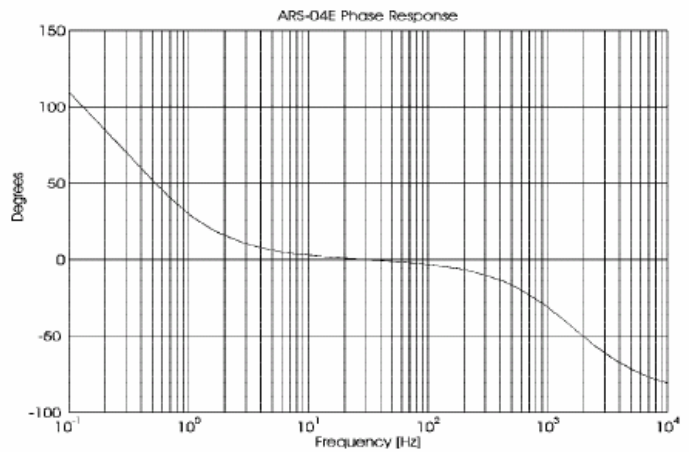
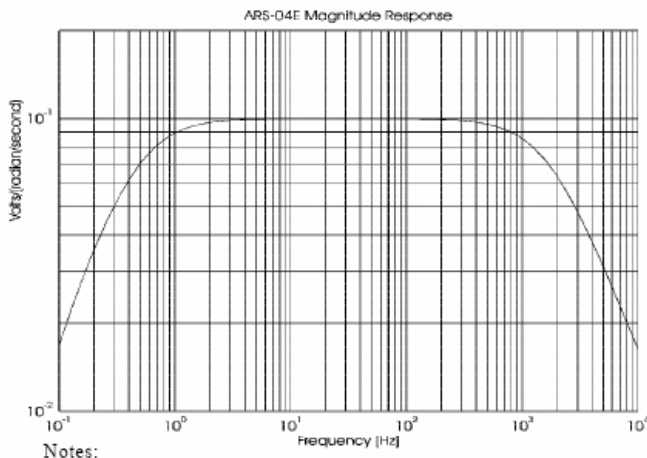
Excitation Voltage	± 5.0 to ± 15.0 Vdc
Power Dissipation	< 0.3 Watts
Output Impedance	< 100 Ohms

Mechanical

Diameter	21.9 mm (0.86 inches)
Height	17.3 mm (0.70 inches)
Weight	7 gm (0.25 oz.)
Case Material	Stainless Steel 430
Mounting	0-80 x 5/8 screw (2)

Environmental

Temperature – operating	-35 to +60 °C (-31 to +140 °F)
Temperature - Non-operating	-35 to +100 °C (-31 to +212 °F)
Linear Acceleration ⁵ , Max. Operating	500 g any axis
Linear Acceleration ⁵ , Max. Survivable	800 g any axis



- Notes:
1. Peak to peak @ ± Vdc input.
 2. Measured @ 10 Hz.
 3. Power spectral density flat to angular velocity over specified bandwidth.

4. Percent change in Scale Factor @ 100 Hz per °C
5. Peak, 100 HZ half sine.