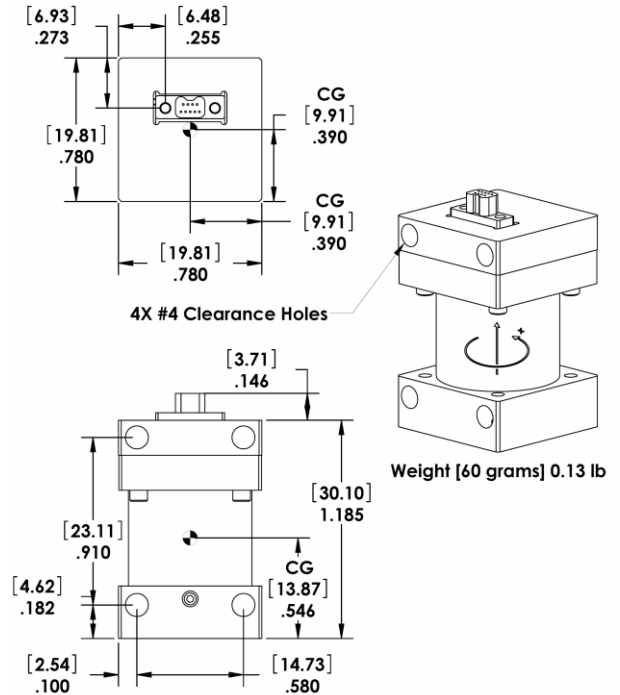
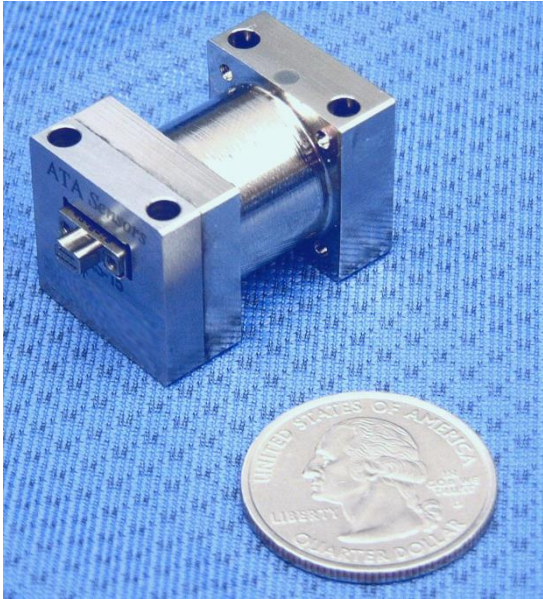


# Installation and Operation Manual

## ARS-15 MHD Angular Rate Sensor



## Handling



The ARS contains sensitive electronic devices. Observe proper ESD handling procedures.

### Cleaning

The ARS was cleaned at the manufacturer before shipment. If necessary, the ARS can be re-cleaned with a lint-free cloth and 2-Propanol.

### Unpacking

Unpack the ARS at a clean and static-safe workstation. The handler should be properly grounded with a wrist strap.

### Storage

The ARS should be stored in a static dissipative or conductive container. Do not exceed the storage temperature ranges listed on the data sheet.

### Transporting

The ARS should only be transported in a static dissipative or conductive container. Remove the ARS from the container only at a clean and static-safe workstation. Take care not to drop the ARS because sharp impacts can cause damage.

# ATA

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## Electrical Connection

The ARS-15 has an AirBorn connector, P/N NK-2G2-009-135-TH00. The mating connection is the NM-222-009-261-JCAD pig-tail connector.

ARS-15 Pinout		
Pin	Color	Connection
1	Black	N/C
2	Brown	Ground
3	Red	Ground
4	Orange	Signal Out
5	Yellow	Ground
6	Green	Positive Supply Voltage (+5 VDC to +18 VDC)
7	Blue	Negative Supply Voltage (-5 VDC to -18)
8	Violet	Ground
9	Gray	Case

### Pin 1, No Connection

**Pin 2, 3, 5, 8, Ground-** The supply voltages are referenced to these pins. The rate signal output is also referenced to these pins.

**Pin 4, Signal Out-** This signal is an analog voltage proportional to angular rate. The scale factor and bode plots are given in the calibration test data sheet supplied with each sensor.

**Pin 6, Positive Supply Voltage-** The ARS-15 will operate on any positive supply voltage from +5 VDC to +18VDC. The positive and negative supply voltages should be matched in magnitude. For example, +/-5 VDC or +/-10 VDC but not +5/-10 VDC.



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**Pin 7, Negative Supply Voltage-** The ARS-15 will operate on any negative supply voltage from -5 VDC to -18VDC. The positive and negative supply voltages should be matched in magnitude. For example, +/-5 VDC or +/-10 VDC but not +5/-10 VDC.

**Pin 9, Case-** This pin is shorted to the ARS-15 case. It is not the same as pins 2, 3, 5, and 8. There is a 1 M-ohm resistor in parallel with a 1 $\mu$ F capacitor from this pin to ground (pins 2, 3, 5, and 8). This prevents excessive charge from building up on the case and keeps the case potential close to 0V. If there is excessive noise on the rate signal, shorting this pin to ground may alleviate the problem.

## Health and Status

When power is applied to the ARS, the signal voltage will swing between its maximum output voltages before settling out at the null. The signal voltage should settle to its final null value within 2-3 minutes after a cold power-on. When the ARS-15 is quiescent (no motion), the signal voltage should remain at its null. Note that very small motions are detectable by the ARS and can cause the signal voltage to change. The temperature sensor can be used to monitor the temperature inside the ARS-15 and may also be used to correct the signal output based on temperature.

## Mounting

The ARS-15 is mounted using four #4 screws. See drawing for the mounting pattern. The user should ensure the screws are sufficient for dynamic loading conditions.

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 subject to change without notice.



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