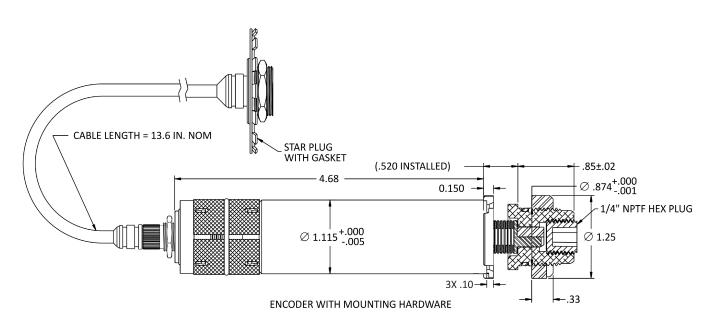


## Vehicle Motion Sensor (VMS III)

## **ENCODER DATA SHEET**

Outline Dwg. No. 122-0022-01



### Features:

- VMS Compatible with M119A2 aTALIN
- 32-CPT Forward and Reverse
- Low Power Operation
- High Mechanical Operating Speed
- Integral Shaft Coupling
- Light Weight
- High Reliability
- High Speed Output
- Qualified for Tactical Environments
- Built-In Test

### Heritage:

- Vehicle Motion Sensor (VMS-3) for the M119A2
- VMS-2 Korea Chun-ma (Pegasus) and US SLAMRAAM
- VMS-1 US M109 Paladin Howitzer

### **Description:**

The VMS-3 (Vehicle Motion Sensor) Encoder is a modification of BEI's standard military incremental encoder models. The encoder is designed to operate completely enclosed within the axle of the M119A2, 105mm towed Howitzer gun. The VMS provides the aTALIN (Artillery Tactical Advanced Land Inertial Navigator) system with fine position sensed data over a digital differential input/output line using TIA/EIA-422 line drivers and receivers. Feasible modifications for other military programs include mechanical interface, I/O format, parts screening levels, specific environmental qualifications and higher resolution up to 64 CPT.

### Approved for general release

# Vehicle Motion Sensor (VMSIII) ENCODER DATA SHEET

## **Summary of Specifications:**

Mechanical:	
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Dimensions	See Outline	Input Power	2.5 Watts Max.
Base Material	Stainless Steel	Input Voltage	28 VDC. Nom.
Weight	5.5 lb max.	Input/Output	Digital Differential
Torque	2.0 oz -in max.	Line Drivers/Receivers	TIA/EIA-422

**Electrical:** 

### **Performance:**

Reliability with INU		10,000 Hrs
Operation	Forward	and Reverse
Parts	Extended T	emp. Military
Speed Ope	rating	1,400 RPM

## **Desigh Performance**:

Altitude

Operational	15,000 ft	
Non-operational 40,000		
Humidity, Rain, Dust, Salt Fog, Sand,		
Water Wash-Down, etc.		

Environment:	
Temperature	
Operating	-46 to 71 deg. C
Nonoperating	g -51 to 71 deg. C
Vibration	
Random	7.7 GRMS
Shock	3000 Live Fire Events
Lightning	Near Strike (Cloud to Ground)
Immersion	1.5 meters for 30 minutes

### **Qualification Test Results on File:**

- Functional
- Thermal Cycles
- Over/Under Voltage Test



### Notes:

- 1. Specifications are program specific. Consult factory for potential modifications.
- 2. Additional environmental tests to be conducted by the customer at the next higher level assembly.

Specifications Subject to Change Without Notice