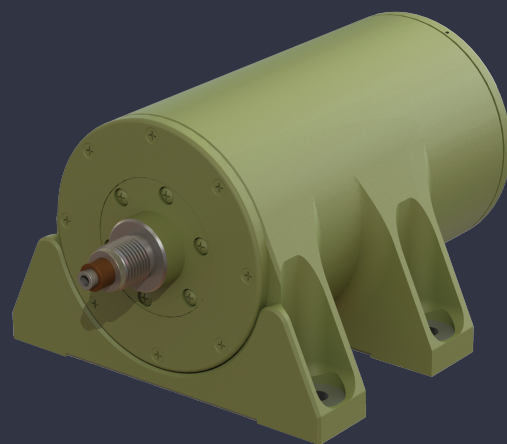


# VEHICLE MOTION SENSOR (VMS I)



## FEATURES:

- Converts vehicle odometer cable shaft revolutions into pulse trains representing forward and reverse vehicle motion
- Performs Built-In-Test (BIT) of itself when commanded by the VRU
- VMS-I is radiation and HEMP-hardened
- Data transfer to the Vehicle Reference Unit (VRU), via EIA Standard RS-422 balanced differential voltage circuits

The VMS-I is a device which converts shaft rotation into distance traveled. This unit comprises an optical encoder assembly that is integrally mounted onto a through shaft. The shaft is supported by ball bearings that are mounted in the ruggedized housing. A provision is made to mount an odometer sensing cable to one end of the unit. Shaft rotation is detected by light passed through a metal code disk and received by photodiodes. The output from the photodiodes are converted to logic level square waves, whose frequency is a multiple of the shaft speed. The output is used by Land Navigation Systems to correct inertial reference signals. This device is the first in a family of Vehicle Motion Sensor (VMS) products.

## SYSTEM SPECIFICATIONS\*:

Size	13.7 cm x 9.7 cm x 20.3 cm (5.4 in x 3.8 in x 6.0 in)
Weight	< 2.8 kg (6 lb.)
Power	+ 5 VDC $\pm$ 5% at 2.5 watts
Input Speed	0 - 1400 RPM, forward or reverse
Operating Temperature	-46°C to +93°C
Reliability	> 20,000 hr MTBF
Scale Factor	32 pulses per shaft revolution

\* Specifications per MIL-PRF-71196

