RaceGrade

M 6-APX-003

Document Number		RG_SPEC-0065	
Title		Variable Reluctance (Magnetic) Speed Sensor	
Revision	**Date**	**Prepared By**	**Change History**
2	05/29/2017	Chris Moritz	Torque Spec Added

Introduction

The M 6-APX-003 is a variable reluctance, or magnetic, speed sensor. It outputs a sine wave whose amplitude increases with speed, and should be triggered on a ferrous tooth-it does not require a magnet. These sensors do not require pullup resistors and are suitable for either measuring wheel speed or as engine speed/synchronization sensors. If used as wheel speed sensors in a Hundred Series ECU (M400, M600, M800), an M84, or on the Digital input of an E888/816 then a DMC-D (Dual Mag Converter, version D) is required. M1 ECUs, Dash Loggers, and SVIMs do not require the converter.

Specifications (on 5" wheel, 20 teeth, 0.030 air gap)

Air Gap	0.020 to 0.040 in
Minimum Rotational Speed	100 RPM
Output Polarity	Falling Edge
Operating Temp	-55 to 107 °C
Voltage Levels	0.8V at 100 RPM, 12.8 V at 1910 RPM, 30V Max
Install Torque	11 to 15 ft-lb

When the sensor is used for measuring wheel speed, it will not read from zero if set up as above. To lower the minimum speed, increase the number of teeth, the size of the wheel, and/or decrease the air gap. For any application where the setup is different than above, take an input capture or measure the waveform with an oscilloscope to determine voltage levels.

Wiring Information