

Rotary Speed Sensor Module

NAL MRA 14xx Series Magnetic Sensor

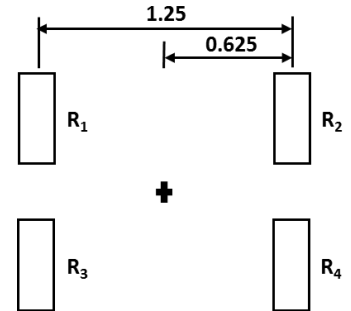
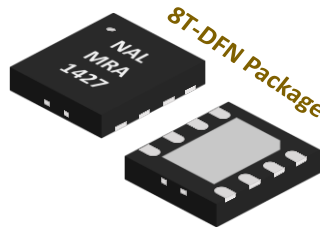
Features

- ◆ Giant magneto resistance based technology
- ◆ High sensitivity (0.1 %/ G)
- ◆ 0 to ± 100 G operation range
- ◆ Omni-polar operation
- ◆ DC (0 Hz) to >1 MHz operation
- ◆ Low power consumption (0.8 mA @ 5V)
- ◆ High thermal stability (~ 130 °C)
- ◆ Miniature size (3 mm x 3 mm)
- ◆ Elemental gap: 0.75 mm to 2.0 mm



Spur Gear Wheel

Magnetic Pole Wheel

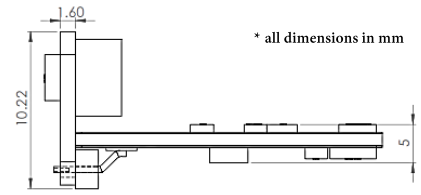
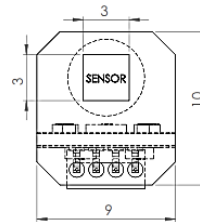


All dimensions in mm
Elemental gap

Speed Sensor Module (SM-14xx-FS/SS)

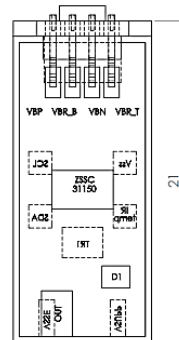
Features

- ◆ NAL MRA 14xx series sensor with automotive grade sensor signal conditioner chip (ZMDI ZSC31150)
- ◆ Operation temperature: -40 to +125°C
- ◆ Supply voltage: 4.5 to 5.5 V
- ◆ Output options: 0 – 5 V (Open collector)
- ◆ Frequency range: 2.2 kHz
- ◆ Maximum air gap : up to 4 mm (depending on gear geometry)
- ◆ Programming interfaces: I²C, OWI (one-wire interface via output pin)
- ◆ Digital compensation of sensor offset, sensitivity, temperature drift, and nonlinearity
- ◆ Excellent EMC/ESD robustness, high voltage (33 V) reverse polarity and short circuit protection
- ◆ Digital one-pass calibration: quick and precise
- ◆ Safety and diagnostic functions



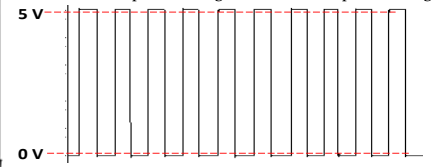
* all dimensions in mm

Mounting Types



Gear Tooth Speed Sensing

Pole Wheel Speed Sensing



Applications

- ◆ Gear tooth speed sensing
- ◆ Linear and rotary speed sensing
- ◆ Linear and rotary position sensing

Samples for both IC and speed sensor modules are available on stock

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