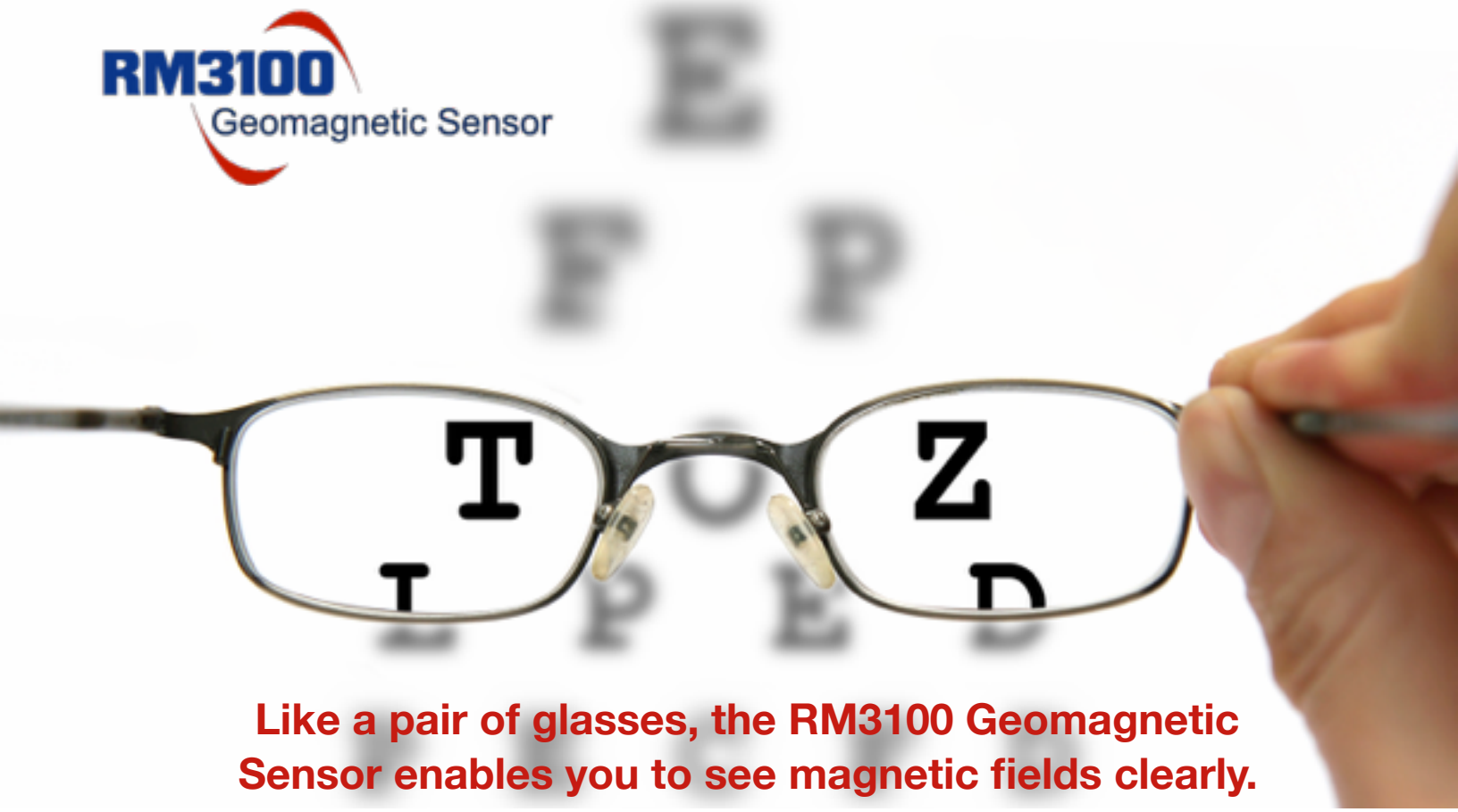
RM3100 Geomagnetic Sensor



Like a pair of glasses, the RM3100 Geomagnetic Sensor enables you to see magnetic fields clearly.

The RM3100 Geomagnetic Sensor is the highest performance sensor in its class with over 10 times better resolution and over 20 times lower noise than the leading Hall Effect sensor. It makes precise magnetic field measurements, which enables accurate calculation of heading and orientation.

The earth's magnetic field provides absolute reference for heading measurements and accurate motion tracking. Geomagnetic sensors are used to measure the earth's magnetic field; however, in real world conditions, the earth's magnetic field is often distorted by other surrounding fields. System components such as batteries, shielding materials, or motors will distort the geomagnetic field near the sensors. An additional design challenge is the changing magnetic environment that temporarily distorts the field like metal parts in furniture, a passing car, or nearby cell phones and computers. Geomagnetic sensors must first be able to see the different magnetic fields in order for the designer to separate earth's magnetic fields and compensate for the distortions.

PNI Sensor's RM3100 eliminates any "blur" in your magnetic field measurements making distortion error correction a snap, and ultimately allowing you to easily and accurately calculate absolute orientation and heading.

PNI SENSOR CORPORATION

RM3100 Geomagnetic Sensor

A leader in its industry. The RM3100 Geomagnetic Sensor is the top performer, outperforming Hall Effect sensors by orders of magnitude. It is the latest development in PNI Sensor's proprietary **magneto-inductive technology.**

Parameter	Leading Hall Effect Sensor	PNI Sensor's Magneto Inductive Sensor
Sensitivity (nT)	300 nT	13 nT
Noise (nT)	500 nT	15 nT

Operating Specifications

Parameter	Cycle Counts		
	50	100	200
Field Measurement Range	-800 µT to +800 µT		
Noise	30 nT	20 nT	15 nT
Gain @ 3V (LSB/µT)	20 µT	38 µT	75 µT
Linearity over ±200 µT	0.5 % (typical)		
Sensitivity	50 nT	26 nT	13 nT
Max 3-Axis Sample Rate	534 Hz	284 Hz	147 Hz
Current Usage @ 8 Hz, 3 Axes	70 µA	135 µA	260 µA
Circuit Oscillation Frequency	180 kHz		
Bias Resistor (R_B)	121 Ω		
Interface	SPI and I2C		
Operating Temperature Range	-40 C to +85 C		
Size (l x w x h)	Sen XY		6.0 x 2.1 x 2.2 mm
	Sen Z		3.0 x 3.0 x 5.75 mm
	MagI2C		4.0 x 4.0 x 0.75 mm

About PNI

PNI Sensor Corporation is the leader in the exacting science of producing pinpoint heading and orientation technology and algorithms for the consumer, military, scientific and oceanography communities. Building on decades of patented sensor development, PNI offers highly accurate magneto inductive sensor systems and 9-axis sensor fusion technology. Its products are used in consumer electronics, robotics, surveying, navigation and automotive applications across the globe. To learn more, please visit www.pnicorp.com.

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For detailed ordering information and most current specifications, please visit www.pnicorp.com

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