



MOTION SENSORS, INC.

Producing High Quality Solutions Since 1970

786 Pitts Chapel Rd.
Elizabeth City, NC 27909
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Hall Effect Sensors - H Type (oriented)

The Motion Sensors (MSI) H series of sensors is based on Hall Effect sensor technology, which can sense a change in target motion from true zero to 20 KHz. These sensors incorporate a magnet within the sensor, enabling them to sense ferrous metal as well as magnet targets and can be optimized to detect fine as well as large pitch targets. These sensors integrate a preamplifier/signal conditioner within the sensor housing that provides excellent noise immunity and greater transmission capability. They also have a unique circuit design that offers complete protection in the event of connection mis-wiring. The output frequency of these sensors has a square pulse waveform (digital) that directly relates to the number of turbine blades, gear teeth, etc. that have been sensed. These pulses, in turn, can be correlated to determine flow rate, RPM, or velocity.

Product Specifications

In addition to the models specified, MSI can make custom H type Hall Effect sensors in other lengths, diameters, configurations, mounting threads (e.g., metric) as well as with different operating specifications and options like pigtail leads, NPT threads for explosion proof applications, etc. to satisfy special requirements. In addition, for lower cost, high volume applications, MSI manufactures Hall Effect sensors that contain only the Hall Effect element, without special circuitry to guard against incorrect hook-up. These sensors are available with an open collector output and contain reverse polarity protection. If you do not see a sensor that meets your needs, please contact us and we would be happy to make a product that meets your specifications.

Features and Specifications

Input Power:

4.7 to 24 VDC regulated, 15 mA maximum
@ no-load

Reverse polarity protected

Pin Connections:

Pin A (Red): Input Power (+)

Pin B (White): Pulse Output (+)

Pin C (Black): Common (-)

Pulse Output Options:

1. TTL/CMOS:
Fan-out of 5 TTL/CMOS loads
2. Open collector:
Maximum OFF state voltage 24 VDC,
maximum ON current 50 mA
3. Supply tracking:
logic 0: 0.4 VDC
logic 1: $(V_S - 0.2) \times R_L / (R_L + 2200)$



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Physical Features:

Operating temperature:

-40°C to +125°C with connector

-40°C to +105°C with pigtail

NOTE: +150°C also available

Storage temperature:

-40°C to +150°C with connector

-40°C to +105°C with pigtail

Body material:

300 series stainless steel

Encapsulation:

Epoxy potting or hermetically sealed,
welded construction

High Shock and Vibration resistance:

Impact: 100 G's (6 mS, 1/2 sine) min.

Vibration: 20 G's at 2,000 Hz min

Airgap:

Up to 0.100" dependent on target geometry
and sensor construction

Orientation:

Alignment of the sensor to target rotation is required for optimal performance, ensuring proper orientation of the Hall Effect element to the magnetic field.

Interconnection Options:

1. Three (3) pin MIL-C-5015 type connector with gold plated pins, mates with MS3106-10SL-3S
2. Other connectors available upon request
3. Pigtail with wires or cable
4. NPT threaded body with wire or cable pigtail for explosion proof environments

Approvals:

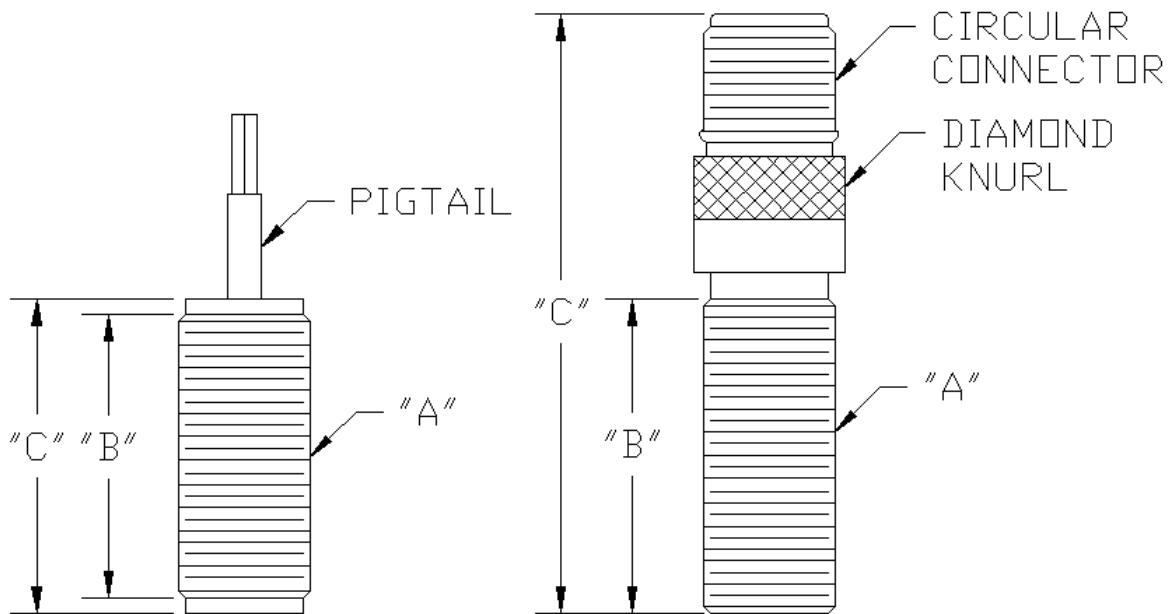
CE compliant to EMC Directive 89/336/EEC for use in residential, commercial, light industrial and heavy industrial environments

Warranty:

Unconditional one (1) year warranty if used within specifications



Dimension Key



Model Number	Mounting Thread (A)	Thread Length (B)	Overall Length (C)	Connection Type	Output (Pulse Range)
H-1	5/8x18	1.43	2.86	connector	open collector
H-2	5/8x18	1.43	2.86	connector	0-5 VDC
H-3	5/8x18	.85	1.00	pigtail	open collector
H-4	5/8x18	.85	1.00	pigtail	0-5 VDC
H-5	5/8x18	1.35	1.50	pigtail	open collector
H-6	5/8x18	1.35	1.50	pigtail	0-5 VDC

Notes:

1. Dimensions in inches
2. Specifications +/- 10%
3. Mounting threads UNF-2A