for INNOVATIVE SENSOR SOLUTIONS

Standard & Custom Sensors, Signal Conditioners and Interface Electronics

SPEED SENSORS

MAGNETIC (Active & Passive)
HALL, GMR (Zero Speed)
RF (Near Zero Speed)
and other

PICKUPS

for:
SPEED • POSITION
PROXIMITY • ACCELERATION
TACHOMETRY • SYNCHRONIZATION
FLOW METERS • DIRECTION

STANDARD TEMP.  to 330° F
HIGH TEMP.  to 1000° F
CRYOGENICS to -450° F

SIGNAL CONDITIONERS

MAGNETIC & RF PREAMPS
FTC/FTV CONVERTERS
SPEED/FLOW SWITCHES
DIRECTIONAL INDICATORS
POWER SUPPLIES & ENCLOSURES
**Typical usage:**
Speed sensing of a ferrous target (gear tooth, blade tip, bolt head, keyway, etc.)
Produces an analog signal with the voltage and frequency proportional to the speed.

**Output Voltage (Vpp):**
See below. Determined against 20 DP gear at a velocity of 1000 IPS with an air gap of 0.005".

**Air Gap:**

**Temp. Ranges:**

**Thread Length:**

<table>
<thead>
<tr>
<th>Coil Type</th>
<th>Temp Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 - 3.0&quot; (25-76mm)</td>
<td>3T or 5HT</td>
</tr>
<tr>
<td>0.65 - 2.5&quot; (17-64mm)</td>
<td>3T or 5HT</td>
</tr>
<tr>
<td>1.0 - 3.0&quot; (25-76mm)</td>
<td>3T or 5HT</td>
</tr>
<tr>
<td>.65 - 2.5&quot; (17-64mm)</td>
<td>3T or 5HT</td>
</tr>
<tr>
<td>1.0 - 3.0&quot; (25-76mm)</td>
<td>3T or 5HT</td>
</tr>
</tbody>
</table>

**Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.**
Thread Length: 0.8 - 3.5" (20-89mm)

Coil Types:
- 2T, 3T, or 5HT

Temp Ranges:
- 2T, 3T, or 5HT

---

5/8"

M16

Thread Length: 0.8 - 10.0" (20-250mm)

Coil Type 1: 70 Ohm; 25mH; 40Vpp (Power)
Coil Type 2: 150 Ohm; 85mH; 50Vpp
Coil Type 3: 230 Ohm; 120mH; 70Vpp
Coil Type 4: 1100 Ohm; 450mH; 180Vpp (Standard)
Coil Type 5: 1500 Ohm; 800mH; 230Vpp
Coil Type 6: 3000 Ohm; 1500mH; 290Vpp (High Output)
Coil Type 7: 5000 Ohm; 2500mH; 330Vpp

Temp Ranges: 2T, 3T, or 5HT

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11/16"

Thread Length: 0.8 - 3.5" (20-89mm)

Coil Type: 4 through 7 (see above)

Temp Ranges: 2T, 3T, or 5HT

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3/4"

M18

Thread Length: 0.9 - 10.0" (23-250mm)

Coil Type 1: 1 through 7 (see above)

Temp Ranges: 2T, 3T, or 5HT

---

8HT

HIGH TEMP

Temp Range: -450° to 850° F (-270° to 454° C)

Available in the same housing configurations shown on this page.

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DUAL OUTPUT

Two coils inside the same housing.
Available in the same housing configurations and temperature ranges shown on this page.
**Typical usage:**
Speed sensing of a ferrous target (gear tooth, blade tip, bolt head, keyway, etc.)

**Supply Voltage (Vs):**
3.5 - 30 Vdc @ 20 mA

**Pulse Out (Vo):**
0 - Vs, 0 - 5V (TTL), 0 - 10V, OC, NPN/PNP

**Frequency Range:**
0 - 30 kHz (Std.), 100 kHz (Spcl)

**Air Gap:**
0.03" Typical, 0.50" Max. depending on target mass and velocity.

**Temp. Ranges:**
2TE: -40° to 240° F (-40° to 120° C)
3TE: -49° to 284° F (-45° to 140° C)

Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.

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### 5/8" Thread Length: 1.25 - 10.0" (32-250mm)
**Temp Ranges:** 2TE or 3TE

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0090</td>
<td>5/8-18 UNF</td>
</tr>
<tr>
<td>0090M</td>
<td>M16 x 1.5</td>
</tr>
<tr>
<td>0090M1</td>
<td>M16 x 1.0</td>
</tr>
<tr>
<td>0091</td>
<td>5/8-18 UNF</td>
</tr>
<tr>
<td>0091M</td>
<td>M16 x 1.5</td>
</tr>
<tr>
<td>0091M1</td>
<td>M16 x 1.0</td>
</tr>
<tr>
<td>0091A</td>
<td>5/8-18 UNF</td>
</tr>
<tr>
<td>0091AM</td>
<td>M16 x 1.5</td>
</tr>
<tr>
<td>0091AM1</td>
<td>M16 x 1.0</td>
</tr>
</tbody>
</table>

### 11/16" Thread Length: 1.1 - 3.5" (28-89mm)
**Temp Ranges:** 2TE or 3TE

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0092</td>
<td>11/16-24 UNEF</td>
</tr>
<tr>
<td>0093</td>
<td>11/16-24 UNEF</td>
</tr>
<tr>
<td>0093X</td>
<td>11/16-24 UNEF</td>
</tr>
</tbody>
</table>

### 3/4" Thread Length: 1.0 - 10.0" (25-250mm)
**Temp Ranges:** 2TE or 3TE

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0094</td>
<td>3/4-16 UNF</td>
</tr>
<tr>
<td>0094B</td>
<td>3/4-20 UNEF</td>
</tr>
<tr>
<td>0094M</td>
<td>M18 x 1.5</td>
</tr>
<tr>
<td>0094M1</td>
<td>M18 x 1.0</td>
</tr>
<tr>
<td>0094L</td>
<td>3/4-16 UNF</td>
</tr>
<tr>
<td>0094LB</td>
<td>3/4-20 UNEF</td>
</tr>
<tr>
<td>0094LM</td>
<td>M18 x 1.5</td>
</tr>
<tr>
<td>0094LM1</td>
<td>M18 x 1.0</td>
</tr>
<tr>
<td>0094X</td>
<td>3/4-16 UNF</td>
</tr>
<tr>
<td>0094XB</td>
<td>3/4-20 UNEF</td>
</tr>
<tr>
<td>0094Y</td>
<td>3/4-16 UNF</td>
</tr>
<tr>
<td>0094YB</td>
<td>3/4-20 UNEF</td>
</tr>
</tbody>
</table>

Optional 5/8" HEX

1/2-14 NPT
SHORT FORM CATALOG
DIGISPEC PREAMPS
For Passive Magnetic Speed Sensors

Typical usage: Amplification of signal from passive magnetic (VRS) sensors. Produces a digital square wave signal with the frequency proportional to the speed.

Supply Voltage (Vs):
0 - Vs, 0 - 5V(TTL), 0 - 10V, OC, NPN/PNP Typically, See product specific sheet

Pulse Out (Vo):
See below

Temp. Range:
See below

Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.

4021
Pulse Amplifier
Multi-output, Noise Canceling
Standard and/or Opto-isolated
Supply Voltage: 6 - 36 VDC
Temp Range: -40° to 185° F (-40° to 85° C)
Fits in Crouse-Hinds GUAL16 or similar enclosure

4022
Pulse Amplifier
with optional output selection
Supply Voltage: 7.5 - 30 VDC
Temp Range: -40° to 221° F (-40° to 105° C)
Fits in Appleton ELBY or similar enclosure (adapter available for Crouse-Hinds GUAL16)

4023
Pulse Amplifier
Supply Voltage: 7.5 - 30 VDC
Temp Range: -40° to 221° F (-40° to 105° C)
Fits in Killark Y-1 or similar enclosure

4024
In-line Pulse Amplifier
with MS Connectors for direct connection to sensor
Supply Voltage: 7.5 - 30 VDC
Temp Range: -40° to 248° F (-40° to 120° C)

4024M
In-line Pulse Amplifier
with MS Connectors for connection to sensor with intermediate cable
Supply Voltage: 7.5 - 30 VDC
Temp Range: -40° to 248° F (-40° to 120° C)

4024H
Ultra Compact In-line Pulse Amplifier
Supply Voltage: 7.5 - 30 VDC
Temp Range: -40° to 248° F (-40° to 120° C)

4029
Digital Opto-Isolated Current Loop
4-20 mA
Supply Voltage: 7.5 - 30 VDC
Temp Range: -40° to 221° F (-40° to 105° C)
Fits in Appleton ELBY or similar enclosure (adapter available for Crouse-Hinds GUAL16)

4033
Directional Preamp
Provides speed and directional data from two mag pickups
Supply Voltage: 7.5 - 30 VDC
Temp Range: -40° to 185° F (-40° to 85° C)
Fits in Crouse-Hinds GUAL16 or similar enclosure
# Signal Converters

For Passive Magnetic or Active Digispec Speed Sensors

**Typical usage:** Signal conversion from passive magnetic (VRS) sensors. Produces a digital square wave signal with the frequency proportional to the speed.

**Supply Voltage (Vs):** See below

**Output (Vo):** Output type varies based on product. See below

**Temp. Range:** See below

Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.

## Frequency to Current / Voltage Converters

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Specifications</th>
</tr>
</thead>
</table>
| 4026  | Frequency to Current / Voltage Converter | 4-20 mA, 10-50 mA, 0-5V, 0-10V  
Supply Voltage: 9 - 38 VDC  
Temp Range: -40° to 160° F (-40° to 70° C)  
Fits in Killark Y-3 or similar enclosure |
| 4027  | Frequency to Current Converter | 4-20 mA  
Supply Voltage: 9 - 36 VDC  
Temp Range: -40° to 221° F (-40° to 105° C)  
Fits in Appleton ELBY or similar enclosure (adapter available for Crouse-Hinds GUAL16) |
| 4028  | Frequency to Voltage Converter | 0-5V or 0-10V  
Supply Voltage: 8 - 36 VDC  
Temp Range: -40° to 221° F (-40° to 105° C)  
Fits in Appleton ELBY or similar enclosure (adapter available for Crouse-Hinds GUAL16) |
| 4052  | Programmable Speed/Flow Switch | Provides a relay output for controlling devices based on input frequency  
Supply Voltage: 6 - 36 VDC  
Temp Range: -40° to 185° F (-40° to 85° C)  
Fits in Crouse-Hinds GUAL16 or similar enclosure |

## Frequency to Current Converters

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Specifications</th>
</tr>
</thead>
</table>
| 4057  | Programmable K-factor scalar, frequency divider or multiplier, and frequency to voltage or current converter. | Supply Voltage: 11 - 26 VDC  
Temp Range: -40° to 170° F (-40° to 70° C)  
Fits in Crouse-Hinds GUAL16 or similar enclosure |

## Frequency to Voltage Converters

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Specifications</th>
</tr>
</thead>
</table>
| 4055  | Programmable K-factor scalar, frequency divider or multiplier, and frequency to voltage or current converter. | Supply Voltage: 11 - 26 VDC  
Temp Range: -40° to 170° F (-40° to 70° C)  
Fits in Crouse-Hinds GUAL16 or similar enclosure |

## Power Supply, Speed Switch, & Temperature Transmitter Accessories

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Specifications</th>
</tr>
</thead>
</table>
| 4100  | Universal Power Supply | Provides a 5V, 12V, or 24V DC power supply from 120V or 240V AC  
Temp Range: -40° to 221° F (-40° to 105° C)  
Provided with or without NEMA type enclosure or external connectors |
| 4052  | Programmable Speed/Flow Switch | Provides a relay output for controlling devices based on input frequency  
Supply Voltage: 6 - 36 VDC  
Temp Range: -40° to 185° F (-40° to 85° C)  
Fits in Crouse-Hinds GUAL16 or similar enclosure |
| 4032  | Temperature to Current Transmitter | 4-20 mA Output  
Supply Voltage: 6.5 - 32 VDC  
Temp Range: -40° to 185° F (-40° to 85° C)  
Fits in Killark Y-3 or similar enclosure |
Typical usage: Low speed sensing of a ferrous target (gear tooth, blade tip, bolt head, keyway, etc.) with no magnetic drag. A RF sensor and matched RF signal conditioner must be used together. Produces a digital square wave signal with the frequency proportional to the speed.

Supply Voltage (Vs): See below
Pulse Out (Vo): 0 - Vs, 0 - 5V(TTL), 0 - 10V, OC, NPN/PNP

Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.

4013 RF Preamplifier
Supply Voltage: 11.5 - 30 VDC
Temp Range: -40° to 221° F (-40° to 105° C)
Fits in Killark Y-1 or similar enclosure

4014 In-line RF Preamplifier
with MS Connectors for direct connection to sensor
Supply Voltage: 11.5 - 30 VDC
Temp Range: -40° to 284° F (-40° to 140° C)

4014M In-line RF Preamplifier
with MS Connectors for connection to sensor with intermediate cable
Supply Voltage: 11.5 - 30 VDC
Temp Range: -40° to 284° F (-40° to 140° C)

4016 Frequency to Current / Voltage Converter
4-20 mA, 10-50 mA, 0-5V, 0-10V
Supply Voltage: 12 - 30 VDC
Temp Range: -40° to 160° F (-40° to 70° C)
Fits in Killark Y-3 or similar enclosure

Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.

Typical usage: Low speed sensing of a ferrous target (gear tooth, blade tip, etc.) with no magnetic drag. Produces a digital square wave signal with the frequency proportional to the speed.

Supply Voltage (Vs): 7 - 30 Vdc @ 10 mA
Frequency Range: 0.5 - 5000 Hz
Temp. Ranges:
- 2TE: -40° to 240° F (-40° to 120° C)
- 3TE: -49° to 284° F (-45° to 140° C)
Air Gap: 0.160” Typical depending on target mass and velocity

Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.
**DIGISPEC HALL EFFECT ZERO SPEED SENSORS**

**Magnet Actuated**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td></td>
<td>Speed or Position sensing of a magnet or magnetic field. Activation options include Uni-polar (south pole only), Omni-polar (both poles), and latching Bi-polar (south pole activate, north pole de-activate). Produces a digital square wave signal with the frequency proportional to the speed.</td>
<td>4.0 - 30 Vdc @ 18 mA</td>
<td>0 - Vs, 0 - 5V(TTL), 0 - 10V, OC, NPN/PNP</td>
<td>0 - 20 kHz (Standard, for precision position applications), up to 100 kHz (for high speed only)</td>
<td>0.16&quot; Typical, 0.50&quot; Max. depending on target mass and velocity.</td>
<td>2TE: -40° to 221° F (-40° to 105° C) 3TE: -40° to 300° F (-40° to 150° C)</td>
</tr>
</tbody>
</table>

| Thread | Temp Ranges | Available with dual output | |
|--------|-------------|---------------------------||
| 3/8"   |              |                           | |
| 1/2"   |              |                           | |

Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.

1/4"

| Thread | Temp Ranges | |
|--------|-------------||
| M6     | 1.0 - 3.0" (25-76mm) | 2TE or 3TE |
| M8     | 1.0 - 3.0" (25-76mm) | |

| Thread | Temp Ranges | |
|--------|-------------||
| 0155A  | 1/4-40 UNS  | |
| 0155AB | 1/4-28 UNF  | 0155M |
| 0155AM | M6 x 0.75   | M6 x 0.75 |
| 0155AM8| M8 x 1.0    | |

| Thread | Temp Ranges | |
|--------|-------------||
| 3/8"   | 0.8 - 6.0" (20-152mm) | 2TE or 3TE |
| M10    | 1.0 - 6.0" (25-152mm) | |

| Thread | Temp Ranges | |
|--------|-------------||
| 0156A  | 3/8-24 UNEF | 0156MK |
| 0156M  | M10 x 1.25  | M10 x 1.25 |
| 0156M1 | M10 x 1.0   | |
| 0156K  | 3/8-24 UNEF | 0156S |
| 0156S  | ø3/8 (9.5mm) | |

| Thread | Temp Ranges | |
|--------|-------------||
| 1/2"   | 1.0 - 6.0" (25-152mm) | 2TE or 3TE |
| M12    | 1.0 - 6.0" (25-152mm) | |

| Thread | Temp Ranges | |
|--------|-------------||
| 0158A  | 1/2-20 UNF  | 0158MK |
| 0158B  | 1/2-32 UN    | 0158MD |
| 0158M  | M12 x 1.0   | M12x1.0 |
| 0158S  | ø1/2 (12.7mm) | 1/2-14 NPT |

CONTINUED...
DIGISPEC HALL EFFECT ZERO SPEED SENSORS
Magnet Actuated

5/8"
Thread Length: 1.1 - 6.0" (28-152mm)
Temp Ranges: 2TE or 3TE

Available with dual output

M16

0160X 5/8-18 UNF
0160Y 5/8-18 UNF

0160 5/8-18 UNF
0160M M16 x 1.5
0160M1 M16 x 1.0

3/4"
Thread Length: 1.0 - 6.0" (25-152mm)
Temp Ranges: 2TE or 3TE

Available with dual output

M18

0163YB 3/4-20 UNEF

0163 3/4-16 UNF
0163B 3/4-20 UNEF
0163M M18 x 1.5
0163M1 M18 x 1.0

DIGISPEC LINEAR/ANGULAR POSITION SENSORS
Magnet Actuated

Typical usage: Position, Rotation, or Angle sensing of a magnet or magnetic field.
Senses continuous variations in a magnetic field and produces a constant voltage proportional to the field strength.

Supply Voltage (Vs): 8.0 - 30 Vdc @ 5 mA
Signal Output (Vo): 0.06 - 4.95 V Typical (2.5 V at zero field strength)
Input Sensitivity: 5 mV / Gauss standard
Frequency Range: 0 - 30 kHz
Air Gap: Depends on field strength (up to 1.0" @ 3000 Gauss)
Temp. Ranges: 2TE: -40° to 221° F (-40° to 105° C)
3TE: -40° to 300° F (-40° to 150° C)

Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.

5/8"
Thread Length: 1.0 - 6.0" (25-152mm)
Temp Ranges: 2TE or 3TE

3/4"
Temp Ranges: 2TE or 3TE

M16

M18

0220 Connector versions
0221 Lead Wire versions
**DIGISPEC HALL EFFECT ZERO SPEED SENSORS**

**Ferrous Target / Gear Actuated**

**Typical usage:** Speed or Position sensing of a ferrous target (gear tooth, blade tip, bolt head, keyway, etc.)

Produces a digital square wave signal with the frequency proportional to the speed.

**Supply Voltage (V(s):** 4.0 - 30 Vdc @ 18 mA

**Pulse Out (Vo):** 0 - Vs, 0 - 5V(TTL), 0 - 10V, OC, NPN/PNP

**Frequency Range:** 0 - 20 kHz

**Air Gap:** 0.050" Typical, 0.25" Max depending on target mass and velocity.

**Temp. Ranges:**
- 2TE: -40° to 221° F (-40° to 105° C)
- 3TE: -40° to 300° F (-40° to 150° C)

---

**Thread Length:**
- 1.0 - 3.0" (25-76mm)
- 0.8 - 6.0" (20-152mm)
- 1.0 - 6.0" (25-152mm)

**Temp Ranges:**
- 2TE or 3TE

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Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.

<table>
<thead>
<tr>
<th>Threads</th>
<th>Temp Ranges</th>
<th>Thread Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>2TE or 3TE</td>
<td>1.0 - 3.0&quot;</td>
</tr>
<tr>
<td>M6</td>
<td>2TE or 3TE</td>
<td>1.0 - 3.0&quot;</td>
</tr>
<tr>
<td>M8</td>
<td>2TE or 3TE</td>
<td>1.0 - 3.0&quot;</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Threads</th>
<th>Temp Ranges</th>
<th>Thread Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8&quot;</td>
<td>2TE or 3TE</td>
<td>0.8 - 6.0&quot;</td>
</tr>
<tr>
<td>M10</td>
<td>2TE or 3TE</td>
<td>0.8 - 6.0&quot;</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Threads</th>
<th>Temp Ranges</th>
<th>Thread Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>2TE or 3TE</td>
<td>1.0 - 6.0&quot;</td>
</tr>
</tbody>
</table>

Available with dual output

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Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.
DIGISPEC HALL EFFECT ZERO SPEED SENSORS

Ferrous Target / Gear Actuated

**SHORT FORM CATALOG**

**DIGISPEC HALL EFFECT ZERO SPEED SENSORS**

**Ferrous Target / Gear Actuated**

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**5/8"**

**Thread Length:** 1.1 - 6.0" (28-152mm)

**Temp Ranges:** 2TE or 3TE

<table>
<thead>
<tr>
<th>Model</th>
<th>Thread</th>
<th>Temp Ranges</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>0169</td>
<td>5/8-18 UNF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0169M</td>
<td>M16 x 1.5</td>
<td></td>
<td>5/8&quot; HEX</td>
</tr>
<tr>
<td>0169M1</td>
<td>M16 x 1.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Available with dual output

---

**3/4"**

**Thread Length:** 1.0 - 6.0" (25-152mm)

**Temp Ranges:** 2TE or 3TE

<table>
<thead>
<tr>
<th>Model</th>
<th>Thread</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>0171</td>
<td>3/4-16 UNF</td>
<td>5/8&quot; HEX</td>
</tr>
<tr>
<td>0171B</td>
<td>3/4-20 UNEF</td>
<td></td>
</tr>
<tr>
<td>0171M</td>
<td>M18 x 1.5</td>
<td></td>
</tr>
<tr>
<td>0171M1</td>
<td>M18 x 1.0</td>
<td></td>
</tr>
</tbody>
</table>

Available with dual output

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**DIRECTIONAL HHFQ ZERO SPEED SENSORS**

**Ferrous Target / Gear Actuated**

**Typical usage:** Speed, Position, or Direction sensing of a ferrous target (gear tooth, blade tip, bolt head, keyway, etc.) Produces two digital square wave signals with the frequency proportional to the speed. Also produces a logic high or low direction signal.

- **Supply Voltage (Vs):** 5.0 - 30 Vdc @ 15 mA
- **Signal Output (Vo):** 0 - Vs, 0 - 5V (TTL), OC, PNP
- **Frequency Range:** 0 - 20 kHz
- **AirGap:** 0.050" Typical, 0.25" Max. depending on target mass and velocity.

Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.

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**5/8", 3/4"**

**Thread Length:** 1.7 - 8.0" (43-203mm)

**Temp Range:** -40° to 255° F (-40° to 125° C)

<table>
<thead>
<tr>
<th>Model</th>
<th>Thread</th>
<th>Directional Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>0170</td>
<td>5/8-18 UNF</td>
<td></td>
</tr>
<tr>
<td>0170M</td>
<td>M16 x 1.5</td>
<td></td>
</tr>
<tr>
<td>0170M1</td>
<td>M16 x 1.0</td>
<td></td>
</tr>
</tbody>
</table>

**5/8", 3/4"**

<table>
<thead>
<tr>
<th>Model</th>
<th>Thread</th>
<th>Directional Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>0171</td>
<td>3/4-16 UNF</td>
<td></td>
</tr>
<tr>
<td>0171B</td>
<td>3/4-20 UNEF</td>
<td></td>
</tr>
<tr>
<td>0171M</td>
<td>M18 x 1.5</td>
<td></td>
</tr>
<tr>
<td>0171M1</td>
<td>M18 x 1.0</td>
<td></td>
</tr>
</tbody>
</table>

Available with dual output

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Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.

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**SHORT FORM CATALOG**

**REV. 3**

**DATE 12-19-2013**
Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed. Please also see Installation Document 85045 or 85045N for requirements and certification details.

Typical usage: Speed sensing of a ferrous target (gear tooth, blade tip, etc.) in a hazardous environment. Produces an analog signal with the voltage and frequency proportional to the speed. Limited to approximately 1 Vpp by internal diode network.

Output Voltage (Vpp): .005 to .015" Typical, .25" max depending on target mass and velocity.

Air Gap: .005 to .015" Typical, .25" max.

Temp. Class & Range: T5: -40° to 185° F (-40° to 85° C) T6: -40° to 149° F (-40° to 65° C)

Certifications: IS40 / IS41: Intrinsically Safe (Class I, Div 1 / Class I, Zone 0) for US and Canada IS40A / IS41A: ATEX Intrinsically Safe (Group II, Category 1G) for European Union N40 / N41: Non-Incendive / Limited Energy (Class I, Div 2 / Class I, Zone 2) for US and Canada and ATEX Limited Energy (Group II, Category 3G) for European Union

Intrinsically Safe and Non-Incendive
Passive Magnetic Speed Sensors

Thread Length: .75 - 13.0" (19-330mm)

1/2-14 NPT
1/2-14 NPT
1" HEX
1/2-14 NPT
1.47" TYP
2.5" TYP
1.9" TYP
1.9" TYP
1.47" TYP

Preamplifier for Passive Magnetic Speed Sensors

IS4021, IS4021A or N4021
Pulse Amplifier
Multi-output, Noise Canceling
Supply Voltage: 7.5 - 30 VDC
Temp Class & Range: T6: -40° to 60°C
Fits in Crouse-Hinds GUAL16 or similar enclosure

IS4027, IS4027A, or N4027
Frequency to Current Converter 4-20 mA
Supply Voltage: 9 - 30 VDC
Temp Class & Range: T6: -40° to 60°C
Fits in Appleton ELBY or similar enclosure (adapter available for Crouse-Hinds GUAL16)

IS4033, IS4033A or N4033
Directional Preamplifier Speed and directional data
Supply Voltage: 7.5 - 30 VDC
Temp Class & Range: T6: -40° to 60°C
Fits in Crouse-Hinds GUAL16 or similar enclosure

IS4028, IS4028A, or N4028
Frequency to Voltage Converter 0-5V or 0-10V
Supply Voltage: 12 - 30 VDC
Temp Class & Range: T6: -40° to 60°C
Fits in Appleton ELBY or similar enclosure (adapter available for Crouse-Hinds GUAL16)

Single channel preamplifier for use in hazardous environments can be found under IS4022, IS4022A, or N4022.
### Typical usage:

- **Speed sensing of a ferrous target (gear tooth, blade tip, etc.) in a hazardous environment.**
- Produces a digital square wave signal with the frequency proportional to the speed.

### Supply Voltage (Vs):

- 8 - 30 Vdc @ 15 mA

### Frequency Range:

- 5 Hz - 10 kHz

### Air Gap:

- .005 to .015" Typical, .25" max. depending on target mass and velocity.

### Temp. Class & Range:

- **T5**: -40° to 185°F (-40° to 85°C)
- **T6**: -40° to 149°F (-40° to 65°C)

### Certifications:

- **IS90 / IS91**: Intrinsically Safe (Class I, Div 1 / Class I, Zone 0) for US and Canada
- **IS90A / IS91A**: ATEX Intrinsically Safe (Group II, Category 1G) for European Union
- **N90 / N91**: Non-Incendive / Limited Energy (Class I, Div 2 / Class I, Zone 2) for US and Canada and ATEX Limited Energy (Group II, Category 3G) for European Union

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### Typical usage:

- **Low speed sensing of a ferrous target (gear tooth, blade tip, etc.) with no magnetic drag.**
- Produces a digital square wave signal with the frequency proportional to the speed.

### Supply Voltage (Vs):

- 8 - 30 Vdc @ 15 mA

### Frequency Range:

- 0.5 - 5000 Hz

### Air Gap:

- .160" Typical depending on target mass and velocity

### Temp. Class & Range:

- **T5**: -40° to 185°F (-40° to 85°C)
- **T6**: -40° to 149°F (-40° to 65°C)

### Certifications:

- Similar to those shown above for IS90, etc. (see spec-sheet for details)
**Typical usage:**
Speed or Position sensing of a magnet or magnetic field in a hazardous environment. Several activation options are available (Uni-polar, Omni-polar, etc).

**Supply Voltage (Vs):**
5 - 30 Vdc @ 15 mA

**Pulse Out (Vo):**
0 - Vs, 0 - 5V (TTL), 0 - 10V, 0 - Vs OC, NPN/PNP

**Frequency Range:**
0 - 20 kHz (Standard, for precision position applications), up to 100 kHz (for high speed only)

**Air Gap:**
0.16" Typical, 0.50" Max. depending on target mass and velocity.

**Temp. Class & Range:**
- T5: -40° to 185° F (-40° to 85° C)
- T6: -40° to 149° F (-40° to 65° C)

**Certifications:**
- IS160 / IS161: Intrinsically Safe (Class I, Div 1 / Class I, Zone 0) for US and Canada
- IS160A / IS161A: ATEX Intrinsically Safe (Group II, Category 1G) for European Union
- N160 / N161: Non-Incendive / Limited Energy (Class I, Div 2 / Class I, Zone 2) for US and Canada and ATEX Limited Energy (Group II, Category 3G) for European Union

Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.

**Position, Rotation, or Angle sensing of a magnet or magnetic field in a hazardous environment. Senses continuous variations in a magnetic field and produces a constant voltage proportional to the field strength.**

**Supply Voltage (Vs):**
8 - 30 Vdc @ 8 mA

**Signal Out (Vo):**
0.06 - 4.95 V Typical (2.5 V at zero field strength)

**Frequency Range:**
0 - 30 kHz

**Air Gap:**
Depends on field strength (up to 1.0" @ 3000 Gauss)

**Temp. Class & Range:**
- T5: -40° to 185° F (-40° to 85° C)
- T6: -40° to 149° F (-40° to 65° C)

**Certifications:**
Similar to those shown above for IS160, etc. (see spec-sheet for details)
**Typical usage:**
Speed or Position sensing of a ferrous target (gear tooth, blade tip, bolt head, keyway, etc.) in a hazardous environment. Produces a digital square wave signal with the frequency proportional to the speed.

**Supply Voltage (Vs):** 5 - 30 Vdc @ 15 mA

**Pulse Out (Vo):** 0 - Vs, 0 - 5V(TTL), 0 - 10V, 0 - Vs OC, NPN/PNP

**Frequency Range:** 0 - 20 kHz

**Air Gap:** 0.050" Typical, 0.25" Max. depending on target mass and velocity.

**Temp. Class & Range:**
- **T5:** -40° to 185° F (-40° to 85° C)
- **T6:** -40° to 149° F (-40° to 65° C)

**Certifications:**
- **IS170 / IS171:** Intrinsically Safe (Class I, Div 1 / Class I, Zone 0) for US and Canada
- **IS170A / IS171A:** ATEX Intrinsically Safe (Group II, Category 1G) for European Union
- **N170 / N171:** Non-Incendive / Limited Energy (Class I, Div 2 / Class I, Zone 2) for US and Canada and ATEX Limited Energy (Group II, Category 3G) for European Union

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