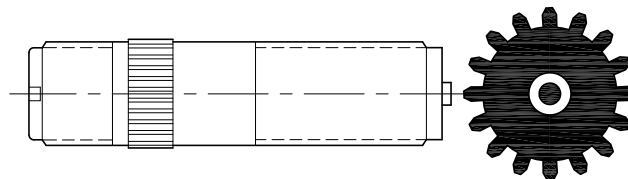


SPECTEC *for INNOVATIVE SENSOR SOLUTIONS*

*Standard & Custom Sensors, Signal Conditioners
and Interface Electronics*



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

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SPECTEC

THUNDERBIRD INTERNATIONAL CORPORATION

P.O. Box 360 • Emigrant, MT 59027

406-333-4967 • FAX: 406-333-4259

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ISO 9001 Registered

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.
Inductive (MI) type sensors for magnetic targets are available in 5/8 and larger housing styles.

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: **M VRS Type:** .005 to .015" Typical, .25" max. depending on target mass and velocity.
MI Inductive Type: 1" max. depending on magnetic field strength and velocity.

Temp. Ranges: **2T:** -100° to 250° F (-73° to 120° C)
3T: -150° to 330° F (-101° to 165° C)
5HT: -450° to 450° F (-270° to 232° C)
8HT: -450° to 850° F (-270° to 454° C) (see bottom of next page)

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

3/16" Thread Length: .65 - 2.5" (17-64mm)
M5 Coil Type 1: 100 Ohm; 16mH; 6Vpp
Temp Ranges: 3T or 5HT

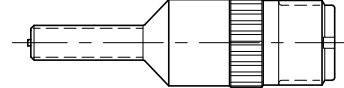
0002 10-32 UNF
0002M M5 x 0.5
0002S ø3/16 (4.7mm)



1/4" Thread Length: 1.0 - 3.0" (25-76mm)
M6 Coil Type 1: 100 Ohm; 10 mH; 6 Vpp
Coil Type 2: 160 Ohm; 14 mH; 12 Vpp
M8 Temp Ranges: 3T or 5HT

0004A 1/4-40 UNS
0004AB 1/4-28 UNF
0004AM M6 x 0.75
0004AM8 M8 x 1.0
0004S ø1/4 (6.4mm)
0004S8 ø5/16 (8 mm)

0005 1/4-40 UNS
0005B 1/4-28 UNF
0005M M6 x 0.75



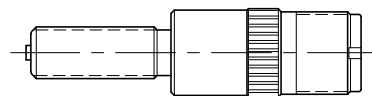
0004 1/4-40 UNS
0004B 1/4-28 UNF
0004M M6 x 0.75
0004H 1/4-40 UNS
0004HB 1/4-28 UNF
0004HM M6 x 0.75



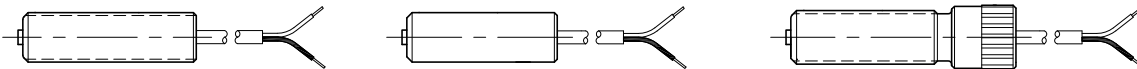
3/8" Thread Length: .8 - 5.0" (20-127mm)
M10 Coil Type 1: 100 Ohm; 10 mH; 25 Vpp
Coil Type 2: 230 Ohm; 40 mH; 70 Vpp
Coil Type 3: 650 Ohm; 120 mH; 85 Vpp
Temp Ranges: 2T, 3T, or 5HT

0008 3/8-24 UNEF
0008M M10 x 1.25
0008M1 M10 x 1.0
0008S ø3/8 (9.5mm)

0009 3/8-24 UNEF
0009M M10 x 1.25



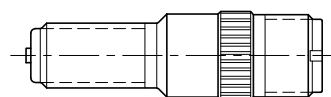
0007 3/8-24 UNEF
0007M M10 x 1.25



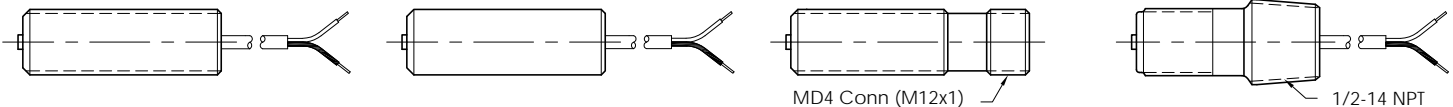
1/2" Thread Length: 1.0 - 6.0" (25-152mm)
M12 Coil Type 1: 140 Ohm; 20 mH; 30 Vpp
Coil Type 3: 650 Ohm; 160 mH; 85 Vpp
Coil Type 5: 1800 Ohm; 800 mH; 230 Vpp
Temp Ranges: 2T, 3T, or 5HT

0010A 1/2-20 UNF
0010B 1/2-32 UN
0010M M12 x 1.0
0010S ø1/2 (13mm)

0011 1/2-20 UNF
0011M M12 x 1.0



0011MD M12 x 1.0
0010X 1/2-20 UNF



MD4 Conn (M12x1)

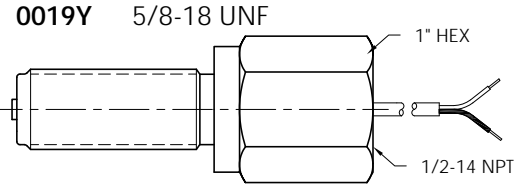
1/2-14 NPT

CONTINUED...

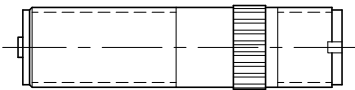
Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.

...CONTINUED

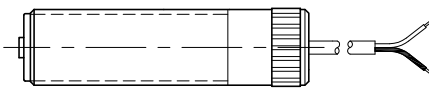
5/8" Thread Length: .8 - 10.0" (20-250mm)
M16 Coil Type 1: 70 Ohm; 25mH; 40Vpp (Power)
 Coil Type 2: 150 Ohm; 85mH; 50Vpp
 Coil Type 3: 230 Ohm; 120mH; 70Vpp
 Coil Type 4: 1100 Ohm; 450mH; 180Vpp (Standard)
 Coil Type 5: 1500 Ohm; 800mH; 230Vpp
 Coil Type 6: 3000 Ohm; 1500mH; 290Vpp (High Output)
 Coil Type 7: 5000 Ohm; 2500mH; 330Vpp
 Temp Ranges: 2T, 3T, or 5HT



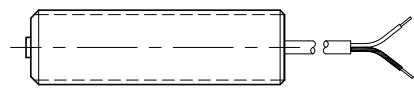
0015 5/8-18 UNF
0015M M16 x 1.5
0015M1 M16 x 1.0



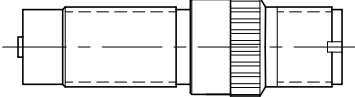
0017 5/8-18 UNF
0017M M16 x 1.5
0017M1 M16 x 1.0



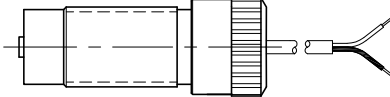
0019 5/8-18 UNF
0019M M16 x 1.5
0019M1 M16 x 1.0



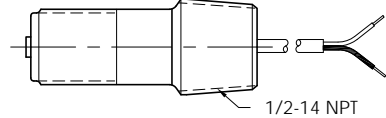
0014 5/8-18 UNF



0018B 5/8-18 UNF



0019X 5/8-18 UNF

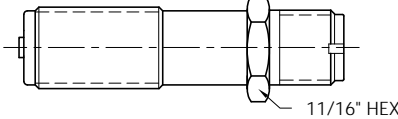


11/16" Thread Length: .8 - 3.5" (20-89mm)
 Coil Types: 4 through 7 (see above)
 Temp Ranges: 2T, 3T, or 5HT

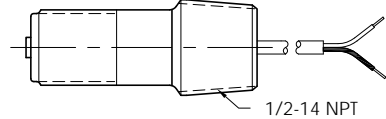
0026 11/16-24 UNEF



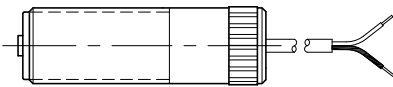
0026H 11/16-24 UNEF



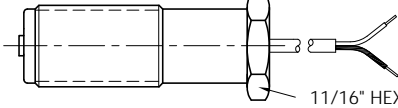
0033 11/16-24 UNEF



0027 11/16-24 UNEF

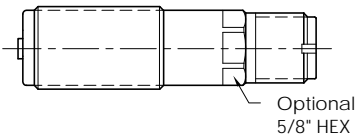


0027H 11/16-24 UNEF

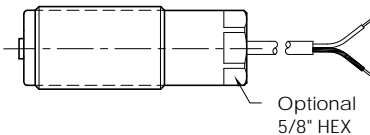


3/4" Thread Length: .9 - 10.0" (23-250mm)
M18 Coil Types: 1 through 7 (see above)
 Temp Ranges: 2T, 3T, or 5HT

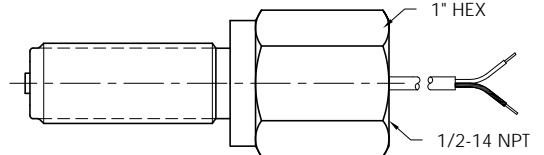
0030 3/4-16 UNF
0030B 3/4-20 UNEF
0030M M18 x 1.5
0030M1 M18 x 1.0



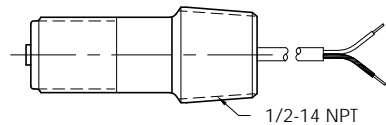
0029 3/4-16 UNF
0029B 3/4-20 UNEF
0029M M18 x 1.5
0029M1 M18 x 1.0



0038 3/4-16 UNF
0038B 3/4-20 UNEF



0035 3/4-16 UNF
0035B 3/4-20 UNEF



8HT HIGH TEMP Temp Range: -450° to 850° F (-270° to 454° C)
 Available in the same housing configurations shown on this page.

0024 Connector versions
0025 Lead Wire versions

DUAL OUTPUT

Two coils inside the same housing. Available in the same housing configurations and temperature ranges shown on this page.

0021 Connector versions
0022 Lead Wire versions

Typical usage: Speed 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 (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)

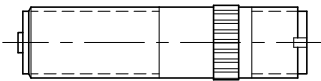
Air Gap: 0.03" Typical, 0.50" Max. depending on target mass and velocity.
Temp. Ranges: **2TE:** -40° to 240° F (-40° to 120° C)
3TE: -49° to 284° F (-45° to 140° C)

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

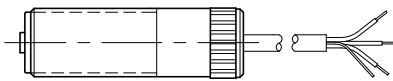
5/8" Thread Length: 1.25 - 10.0" (32-250mm)
Temp Ranges: 2TE or 3TE

M16

0090 5/8-18 UNF
0090M M16 x 1.5
0090M1 M16 x 1.0



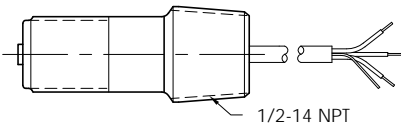
0091 5/8-18 UNF
0091M M16 x 1.5
0091M1 M16 x 1.0



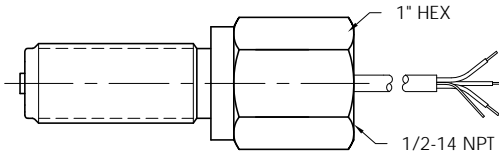
0091A 5/8-18 UNF
0091AM M16 x 1.5
0091AM1 M16 x 1.0



0091X 5/8-18 UNF

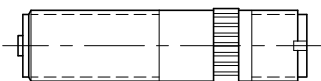


0091Y 5/8-18 UNF

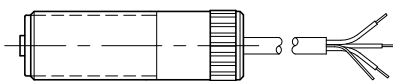


11/16" Thread Length: 1.1 - 3.5" (28-89mm)
Temp Ranges: 2TE or 3TE

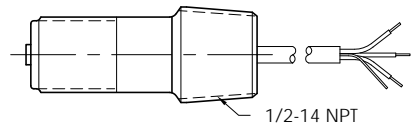
0092 11/16-24 UNEF



0093 11/16-24 UNEF



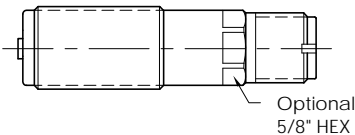
0093X 11/16-24 UNEF



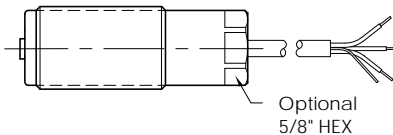
3/4" Thread Length: 1.0 - 10.0" (25-250mm)
Temp Ranges: 2TE or 3TE

M18

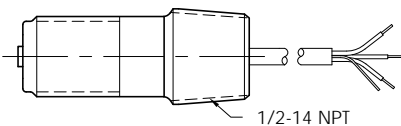
0094 3/4-16 UNF
0094B 3/4-20 UNEF
0094M M18 x 1.5
0094M1 M18 x 1.0



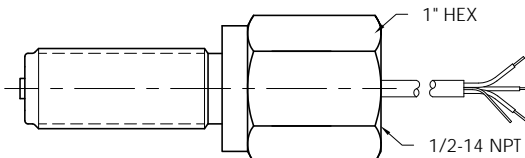
0094L 3/4-16 UNF
0094LB 3/4-20 UNEF
0094LM M18 x 1.5
0094LM1 M18 x 1.0



0094X 3/4-16 UNF
0094XB 3/4-20 UNEF



0094Y 3/4-16 UNF
0094YB 3/4-20 UNEF



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): See below

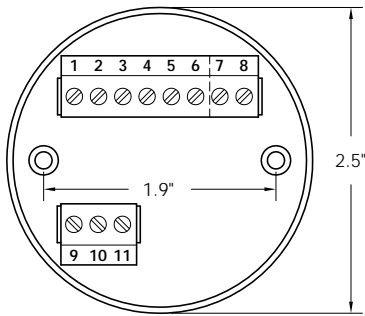
Pulse Out (Vo): 0 - Vs, 0 - 5V(TTL), 0 - 10V, OC, NPN/PNP Typically, See product specific sheet

Temp. Range: See below

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

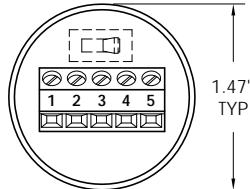
4021

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



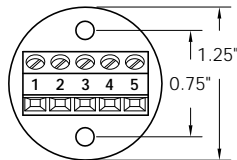
4022

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)



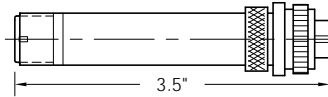
4023

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



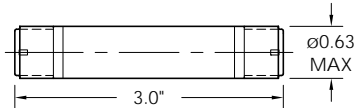
4024

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)



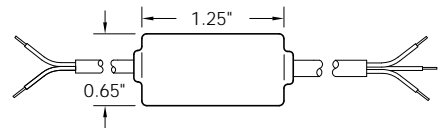
4024M

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)



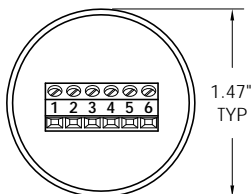
4024H

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



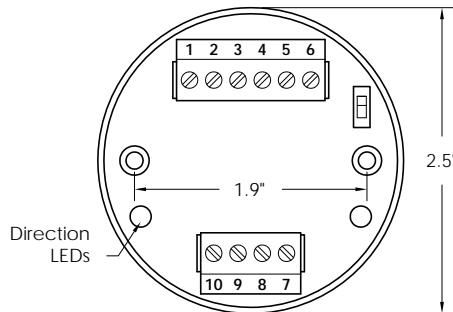
4029

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



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

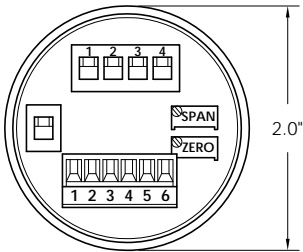
Output (Vo): Output type varies based on product, See below

Temp. Range: See below

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

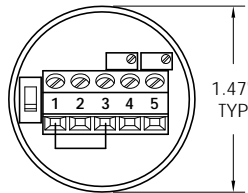
4026

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



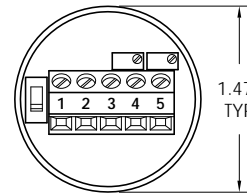
4027

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

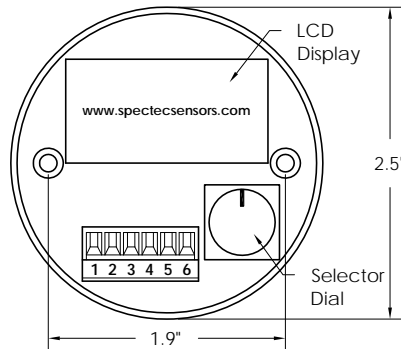
Frequency to Voltage Converter
0-5V or 0-10V
Supply Voltage: 8 - 36 VDC
Temp Range: -40° to 221° F (-40° to 105° C)
Fits in Appleton ELBY or similar enclosure
(adapter available for Crouse-Hinds GUAL16)



4057

User selectable 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

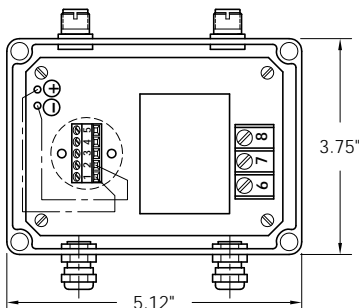


POWER SUPPLY, SPEED SWITCH, & TEMPERATURE TRANSMITTER

Accessories

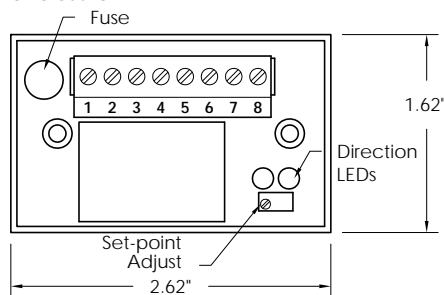
4100

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



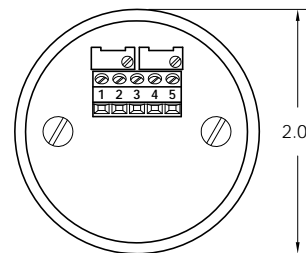
4052

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

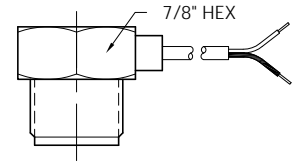
Pulse Out (Vo): 0 - Vs, 0 - 5V(TTL), 0 - 10V, OC, NPN/PNP

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

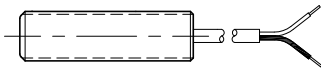
Thread Length: .5 - 6.0" (13-152mm)
Resistance / Inductance: **RF4:** 4.0 Ohm, 0.36 mH or **RF10:** 12.0 Ohm, 1.00 mH
Air Gap: Typically up to .130" for harsh environments, (.160" for epoxy sealed high-sensitivity version)
Temp. Ranges: **3T:** -150° to 330° F (-101° to 165° C)
4HT: -250° to 400° F (-157° to 204° C)
5HT: -450° to 450° F (-270° to 232° C)
8HT: -450° to 750° F (-270° to 399° C)

RF-H90
5/8-18 UNF
11/16-24 UNEF

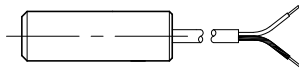
Custom made types are available



RF-A
3/8-24 UNEF M10 x 1.0
1/2-20 UNEF M12 x 1.0



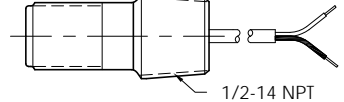
RF-S
ø3/8 (9.5mm)
ø1/2 (13mm)



RF-K
1/2-20 UNF 5/8-18 UNF
11/16-24 UNEF 3/4-16 UNF
M18 x 1.5

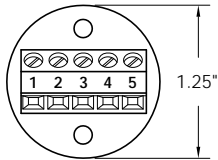


RF-X
1/2-20 UNF 5/8-18 UNF
11/16-24 UNEF 3/4-16 UNF



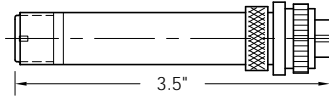
4013

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



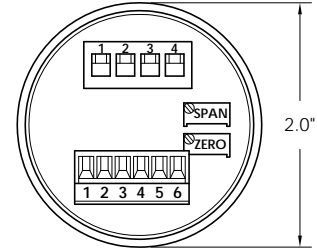
4014

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)



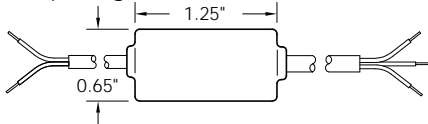
4016

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



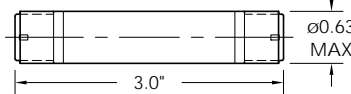
4014H

Ultra Compact In-line RF Preamplifier
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)



DIGISPEC RF NEAR ZERO SPEED SENSORS

No Magnetic Drag, With Integral Amplifier

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

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

Frequency Range: 0.5 - 5000 Hz

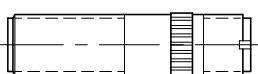
Air Gap: 0.160" Typical depending on target mass and velocity

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

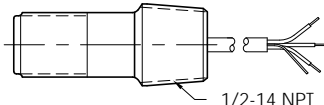
Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.

Thread Length: 1.25 - 8.0" (32-203mm)

0096 5/8-18 UNF
0097 11/16-24 UNEF



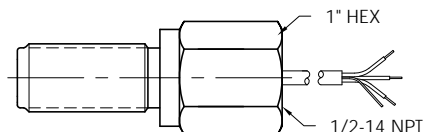
0095X 5/8-18 UNF
0098X 11/16-24 UNEF



0095 5/8-18 UNF
0098 11/16-24 UNEF



0095Y 5/8-18 UNF



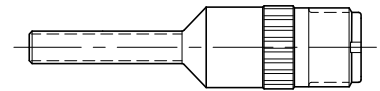
Typical usage: Speed or Position sensing of a magnet or magnetic field.
Activation options include Uni-polar (south pole only), Omni-polar (both poles), and latching Bi-polar (south pole activate, north pole de-activate).
Produces a digital square wave signal with the frequency proportional to the speed.

Supply Voltage (Vs): 4.0 - 30 Vdc @ 18 mA
Pulse Out (Vo): 0 - Vs, 0 - 5V(TTL), 0 - 10V, 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. 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.

1/4" Thread Length: 1.0 - 3.0" (25-76mm)
M6 Temp Ranges: 2TE or 3TE
M8

0155 1/4-40 UNS
0155B 1/4-28 UNF
0155M M6 x 0.75

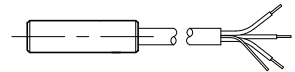
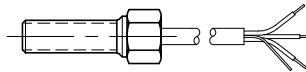
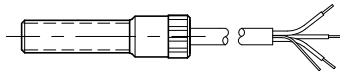
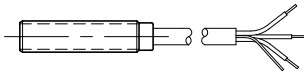


0155A 1/4-40 UNS
0155AB 1/4-28 UNF
0155AM M6 x 0.75
0155AM8 M8 x 1.0

0155K 1/4-40 UNS
0155KB 1/4-28 UNF
0155KM M6 x 0.75

0155H 1/4-40 UNS
0155HB 1/4-28 UNF
0155HM M6 x 0.75

0155S ø1/4 (6.4mm)
0155S8 ø5/16 (8.0mm)



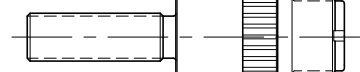
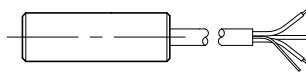
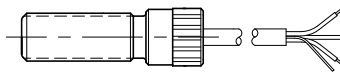
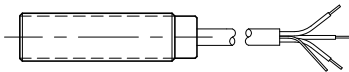
3/8" Thread Length: 0.8 - 6.0" (20-152mm)
M10 Temp Ranges: 2TE or 3TE

0156A 3/8-24 UNEF
0156M M10 x 1.25
0156M1 M10 x 1.0

0156K 3/8-24 UNEF

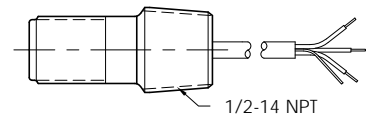
0156S ø3/8 (9.5mm)

0156 3/8-24 UNEF
0156MK M10 x 1.25



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

0158X 1/2-20 UNF



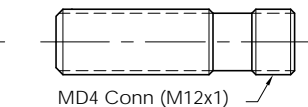
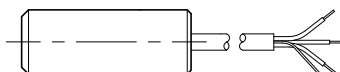
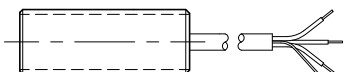
Available with dual output

0158A 1/2-20 UNF
0158B 1/2-32 UN
0158M M12 x 1.0

0158S ø1/2 (12.7mm)

0158 1/2-20 UNF
0158MK M12 x 1.0

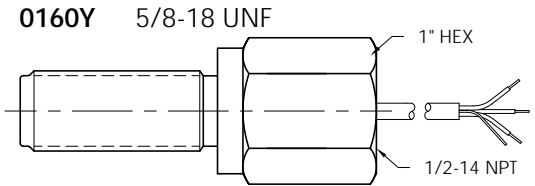
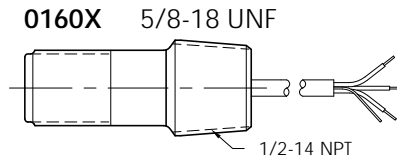
0158MD M12x1.0



...CONTINUED

5/8" Thread Length: 1.1 - 6.0" (28-152mm)
M16 Temp Ranges: 2TE or 3TE

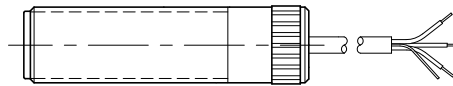
Available with dual output



0161 5/8-18 UNF
0161M M16 x 1.5
0161M1 M16 x 1.0



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



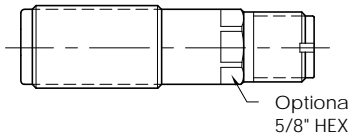
0160A 5/8-18 UNF
0160AM M16 x 1.5
0160AM1 M16 x 1.0



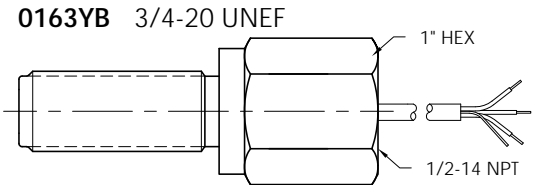
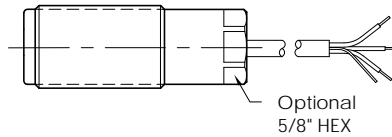
3/4" Thread Length: 1.0 - 6.0" (25-152mm)
M18 Temp Ranges: 2TE or 3TE

Available with dual output

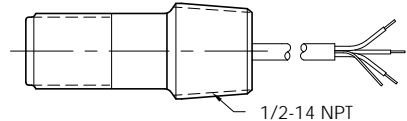
0162 3/4-16 UNF
0162B 3/4-20 UNEF
0162M M18 x 1.5
0162M1 M18 x 1.0



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



0163X 3/4-16 UNF
0163XB 3/4-20 UNEF



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

M16
M18 Available in the same housing configurations shown on this page.

0220 Connector versions
0221 Lead Wire versions

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.

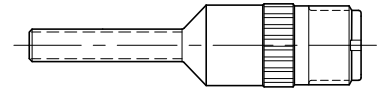
Supply Voltage (Vs): 4.0 - 30 Vdc @ 18 mA
Pulse Out (Vo): 0 - Vs, 0 - 5V(TTL), 0 - 10V, OC, NPN/PNP
Frequency Range: 0 - 20 kHz
Air Gap: 0.050" Typical, 0.25" Max. depending on target mass and velocity.

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

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

1/4" Thread Length: 1.0 - 3.0" (25-76mm)
M6 Temp Ranges: 2TE or 3TE
M8

0165 1/4-40 UNS
0165B 1/4-28 UNF
0165M M6 x 0.75

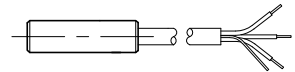
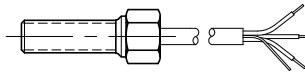
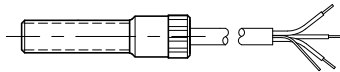
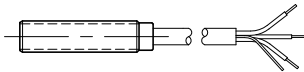


0165A 1/4-40 UNS
0165AB 1/4-28 UNF
0165AM M6 x 0.75
0165AM8 M8 x 1.0

0165K 1/4-40 UNS
0165KB 1/4-28 UNF
0165KM M6 x 0.75

0165H 1/4-40 UNS
0165HB 1/4-28 UNF
0165HM M6 x 0.75

0165S ø1/4 (6.4mm)
0165S8 ø5/16 (8.0mm)



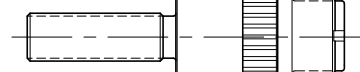
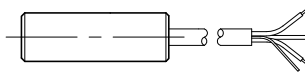
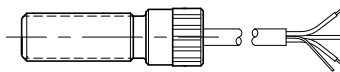
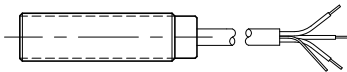
3/8" Thread Length: 0.8 - 6.0" (20-152mm)
M10 Temp Ranges: 2TE or 3TE

0167A 3/8-24 UNEF
0167M M10 x 1.25
0167M1 M10 x 1.0

0167 3/8-24 UNEF

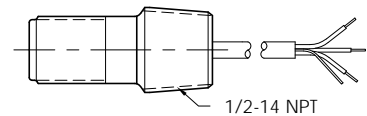
0167S ø3/8 (9.5mm)

0166 3/8-24 UNEF
0166M M10 x 1.25



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

0168X 1/2-20 UNF



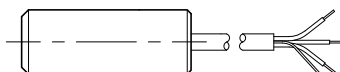
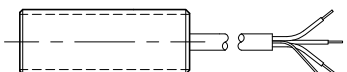
Available with dual output

0168A 1/2-20 UNF
0168B 1/2-32 UN
0168M M12 x 1.0

0168S ø1/2 (12.7mm)

0168 1/2-20 UNF
0168MK M12 x 1.0

0168MD M12x1.0

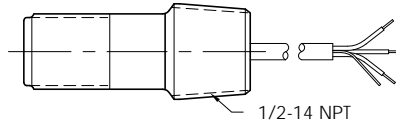


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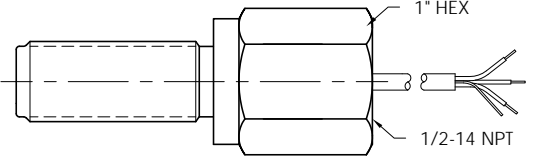
5/8" M16 Thread Length: 1.1 - 6.0" (28-152mm)
Temp Ranges: 2TE or 3TE

Available with dual output

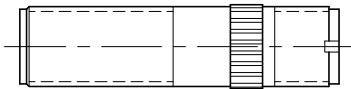
0170X 5/8-18 UNF



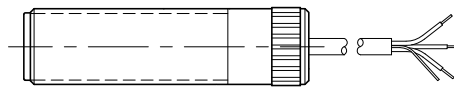
0170Y 5/8-18 UNF



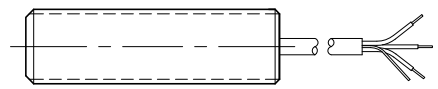
0169 5/8-18 UNF
0169M M16 x 1.5
0169M1 M16 x 1.0



0170 5/8-18 UNF
0170M M16 x 1.5
0170M1 M16 x 1.0



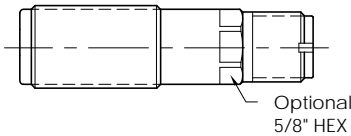
0170A 5/8-18 UNF
0170AM M16 x 1.5
0170AM1 M16 x 1.0



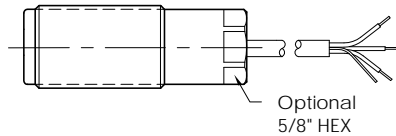
3/4" M18 Thread Length: 1.0 - 6.0" (25-152mm)
Temp Ranges: 2TE or 3TE

Available with dual output

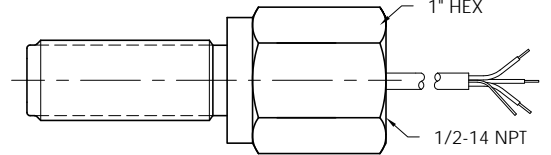
0171 3/4-16 UNF
0171B 3/4-20 UNEF
0171M M18 x 1.5
0171M1 M18 x 1.0



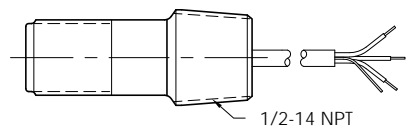
0172 3/4-16 UNF
0172B 3/4-20 UNEF
0172M M18 x 1.5
0172M1 M18 x 1.0



0172YB 3/4-20 UNEF



0172X 3/4-16 UNF
0172XB 3/4-20 UNEF



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

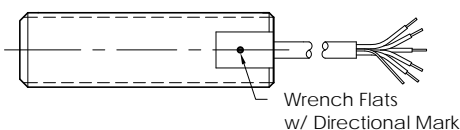
Frequency Range: 0 - 20 kHz

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

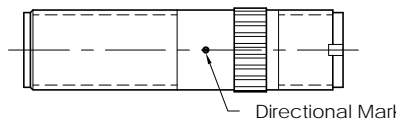
Please contact info@spectecsensors.com for detailed spec-sheets on each sensor family listed.

5/8", 3/4" M16, M18 Thread Length: 1.7 - 8.0" (43-203mm)
Temp Range: -40° to 255° F (-40° to 125° C)

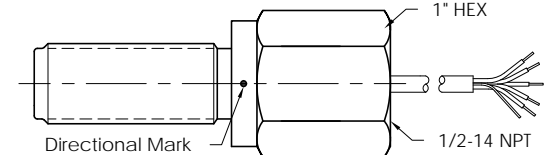
0170Q 5/8-18 UNF
0170QM M16 x 1.5
0170QM1 M16 x 1.0
0172Q 3/4-16 UNF
0172QB 3/4-20 UNEF
0172QM M18 x 1.5
0172QM1 M18 x 1.0



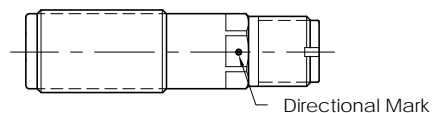
0169Q 5/8-18 UNF
0169QM M16 x 1.5
0169QM1 M16 x 1.0



0170QY 5/8-18 UNF
0172QBY 3/4-20 UNEF



0171Q 3/4-16 UNF
0171QB 3/4-20 UNEF
0171QM M18 x 1.5
0171QM1 M18 x 1.0



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.

Output Voltage (Vpp): Limited to approximately 1 Vpp by internal diode network

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: 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

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

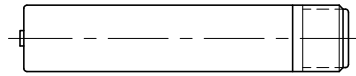
Please also see Installation Document 85045 or 85045N for requirements and certification details.

1/2" 5/8" Thread Length: .75 - 13.0" (19-330mm)

11/16" 3/4"

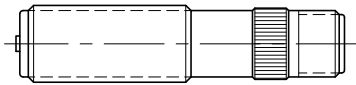
M12 M16 M18

S type (Other custom made types are available)

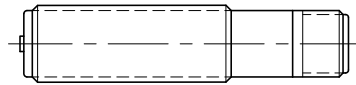


IS40, IS40A, or N40

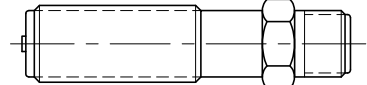
K type



A type

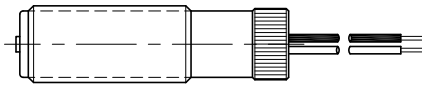


H type

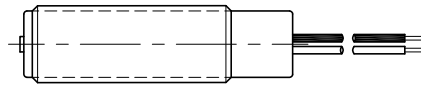


IS41, IS41A, or N41

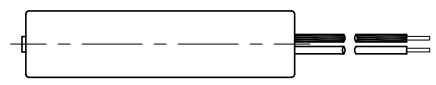
K type



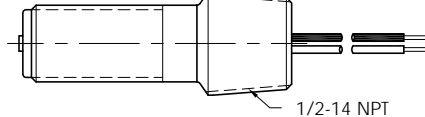
A type



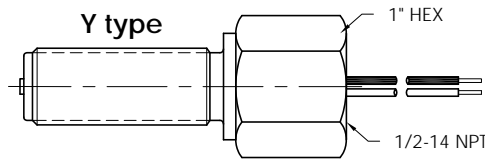
S type (Other custom made types are available)



X type



Y type



INTRINSICALLY SAFE AND NON-INCENDIVE

Preamplifier for Passive Magnetic Speed Sensors

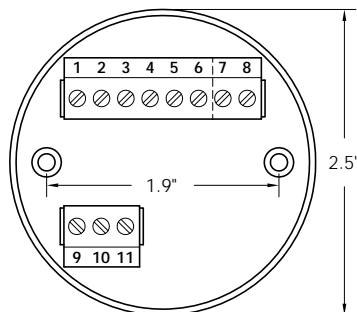
Certifications: Similar to those shown above for IS40, etc. (see spec-sheet for details)

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

Please also see Installation Document 85049 / 85051 or 85049N / 85051N for requirements and certification details.

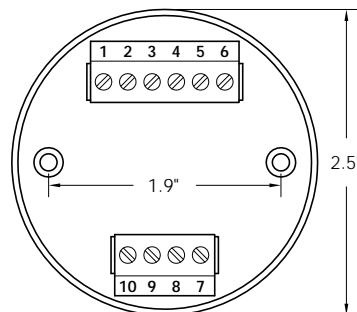
IS4021, IS4021A or N4021

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



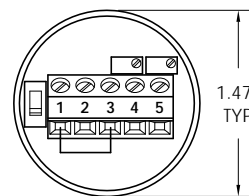
IS4033, IS4033A or N4033

Directional Preamp
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



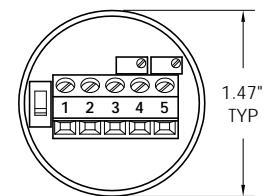
IS4027, IS4027A, or N4027

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)



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

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

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

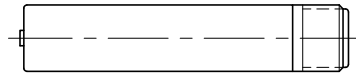
Please also see Installation Document 85047 or 85047N for requirements and certification details.

1/2" 5/8" Thread Length: .75 - 13.0" (19-330mm)

11/16" 3/4"

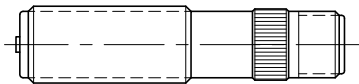
M12 M16 M18

S type (Other custom made types are available)



IS90, IS90A, or N90

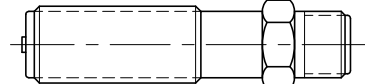
K type



A type

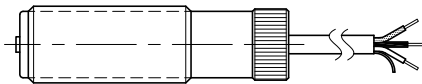


H type

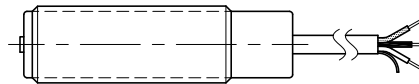


IS91, IS91A, or N91

K type

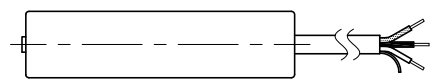


A type

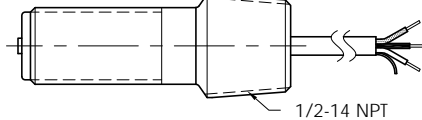


S type

(Other custom made types are available)

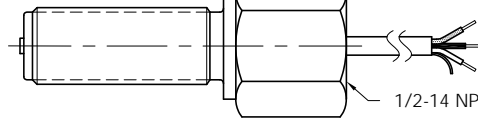


X type



1/2-14 NPT

Y type



1" HEX

1/2-14 NPT

INTRINSICALLY SAFE AND NON-INCENDIVE

Digispec RF Near Zero Speed Sensors

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

Frequency Range: 0.5 - 5000 Hz

Air Gap: 0.160" 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)

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

Please also see Installation Document 85047 or 85047N for requirements and certification details.

1/2" 5/8" Thread Length: .75 - 13.0" (19-330mm)

11/16" 3/4"

M12 M16 M18

Available in the same housing configurations shown above.

IS100, IS100A, or N100 Connector Version

IS101, IS101A, or N101 Lead Wire Version

RF sensors without the preamplifier for use in hazardous environments can be found under IS70, IS71, and variants.



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).

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 (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.

Please also see Installation Document 85047 / 85048 or 85047N / 85048N for requirements and certification details.

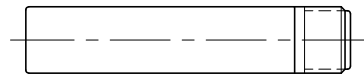
1/2" 5/8" Thread Length: .75 - 13.0" (19-330mm)

11/16" 3/4"

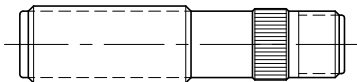
M12 M16 M18

IS160, IS160A, or N160 Single Output
IS164, IS164A, or N164 Dual Output
IS180, IS180A, or N180 Dual Output w/ Direction

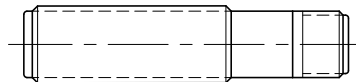
S type (Other custom made types are available)



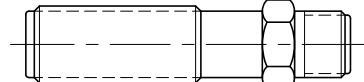
K type



A type

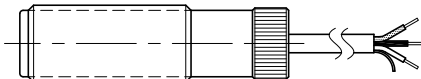


H type

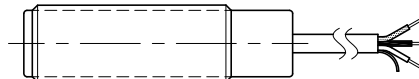


IS161, IS161A, or N161 Single Output
IS165, IS165A, or N165 Dual Output
IS181, IS181A, or N181 Dual Output w/ Direction

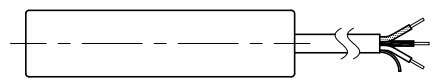
K type



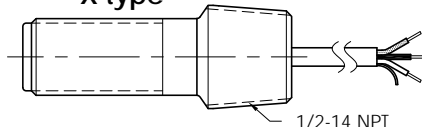
A type



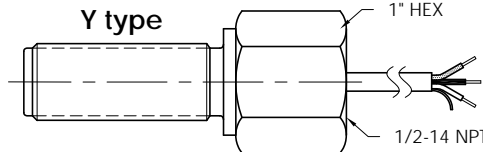
S type (Other custom made types are available)



X type



Y type



INTRINSICALLY SAFE AND NON-INCENDIVE

Digispec Linear / Angular Position Sensors

Typical usage: 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)

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

Please also see Installation Document 85047 or 85047N for requirements and certification details.

1/2" 5/8" Thread Length: .75 - 13.0" (19-330mm)

11/16" 3/4"

M12 M16 M18

IS220, IS220A, or N220 Connector Version
IS221, IS221A, or N221 Lead Wire Version

Available in the same housing configurations shown above.

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

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

Please also see Installation Document 85047 / 85048 or 85047N / 85048N for requirements and certification details.

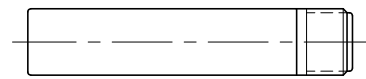
1/2" 5/8" Thread Length: .75 - 13.0" (19-330mm)

11/16" 3/4"

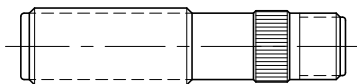
M12 M16 M18

IS170, IS170A, or N170 Single Output
IS174, IS174A, or N174 Dual Output

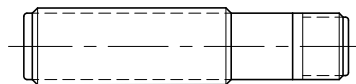
S type (Other custom made types are available)



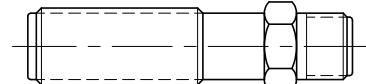
K type



A type

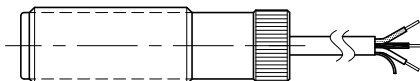


H type

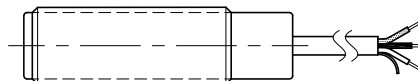


IS171, IS171A, or N171 Single Output
IS175, IS175A, or N175 Dual Output

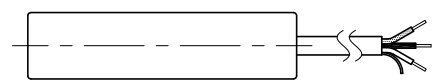
K type



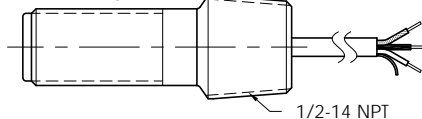
A type



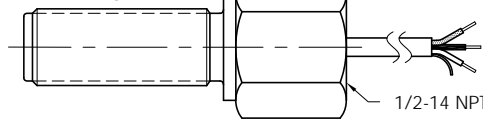
S type (Other custom made types are available)



X type



Y type



INTRINSICALLY SAFE AND NON-INCENDIVE

Digispec Gear Actuated Directional Hall Effect Zero Speed Sensors

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

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: Similar to those shown above for IS170, etc. (see spec-sheet for details)

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

Please also see Installation Document 85048 or 85048N for requirements and certification details.

1/2" 5/8" Thread Length: .75 - 13.0" (19-330mm)

11/16" 3/4"

M12 M16 M18

IS190, IS190A, or N190 Connector Version
IS191, IS191A, or N191 Lead Wire Version

Available in the same housing configurations shown above.