

# SPECTEC

THUNDERBIRD INTERNATIONAL CORPORATION  
 P.O. Box 360, Emigrant, MT 59027 USA  
 (406) 333-4967 FAX: (406) 333-4259  
 www.spectecensors.com

0090 • 0091  
 DIGISPEC MAGNETIC SPEED SENSOR  
 5/8, M16

## PRODUCT DESCRIPTION

SPECTEC's DIGISPEC Magnetic pickups produce a digital frequency output proportional to speed. The internal amplifier provides for constant pulse shaping, signal amplitude, logic-level output, robust signal-to-noise ratio, usable at lower RPMs and greater air gap between the sensor and the actuator. All models are also available with an internal temperature probe (RTD100 Ohm, NTC 10k Ohm).

For hazardous location Class 1 Division 1 please refer to IS90 & IS91, or for Class 1 Division 2 please refer to N90 & N91.

## SPECIFICATIONS

- Vs, Supply Voltage:** 7.5(12) to 30 VDC regulated  
 4.5 to 7.5 VDC, unregulated
- Is, Supply Current:** ≤ 2 mA @ 5 VDC  
 ≤ 4 mA @ 12 VDC  
 ≤ 10 mA @ 24 VDC  
 ≤ 20 mA @ 30 VDC (OC)
- Vo, Signal Out:** @ ≤ 20 mA sink, See page 2
- Input Sensitivity:** 30, 12, or 5 mVpp
- Operating Freq.:** ≥ 3 to 10 kHz  
 ≥ 30 kHz at increased signal level, varies with target size, distance and pickup sensitivity. (Options: ≤ 100 kHz)
- Rise/Fall Time:** 0.04 μs / 0.16 μs
- Temperature Range:**  
 2TE: -40° to 248°F (-40° to 120°C)  
 3TE: -49° to 284°F (-45° to 140°C)  
 RTD: -49° to 284°F (-45° to 140°C)  
 NTC: -40° to 248°F (-40° to 120°C)
- Magnetization:** Standard: ≥ 900 Gauss  
 Low Mag: 250 Gauss, TYP.
- Pole Piece:** Flush(FP), Sealed Flush(FPS), Extended(EP), Sealed Extended(EPS), & Chisel Point(CP) Poles are available. (CP must be oriented parallel with gear tooth.)

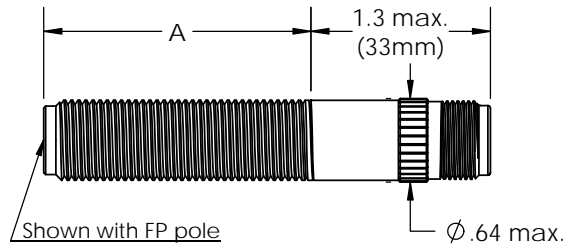
Gear Pitch	Pole Type
≤36 DP (MODULE 0.7)	EP62, CP10
≤26 DP (MODULE 0.98)	EP93
≤24 DP (MODULE 1.06)	FP130, FPS130, EP106, EPS106 EP125, CP45
≤12 DP (MODULE 2.11)	EP188
≤5 DP (MODULE 5.1)	EP250

- Connectors/Pins:** See page 2 for Configurations  
 All have gold plated contacts
- Lead Wire Assignments:** See Page 2 for Wire & Cable Options  
 Red: Supply (+)  
 Black: Common (-)  
 White or Green: Signal  
 Bare: Cable Shielding
- Construction:** 300 Series stainless steel housing  
 Solid epoxy encapsulation
- CE-Compliance:** EN55011, EN50082-2

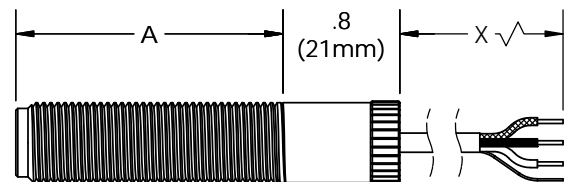
## OPTIONS

Custom configurations, thread sizes, special materials, temperature probes (NTC10, RTD100, or others), Please contact sales.

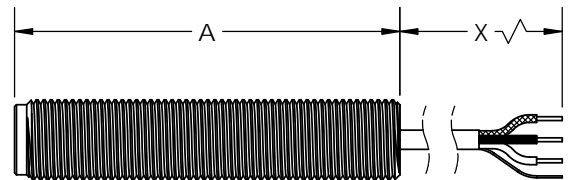
0090 5/8-18 UNF  
 0090M M16x1.5  
 0090M1 M16x1.0



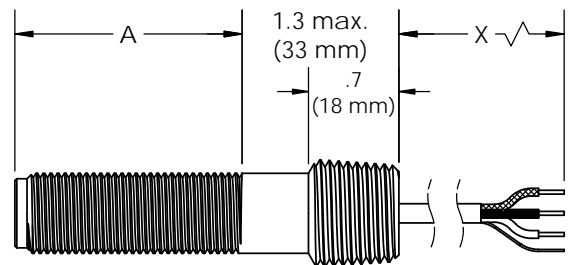
0091 5/8-18 UNF  
 0091M M16x1.5  
 0091M1 M16x1.0



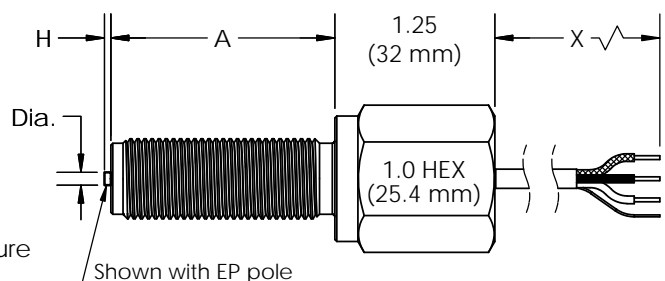
0091A 5/8-18 UNF  
 0091AM M16x1.5  
 0091AM1 M16x1.0



0091X 5/8-18 UNF w/ 1/2-14 NPT Male



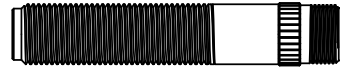
0091Y 5/8-18 UNF w/ 1/2-14 NPT Female



# ORDER INFORMATION

STYLE:            OPTIONS:            THREADS/DIA.:

0090    -            5/8-18 UNF  
 0090M    -            M16x1.5  
 0090M1    -            M16x1.0



Thread Length(A):  
 0 - 1.25" (36mm)    4 - 4.0" (102mm)  
 1 - 1.75" (45mm)    5 - 5.0" (127mm)  
 A - 2.5" (64mm)    6 - 6.0" (152mm)  
 2 - 3.0" (76mm)    8 - 8.0" (203mm)

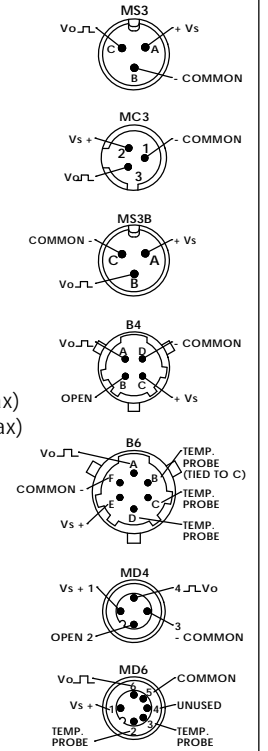
Pole Type (Ø, H):  
 1 - FP130 Flush Pole, Ø.130"  
 2 - EP106 Extended Pole, Ø.106" x .02" H  
 3 - EP187 Extended Pole, Ø.187" x .02" H  
 4 - EP125 Extended Pole, Ø.125" x .07" H  
 5 - FPS130 Flush Pole, Ø.130" in Sealed S.S. Face  
 6 - EPS106 Extended Pole, Ø.106" x .02" H in Sealed S.S. Face  
 7 - SAN Sanitary NEMA 6, IP65, & IP67 Construction w/ FPS130  
 8 - CP10 Fine Chisel Pole, .01" W  
 9 - CP45 Course Chisel Pole, .045" W  
 A - EP62 Extended Pole, Ø.062" x .03" H  
 B - EP93 Extended Pole, Ø.093" x .03" H  
 C - EP250 Extended Pole, Ø.250" x .02" H

Vo, Pulse Out/ Output Logic:  
 1 - 0-10V, NPN (Recommend Vs=12 VDC min)    5 - 0-Vs, Sink/Source w/Short Circuit Protection(85°C max)  
 2 - 0-5V, NPN [TTL]    6 - 0-5V, Sink/Source w/Short Circuit Protection(85°C max)  
 3 - 0-Vs, NPN w/2.2k pull-up    7 - 0-Vs, Sink/Source (125°C max)  
 4 - 0-Vs, NPN (OC), Open collector    8 - 0-5V, Sink/Source (125°C max)

Input Sensitivity and Temp.:  
 1 - 30 mV (2TE, 120°C)    5 - 30 mV (3TE, 140°C)  
 2 - 12 mV (2TE, 120°C)    6 - 12 mV (3TE, 140°C)  
 3 - 5 mV (2TE, 120°C)    7 - 5 mV (3TE, 140°C)

Connector:  
 1 - MS3: 3 Pin MS3102A10SL-3P (for mate see Bulletin 3000)  
 2 - MC3: 3 Pin Micro-C, 1/2-20 threaded (for mate see Bulletin 3004)  
 3 - MS3B: 3 Pin MS3102A10SL-3P (for mate see Bulletin 3000)  
 4 - B4: 4 Pin Bayonet, MS3112E8-4P (for mate see Bulletin 3001)  
 5 - B6: 6 Pin Bayonet, MS3112E10-6P (for mate see Bulletin 3001)  
 7 - MD4: 4 Pin Micro DIN M12 threaded (for mate see Bulletin 3005)  
 8 - MD6: 6 Pin Micro DIN M12 threaded (for mate see Bulletin 3005)

## CONNECTOR PINOUTS



0091    -            5/8-18 UNF  
 0091M    -            M16x1.5  
 0091M1    -            M16x1.0  
 0091A    -            5/8-18 UNF  
 0091AM    -            M16x1.5  
 0091AM1    -            M16x1.0



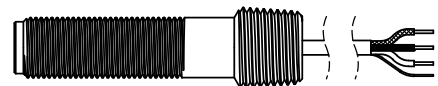
0091, M, M1            0091A, AM, AM1

Thread Length(A):  
 0 - 1.25" (30mm)    1.0" (25mm)  
 1 - 1.75" (45mm)    2.0" (51mm)  
 2 - 3.0" (76mm)    3.0" (76mm)  
 4 - 4.0" (101mm)    4.0" (101mm)  
 5 - 5.0" (127mm)    5.0" (127mm)  
 6 - 6.0" (152mm)    6.0" (152mm)  
 8 - 8.0" (203mm)    8.0" (203mm)

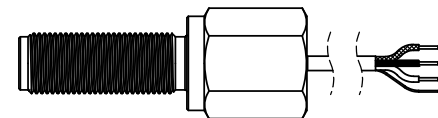
SAME AS ABOVE

Lead Wire(X):  
 2 - 2' (.6m) Single Leads    Note: For shielded cable, shield is not connected to  
 7 - 3' (1m) Shielded Cable    sensor shell, and is intended to be connected  
 9 - 10' (3m) Shielded Cable    to instrument ground.

0091X    -            5/8-18 UNF with 1/2-14 NPT Male  
 0091Y    -            5/8-18 UNF with 1/2-14 NPT Female



Thread Length(A):  
 2 - 1.3" (33mm)    0091X    0091Y  
 3 - ---    2.0" (51mm)  
 4 - ---    2.8" (71mm)  
               4.0" (102mm)



Notes: 1. The magnetization level for special or low mag. sensors, is designated as a suffix to the P/N, i.e.: 0090 -11111-300G, designating a gauss level of 300(±50). (Standard mag. level will not have a suffix.)