

## PRODUCT DESCRIPTION

SPECTEC's Zero Speed sensors are designed to switch in the presence of ferrous targets such as gear teeth, blade tips, ect. Gear teeth as small as module 0.5 or 48 DP can be sensed.

The standard output is NPN Supply Tracking 0-Vs, provided from a 3k Ohm internal pull-up resistor to a collector, which can sink 25 mA. The output is normally high with no target present. Other output signal options are available; please see Page 2 for details.

For intrinsically safe versions refer to bulletin: IS170 & IS171.

## SPECIFICATIONS

**Orientation:** Single: No orientation required.  
 Differential: The alignment mark must be in line with the rotation of the gear.

**Vs, Supply Voltage:** 4.0 to 30 Vdc @ ≤ 18 mA  
 4.0 to 27 Vdc @ ≤ 30 mA  
 4.0 to 24 Vdc @ ≤ 24 mA (Differential)  
 Reverse Polarity Protected

**Vo, Signal Out:** Output signal is typically 'Normally High' except for PNP output which is 'Normally Low'

**Operating Freq.:** 0 to ~20 kHz (Standard)  
 ~15 Hz to ~30 kHz (Differential)

**Air Gap:** 24 DP / Module 1: .050" (1.3mm)  
 12 DP / Module 2: .080" (2.0mm)  
 5 DP / Module 5: .160" (4.0mm)

**Magnetization:** Standard: ~1500 Gauss  
 Low Mag: ~500 Gauss

**Rise/Fall Time:** 0.10 μs to 2 μs  
 \*Dependent on Configuration

**Temperature Range:** 2TE: -40° to 221°F (-40° to 105°C)  
 \*May be reduced based on options selected  
 3TE: -40° to 300°F (-40° to 150°C)  
 \*May be reduced based on options selected

**Construction:** 300 Series S.S. Housing & Face  
 Solid Epoxy Encapsulation

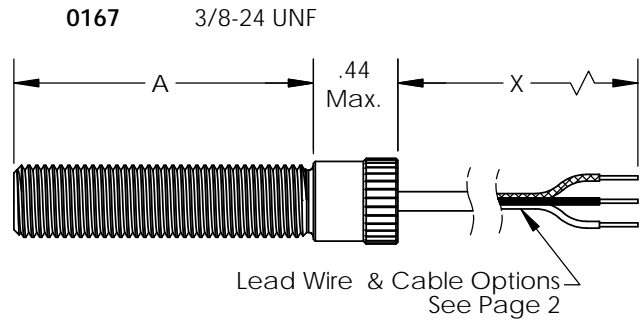
**Connectors & Pin Assignments:** See Page 2  
 All have Gold Plated Pin Contacts

**Lead Wires & Assignments:** 2TE: PVC 22-24 AWG (105°C)  
 3TE: TFE 22 AWG (150°C)  
 Red: Supply (+)  
 Black: Common (-)  
 White/Green: Signal  
 Bare: Cable Shielding

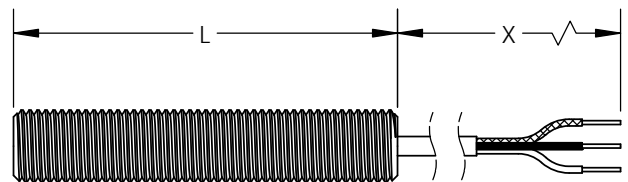
**CE-Compliance:** EN55011, EN50082-2

## OPTIONS

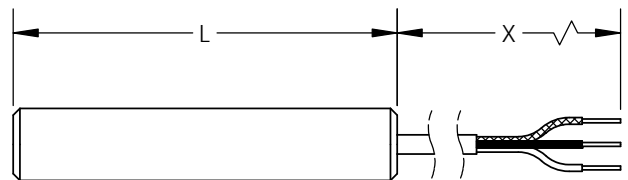
Custom configurations, thread sizes including metric, special, materials of construction, special output circuits including short circuit protection, and temperature probe (NT10, RTD100, or others). Please contact sales.



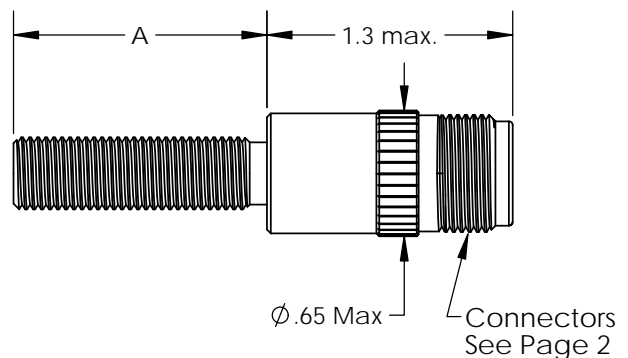
0167A 3/8-24 UNF  
 0167M M10 x 1.25  
 0167M1 M10 x 1



0167S Ø3/8" (9.5 mm) Smooth Shell



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



# ORDER INFORMATION

STYLE:            OPTIONS:            THREADS/DIA.:

0167            -            3/8-24 UNF

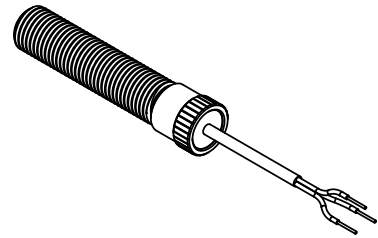
Thread Length(A):  
 1 - 0.8" (20mm)  
 A - 1.3" (33mm)  
 2 - 2.0" (51mm)  
 3 - 2.5" (63mm)  
 4 - 3.0" (76mm)  
 6 - 4.0" (102mm)

Temperature Range:  
 1 - 2TE: -40° to +221°F (-40° to +105°C)  
 6 - 3TE: -40° to +302°F (-40° to +150°C)

Vo, Signal Out:  
 1 - 0 - Vs, NPN w/3.1 k Ohm pull-up [Normally High]  
 2 - 0 - Vs, NPN, OC(Open Collector) [Normally High]  
 3 - 0 - Vs, PNP, OC [Normally Low]  
 5 - 0 - 5V, NPN [TTL] [Normally High]

Sensor Type:  
 3 - Standard Type Single Sensor (HF)  
 4 - Differential Type (HFd)

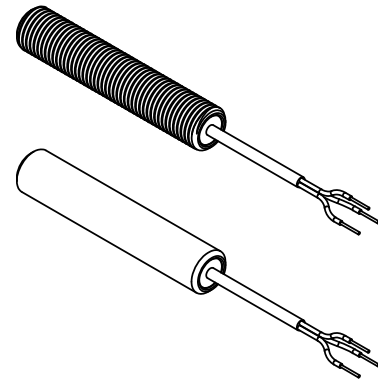
Lead Wire(X):  
 1 - 1' (.3m) Single Leads (Shield is not connected to sensors shell;  
 7 - 3' (1m) Shielded Cable shield is intended to be connected to  
 9 - 10' (3m) Shielded Cable instrument panel ground.)



0167A            -            3/8-24 UNF  
 0167M            -            M10 x 1.25  
 0167M1            -            M10 x 1.0  
 0167S            -            Ø3/8" (10mm) Smooth Shell

Length(L):  
 2 - 1.0" (25mm)  
 3 - 1.25" (32mm)  
 4 - 1.5" (38mm)  
 5 - 2.0" (51mm)  
 6 - 2.5" (63mm)  
 7 - 3.0" (76mm)  
 8 - 4.0" (102mm)  
 9 - 5.0" (127mm)  
 A - 6.0" (152mm)

SAME AS ABOVE

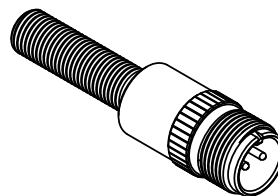


0166            -            3/8-24 UNF  
 0166M            -            M10 x 1.25

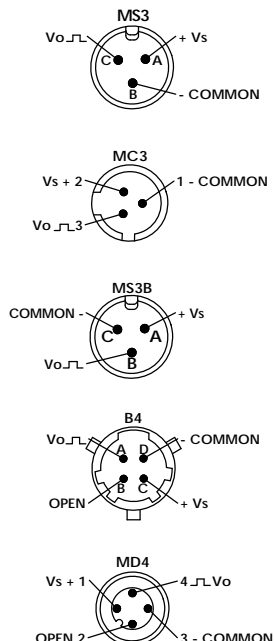
Thread Length(A):  
 1 - 1.3" (33mm)  
 2 - 2.0" (51mm)  
 3 - 3.0" (76mm)

SAME AS ABOVE

Connector:  
 1 - MS3: 3 Pin MS3106-10SL-3P (see Bulletin 3000)  
 2 - MC3: 3 Pin Micro-C (see Bulletin 3004)  
 3 - MS3B: 3 Pin MS3102-10SL-3P (see Bulletin 3000)  
 4 - B4: 4 Pin Bayonet, MS3113-H8A4P (see Bulletin 3001)  
 6 - MD4: 4 Pin Micro DIN (see Bulletin 3005)



## Connector Pinout



**Note:** The magnetization level for special or low mag. Sensors is designated as a suffix to the P/N. i.e.: 0167-11111-500G designating a gauss level of 500(±50). (Standard mag. Level will not have a suffix)

A Normally Low output signal is available for the NPN output signal option (TTL, Supply Tracking and Open Collector) by adding '-NL' to the end of the part number.

Similarly, a Normally High output signal is available for the PNP output signal option by adding '-NH' to the end of the part number.