SPECTEC's Zero Speed sensors are designed to switch in the presence of ferrous targets such as gear teeth, blade tips, etc. 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)

**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)
- 3TE: -40° to 300°F (-40° to 150°C)

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

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

**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.
ORDER INFORMATION

STYLE:       OPTIONS:  THREADS/DIA.:  3/8-24 UNF
0167        -  -  -  -  -

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; shield is intended to be connected to instrument panel ground.)
7 - 3’ (1m) Shielded Cable
9 - 10’ (3m) Shielded Cable

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” (78mm)
8 - 4.0” (106mm)
9 - 5.0” (135mm)
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)

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.

Connector Pinout