PRODUCT DESCRIPTION
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. Standard output is NPN supply tracking 0-Vs, provided from a 3k-Ohm internal pull-up resistor to a collector, which can sink 25mA. For intrinsically safe versions refer to bulletin: IS170 & IS171.

SPECIFICATIONS
Orientation:
Single: No orientation required.
Dual: For directional applications, the alignment mark must be in line with the rotation of the target. For synchronous output, the alignment mark should be at a right angle to the rotation of the target.
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 24 Vdc @ ≤ 24 mA (Differential)
Reverse Polarity Protected

Vo, Signal Out:
See Page 2

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

Air Gap:
24 DP / Module 1: .050” (1.3mm)
12 DP / Module 2: .070” (1.8mm)
5 DP / Module 5: .140” (3.6mm)

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 302°F (-40° to 150°C)

Construction:
300 Series Stainless Steel Housing
Solid Encapsulation

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

Lead Wire & Assignments:
See Page 2 for Wire & Cable Options
2TE: PVC 22-24 AWG (105°C)
3TE: TFE 22 AWG (150°C)
Red: Supply (+)
Black: Common (-)
White: Signal A
Green: Signal B (dual sensor only)
Bare: Shield

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:**

- 0168
- 0168MK
- 0168MD

**OPTIONS:**

- [ ]
- [ ]
- [ ]

**THREADS/DIA.:**

- 1/2-20 UNF
- M12 x 1.0 (MD4 Connector Only)

**Thread**

- 1 - 1.0" (25mm) 16mm
- 2 - 2.0" (51mm) 28mm
- 3 - 3.0" (76mm) 40mm
- 4 - 4.0" (101mm) 79mm
- 6 - 6.0" (152mm) 130mm

**Length (A, MD):**

- 0168 & 0168M
- 0168MD

**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:**

- 2 - Dual Sensor (HFF)
- 3 - Standard Type Single Sensor (HF)
- 4 - Differential Type (HFd)

**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)

**Housing Length (L):**

- 2 - 1.0" (25mm)
- 3 - 1.25" (32mm)
- 4 - 1.50" (38mm)
- 5 - 2.00" (51mm) (1.80" (46mm) for 0168S only)
- 6 - 2.50" (64mm)
- 7 - 4.00" (101mm)
- 8 - 6.00" (152mm)

**Lead Wire (X):**

- 2 - 2’ (.6m) Single Leads
- 7 - 3’ (1m) Shielded Cable
- 9 - 10’ (3m) Shielded Cable

**0168A** - 1/2-20 UNF
**0168B** - 1/2-32 UN
**0168M** - M12 x 1.0
**0168S** - Ø1/2" (12.7mm) Smooth Shell

**0168X** - 1/2-20 UNF with 1/2-14 NPT Male Conduit

**Thread**

- 1 - 1.3" (33mm)
- 2 - 2.50" (64mm)

**NOTE:**

The magnetization level for special or low mag. Sensors is designated as a suffix to the P/N. i.e.: 0168-11111-300G designating a gauss level of 300(±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.