

PRODUCT DESCRIPTION

SPECTEC's Proximity/Zero Speed position sensor are designed to switch in the presence of a low magnetic field. Bi-polar (north and south polar activation) is standard. Uni-polar and omni-polar activation is also available for higher pulse resolution. Various output options are available and provided to suit all interface requirements.

A robust universal sink/source NPN/PNP low independence rail-to-rail output protection is also available. The sensor is reverse polarity protected.

For intrinsically safe versions refer to bulletins: IS160 & IS161

SPECIFICATIONS

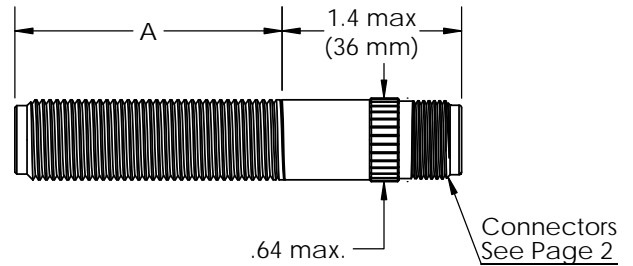
Orientation:	Single: No orientation required.
	Dual: For directional applications, the alignment mark must be in line with the rotation of the target. For synchronous output, the alignment mark should be at a right angle to the rotation of the target.
Vs, Supply Voltage:	4.5 to 30 Vdc @ ≤ 18 mA Reverse Polarity Protected 10-36 Vdc for Universal sink/source output
Vo, Signal Out:	Output signal is typically 'Normally High', except for PNP output which is 'Normally Low' See note on Page 2 for more information
Operating Freq.:	Standard: 0 to 20 kHz (for precision position applications) High Speed: 0 to 100 kHz (for high speeds only)
Air Gap:	≤ .160" typical ≤ 1" using extra strong 5 kG magnets
Rise/Fall Time:	0.10 μs to 2 μs *Dependent of configuration
Temperature Range:	2TE: -40° to 221°F (-40° to 105°C) *may be reduced based on configuration 3TE: -40° to 302°F (-40° to 150°C) *may be reduced based on configuration
Construction:	300 series stainless steel housing Solid epoxy encapsulation
Connectors & Pin Assignments:	See Page 2 All have gold plated contacts
Lead Wire Assignments:	Red: Supply (+) Black: Common (-) White: Signal A Green: Signal B (dual sensor only) Bare: Shield: not connector to sensor shell, ground at termination.

CE-Compliance: EN55011, EN50082-2

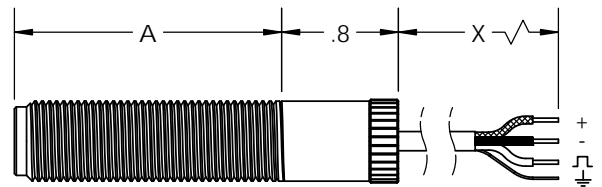
OPTIONS

Custom configurations, thread sizes, special materials of construction, temperature probe (NTC10, RTD100, or others). For directional sensing, a dual sensor can be used with P/N 4033.

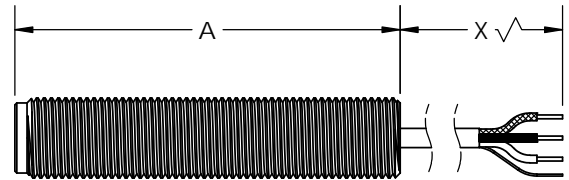
0161 5/8-18 UNF
0161M M16x1.5
0161M1 M16x1.0



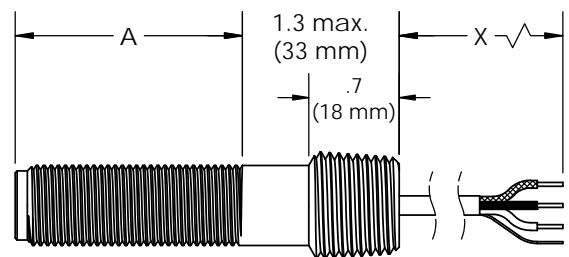
0160 5/8-18 UNF
0160M M16x1.5
0160M1 M16x1.0



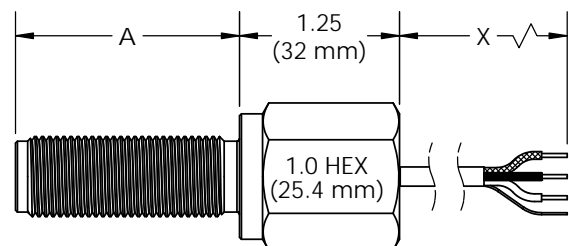
0160A 5/8-18 UNF
0160AM M16x1.5
0160AM1 M16x1.0



0160X 5/8-18 UNF w/ 1/2-14 NPT Male



0160Y 5/8-18 UNF w/ 1/2-14 NPT Female



ORDER INFORMATION

STYLE: **OPTIONS:** **THREADS/DIA.:**
0161 - [] [] [] [] **5/8-18 UNF with CONNECTOR**
0161M - [] [] [] [] **M16x1.5**
0161M1 - [] [] [] [] **M16x1.0**

Thread Length(A):

1 - 1.1" (28mm)	4 - 3.0" (76mm)
2 - 1.25" (32mm)	5 - 4.0" (102mm)
3 - 1.75" (43mm)	6 - 5.0" (127mm)
A - 2.5" (64mm)	7 - 6.0" (152mm)

Temp. Range: 1 - 2TE: -40° to 221°F (-40° to +105°C)
 6 - 3TE: -40° to 300°F (-40° to +150°C)

Vo, Signal Out:

- 1 - 0 - Vs, NPN w/internal 3 k Ohm pull-up [Normally High]
- 2 - 0 - Vs, NPN, OC(Open Collector) [Normally High]
- 3 - 0 - Vs, PNP, OC [Normally Low]
- 4 - 0 - Vs, NPN , with LED [Normally High]
- 5 - 0 - 5V, NPN [TTL] [Normally High]
- 6 - 0 - Vs, Universal sink/source lighting protected (85°C max.)
- 7 - 0 - 5V, Universal sink/source lighting protected (85°C max.)
- 9 - 4 - 20mA, Digital current loop (Two Wire)

Senor Type:

- 1 - Hs, Uni-polar type (South pole activated)
- 2 - H, Bi-polar type
- 4 - Ho, Omni-polar type
- 5 - HHo, Dual Omni-polar type
- 7 - Hcs, Uni-polar high speed type (South pole activated)
- 8 - Hc, Bi-polar latch high speed type
- 9 - Hco, Omni-polar high speed type

Connector:

- 0 - MS: 2 Pin MS3102-10SL-4P(For two wire current loop, See Bulletin 3000)
- 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)

0160 - [] [] [] [] **5/8-18 UNF with CABLE**
0160M - [] [] [] [] **M16x1.5**
0160M1 - [] [] [] [] **M16x1.0**
0160A - [] [] [] [] **5/8-18 UNF**
0160AM - [] [] [] [] **M16x1.5**
0160AM1 - [] [] [] [] **M16x1.0**

Thread Length(A):

	<u>0160, M, M1</u>	<u>0160A, AM, AM1</u>
1 - 1.1" (28mm)	1.0" (25mm)	
2 - 1.25" (32mm)	---	
3 - 1.75" (43mm)	2.0" (51mm)	
4 - 3.0" (76mm)	3.0" (76mm)	
5 - 4.0" (102mm)	4.0" (102mm)	
6 - 5.0" (127mm)	5.0" (127mm)	
7 - 6.0" (152mm)	6.0" (152mm)	

SAME AS ABOVE

Shielded Cable*(X): 7 - 3' (1m) *for shorter lengths, single leads are also available.
 8 - 6' (2m)
 9 - 10' (3m)

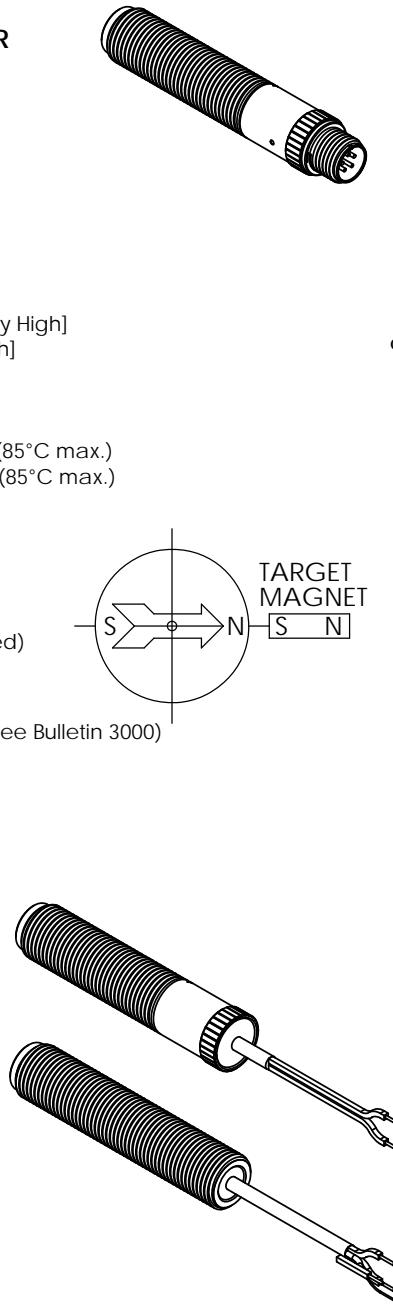
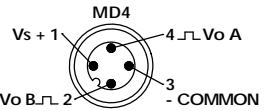
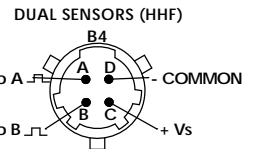
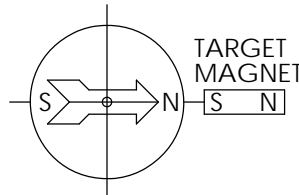
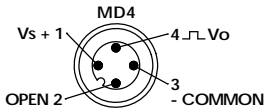
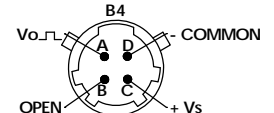
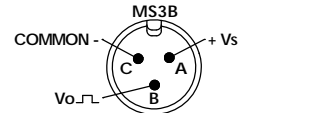
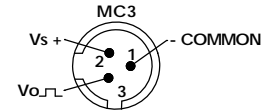
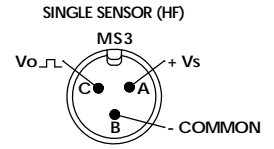
0160X - [] [] [] [] **5/8-18 UNF, NPT Male CONDUIT**
0160Y - [] [] [] [] **5/8-18 UNF, NPT Female CONDUIT**

Thread Length(A):

	<u>0160X</u>	<u>0160Y</u>
1 - 0.7" (18mm)	---	
2 - 1.3" (33mm)	2.0" (51mm)	
3 - ---	2.8" (71mm)	
4 - ---	4.0" (102mm)	

SAME AS ABOVE

CONNECTOR PINOUTS



Note: 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.