

## PRODUCT DESCRIPTION

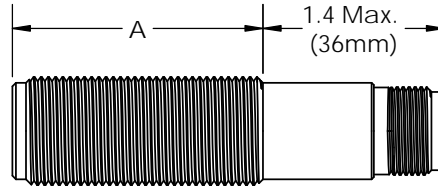
SPECTEC's Proximity/Zero Speed position sensors are designed to switch in the presence of a low magnetic field. Bi-polar (north and south polar activation) is standard. Uni-polar and Omni-polar activation is also available for higher pulse resolution. Various output options are available and provided to suit all interface requirements. A robust universal sink/source NPN/PNP low impedance rail-to-rail output with 60V automotive load dump and short circuit/reverse voltage protection is also available. The sensor is reverse polarity protected.

For intrinsically safe versions refer to bulletins: IS160 & IS161.

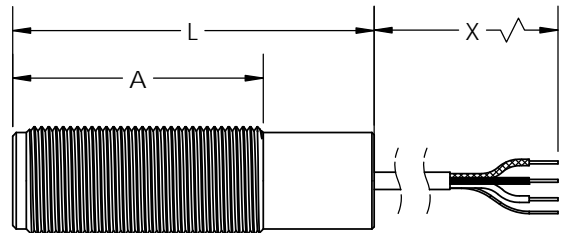
## SPECIFICATIONS

<b>Orientation:</b>	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.
<b>Vs, Supply Voltage:</b>	4.0 to 30 Vdc @ $\leq 18$ mA 10-36 Vdc for Universal sink/source output Reverse Polarity Protected
<b>Vo, Signal Out:</b>	Output signal is typically 'Normally High', except for PNP output which is 'Normally Low'
<b>Operating Freq.:</b>	Standard: 0 to ~20 kHz (for precision position applications) High Speed: 0 to ~100 kHz (for high speed only)
<b>Air Gap:</b>	$\leq .160"$ Typically $\leq 1"$ using extra strong 5K Gauss mags
<b>Rise/Fall Time:</b>	0.10 $\mu$ s to 2 $\mu$ s *Dependent on configuration
<b>Temperature Range:</b>	2TE: -40° to 221°F (-40° to 105°C) *May be reduce based on configuration 3TE: -40° to 302°F (-40° to 150°C) *May be reduce based on configuration
<b>Construction:</b>	300 Series S.S. Housing & Face Solid Encapsulation
<b>Connectors &amp; Pin Assignments:</b>	See Page 2 All have Gold Plated Contacts
<b>Lead Wire &amp; Assignments:</b>	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
<b>CE-Compliance:</b>	EN55011, EN50082-2

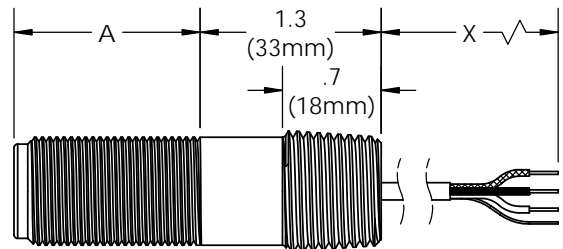
<b>0162</b>	3/4-16 UNF
<b>0162B</b>	3/4-20 UNEF
<b>0162M</b>	M18x1.5
<b>0162M1</b>	M18x1.0



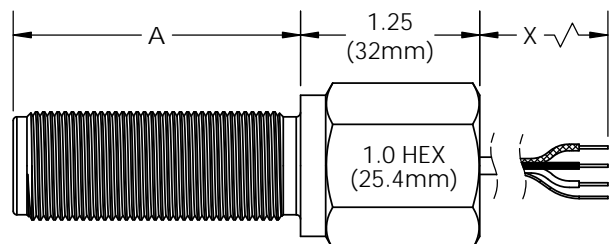
<b>0163</b>	3/4-16 UNF
<b>0163B</b>	3/4-20 UNEF
<b>0163M</b>	M18x1.5
<b>0163M1</b>	M18x1.0



<b>0163X</b>	3/4-16 UNF w/ 1/2-14 NPT Male
<b>0163XB</b>	3/4-20 UNEF w/ 1/2-14 NPT Male



<b>0163Y</b>	3/4-16 UNF w/ 1/2-14 NPT Female
<b>0163YB</b>	3/4-20 UNEF w/ 1/2-14 NPT Female



## OPTIONS

Custom configurations, special materials of construction, thread sizes, special output circuits (including short circuit protection), temperature probe (NTC10, RTD100, or others). Please contact sales.

# ORDER INFORMATION

STYLE:	OPTIONS:	THREADS/DIA.:
0162	- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3/4-16 UNF
0162B	- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3/4-20 UNEF
0162M	- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	M18 x 1.5
0162M1	- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	M18 x 1.0
Thread Length(A):		1 - 0.9" (25mm)    4 - 2.5" (64mm) 2 - 1.5" (38mm)    5 - 3.5" (89mm) 3 - 2.0" (51mm)    6 - 5.0" (127mm)

Temperature Range:	1 - 2TE: -40° to +221°F (-40° to +105°C) 6 - 3TE: -40° to +302°F (-40° to +150°C)
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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] 4 - 0 - Vs, NPN with LED [Normally High] 5 - 0 - 5V, NPN [TTL] [Normally High] 6 - 0 - Vs, Universal Sink/Source (85°C Max.) 7 - 0 - 5V, Universal Sink/Source (85°C Max.)
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Sensor Type:	1 - Hs, Uni-Polar (South Pole Activated) 2 - H, Bi-Polar 4 - Ho, Omni-Polar Type 6 - HHS, Dual Uni-Polar (South Pole Activated) 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
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Note: A South Pole Activated Sensor is Triggered by the South Pole of a Magnet. Using a Compass as a reference, the needle will point to the south pole of the magnet

Connector:	1 - MS3: 3 Pin MS3102-10SL-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 MS3113-H8A4P BAYONET (See Bulletin 3001) 6 - MD4: 4 Pin MICRO DIN (See Bulletin 3005)
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STYLE:	OPTIONS:	THREADS/DIA.:	A	L
0163	- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3/4-16 UNF	1 - 0.9" (23mm)	1.75" (44mm)
0163B	- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3/4-20 UNEF	2 - 2.0" (51mm)	Fully Threaded
0163M	- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	M18 x 1.5	3 - 2.0" (51mm)	2.5" (64mm)
0163M1	- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	M18 x 1.0	4 - 2.5" (64mm)	3.0" (76mm)
Thread (A) & Housing (L) Length:			5 - 3.5" (89mm)	4.0" (102mm)
			6 - 4.0" (102mm)	Fully Threaded
			7 - 6.0" (152mm)	Fully Threaded
			8 - 8.0" (203mm)	Fully Threaded

SAME AS ABOVE

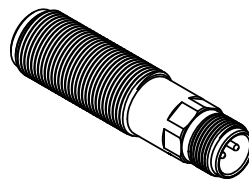
Lead Wire(X):	2 - 2' (.6m) Single Leads 7 - 3' (1m) Shielded Cable 9 - 10' (3m) Shielded Cable	Note: Cable Shielding is not connected to sensor, and is intended to be connected the instrument
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0163X	- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3/4-16 UNF with 1/2-14 NPT Male
0163XB	- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3/4-20 UNEF with 1/2-14 NPT Male
0163Y	- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3/4-16 UNF with 1/2-14 NPT Female
0163YB	- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3/4-20 UNEF with 1/2-14 NPT Female

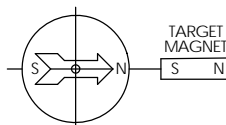
Thread Length(A):	0163X	0163Y
	0 - 0.9" (23mm)	---
	1 - 1.3" (33mm)	1.5" (38mm)
	2 - ---	2.0" (51mm)
	3 - ---	2.8" (71mm)
	4 - ---	4.0" (102mm)
	6 - ---	6.0" (152mm)
	8 - ---	8.0" (203mm)

SAME AS ABOVE

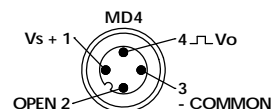
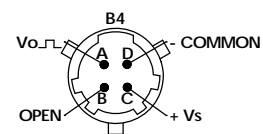
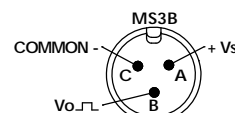
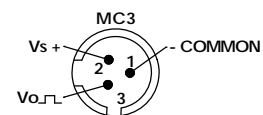
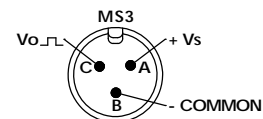
**Notes:** 1. Optional 5/8" hex Wrench flats are designated by adding an "H" after the 4 digit base number.  
2. A Normally Low output signal is available for the NPN output signal option (TTL, Supply Tracking and Open Collector) by adding '-NL' to the end of the Part Number.  
Similarly, a Normally High output signal is available for the PNP output signal option by adding '-NH' to the end of the Part Number.



Shown with 5/8" Hex Wrench Flats option per note #1.



## SINGLE SENSOR (HF) PINOUT



## DUAL SENSOR (HHF) PINOUT

