



PRODUCT DESCRIPTION

SPECTEC's Intrinsically Safe digital output linear and angular position sensors are designed for installation in hazardous locations. They are offered in a wide variety of configurations as outlined on page 2. Custom sensors can also be created to meet specific needs.

For leadwire version refer to IS221-1S221A.

These sensors are designed to sense continuous variations in magnetic field and convert field strength to a proportional voltage. The output voltage produced for zero magnetic field is nominally 2.5V, with a standard transfer function of $\pm 5\text{mV/Gauss}$. Magnetic sensitivity is in one axis only. Several units can be combined to measure (X, Y, Z) magnetic field vectors.

INSTALLATION

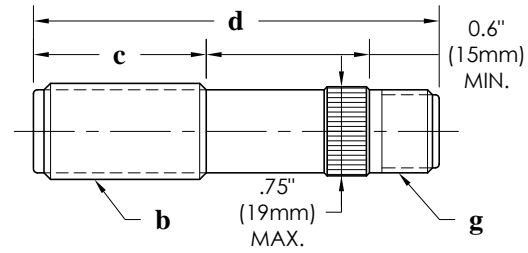
CAUTION: This sensor MUST be installed with an FM approved barrier and following the details specified in the Installation Instruction Document #85047.

SPECIFICATIONS

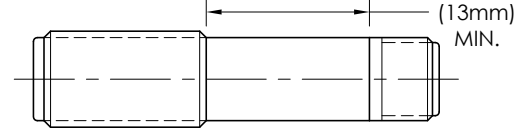
- Supply Voltage:** 8 to 30 Vdc @ $\leq 8\text{ mA}$
- Output Range:**
 - Voltage
 - <0.5V to >4.5V
 - (0.06 - 4.95V typical)
 - Current
 - 1.0mA (source) Max.
 - 10.0mA (sink) Max.
- Quiescent Output Voltage:** $\pm 0.075\text{V}$
 (2.425 to 2.575V at zero field)
 $\pm 30\text{ Gauss}$ equivalent
 (R Load $\geq 1\text{m}\Omega$ for stated accuracy and output)
- Output Resistance:** $100\ \Omega$ typical
- Frequency Range:** DC to $\sim 30\text{ kHz}$
- Sensitivity:** See Page 2
- Sensing Distance:** 0 to > 1.0"
 @ 3000 Gauss typical
- Connection:** Connector, See page 2
- Construction:** 300 Series Stainless Steel
 Solid Epoxy Encapsulation

For mating connector/cable assemblies refer to respective bulletins: 3000 for MO, 3001 for B, 3004 for MC, and 3005 for MD.

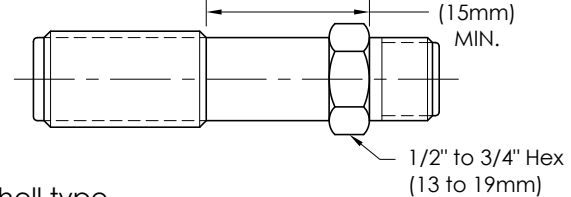
K shell type



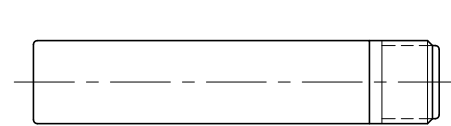
A shell type



H shell type



S shell type



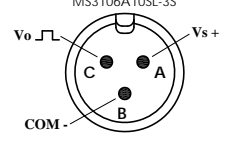
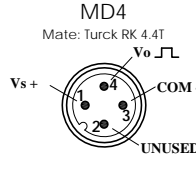
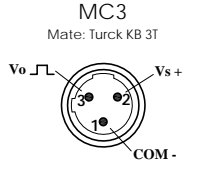
CERTIFICATIONS for IS220

- USA:**
 - Intrinsically Safe
 - Class I, II, III, Division 1
 - GROUP ABCDEFG T6...T5
 - Class I, Zone 0, AEx ia IIC T6...T5
- Canada:**
 - Intrinsically Safe
 - Class I, Division 1
 - GROUP ABCD T6...T5
 - Class I, Zone 0, Ex ia IIC T6...T5
 - T5 @ $-40^\circ\text{C} \leq T_{\text{amb}} \leq +85^\circ\text{C}$
 - T6 @ $-40^\circ\text{C} \leq T_{\text{amb}} \leq +65^\circ\text{C}$

CERTIFICATIONS for IS220A

- ATEX:**
 - II 1 G Ex ia IIC T6...T4 Ga
 - FM08ATEX0066X
- IECEX:**
 - Ex ia IIC T6...T4 Ga
 - IECEX FMG 16.0003X
 - T4 @ $-40^\circ\text{C} \leq T_{\text{amb}} \leq +100^\circ\text{C}$
 - T5 @ $-40^\circ\text{C} \leq T_{\text{amb}} \leq +85^\circ\text{C}$
 - T6 @ $-40^\circ\text{C} \leq T_{\text{amb}} \leq +65^\circ\text{C}$
- CE:**
 - Compliance with
 - EN55011, EN50082-2

FEATURE SELECTION for IS220-xx

SPECTEC P/N	a Shell Type	b Thread / Diameter	c Thread Length	d Overall Length	g Connector	k Sensitivity
IS220-xx or IS220A-xx	K A H	1/2-20 UNF	0.75" (19mm) Minimum	1.75" (44mm) Minimum		Standard: 5 mV/Gauss Medium: 3.125 mV/Gauss High: 2.5 mV/Gauss
		11/16-24 UNEF	13.0" (330mm) Maximum	14.0" (356mm) Maximum		
	S	5/8" (15.9mm)	N/A	1.75" (44mm) Minimum	14.0" (356mm) Maximum	
						

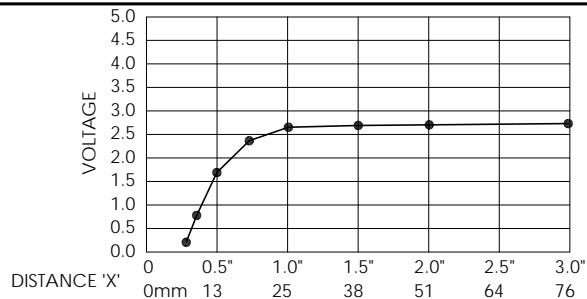
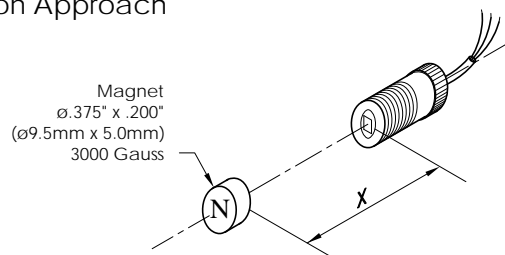
The above features give the range of products available under the certifications. Please specify your specific needs when contacting sales.

SPECIFIC MODELS (also available with ATEX & IECEx certification under the part number IS220A-xx)

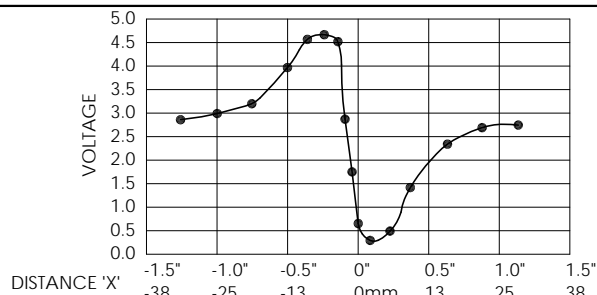
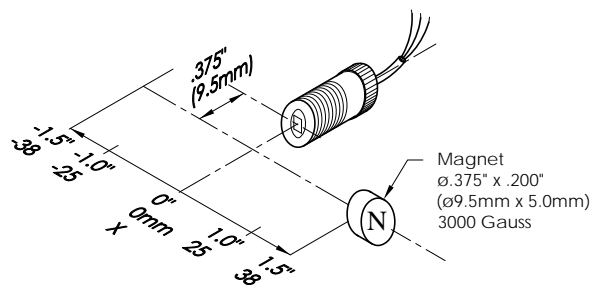
IS220-01	K	5/8-18 UNF	1.8" (45mm)	3.0" (76mm)	MO3	5 mV/Gauss
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TYPICAL PERFORMANCE DATA

Head-on Approach



Fly By



Shaft Rotation

