

### PRODUCT DESCRIPTION

SPECTEC's Intrinsically Safe RF sensors are designed for installation in hazardous locations. They are offered in a wide variety of configurations as outlined on page 2. These sensors are actuated by gear teeth and other ferrous targets but do not cause magnetic drag. These sensors must be used with a matched RF signal conditioner.

Versions with ATEX & IECEx certification are available under part numbers IS70A & IS71A. Custom sensors can also be created to meet specific needs.

### INSTALLATION

**CAUTION: This sensor MUST be installed with an FM approved barrier and following the details specified in the Installation Instruction Document #85046.**

### SPECIFICATIONS

- Coil Resistance:** See page 2
- Frequency Range:** ~0.5 Hz to 5000 Hz
- Air Gap:** up to .160" depending on target mass
- Connection:** Connector or lead wires, See page 2
- Construction:** 300 Series Stainless Steel  
Solid Epoxy Encapsulation

### CERTIFICATIONS for IS70 & IS71

**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 @  $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +65^{\circ}\text{C}$

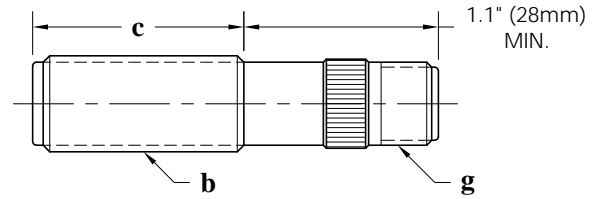
### CERTIFICATIONS for IS70A & IS71A

**ATEX:** II 1 G Ex ia IIC T6...T4 Ga  
 FM08ATEX0066X

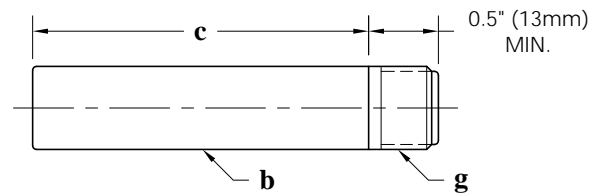
**IECEx:** Ex ia IIC T6...T4 Ga  
 IECEx FMG 16.0003X  
 T4 @  $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +100^{\circ}\text{C}$   
 T5 @  $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +85^{\circ}\text{C}$   
 T6 @  $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +65^{\circ}\text{C}$

**CE:** Compliance with  
 EN55011, EN50082-2

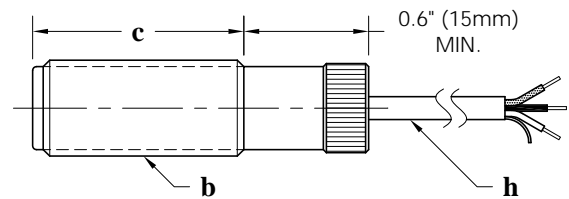
- IS70** K shell type, knurled (shown below)  
 A shell type, all-thread (knurl removed)  
 H shell type, hex (knurl replaced by hex)



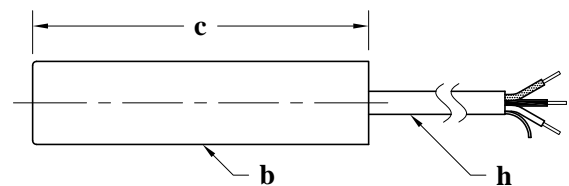
- IS70** S shell type, smooth (custom units available)



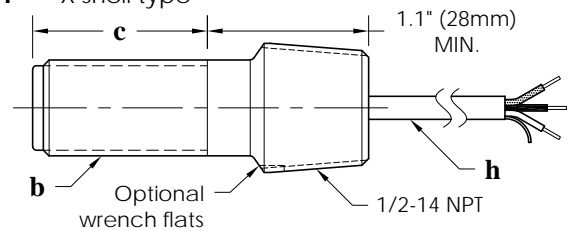
- IS71** K shell type, knurled (shown below)  
 A shell type, all-thread (knurl removed)  
 H shell type, hex (knurl replaced by hex)



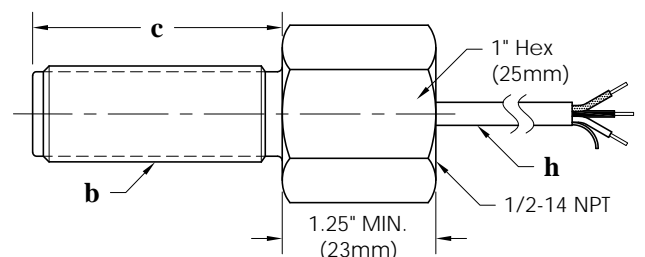
- IS71** S shell type, smooth (custom units available)



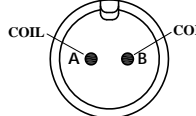
- IS71** X shell type



- IS71** Y shell type



# FEATURE SELECTION for IS70-abceg and IS71-abceh

SPECTEC P/N	a Shell Type	b Thread / Diameter	c Thread Length	e Coil Resistance (Nominal)	Connection Type	
					g Connector (IS70 Only)	h Lead Wires (IS71 Only)
<b>IS70-</b> (Connector Version)  <b>or</b>  <b>IS71-</b> (Lead Wire Version)	<b>K</b> <b>A</b> <b>H</b>	1 - 1/2-20 UNF	0 - 0.75" (19mm)	1 - 4 Ω (.38 mH)	<b>1 - MO</b> Mate: Amphenol MS3106A10SL-4S 	1 - 12" (.3m)
		2 - 5/8-18 UNF	1 - 1.0" to 1.3" (25-33mm)	2 - 12 Ω (1.0 mH)		2 - 36" (1m)
		3 - 11/16-24 UNEF	2 - 1.5" to 1.8" (38-45mm)			3 - 120" (3m)
		4 - 3/4-16 UNF	3 - 2.0" (51mm)			4 - 198" (5m)
	5 - 3/4-20 UNEF	4 - 2.5" (64mm)		5 - 396" (10m)		
		5 - 3/4-20 UNEF	5 - 3.0" to 3.5" (76-89mm)		Lengths of 36" (1m) and longer use shielded cable  18 to 24 AWG (depending on shell size)  PVC or TFE insulation  Shield is not connected to shell, please ground to instrumentation  NOTE: Other lead wire lengths are available.	
		6 - M12x1	6 - 4.0" (101mm)			
		7 - M16x1.5	7 - 6.0" (152mm)			
		8 - M18x1	8 - 8.0" (203mm)			
		9 - M18x1.5	9 - 10.0" (254mm)			
	<b>S</b>	1 - ø1/2" (12.7mm) 2 - ø5/8" (15.9mm)	Same as above			
	<b>X</b> (IS71 Only)	1 - 1/2-20 UNF 2 - 5/8-18 UNF 3 - 11/16-24 UNEF 4 - 3/4-16 UNF 5 - 3/4-20 UNEF	0 - 0.7" (18mm) 1 - 1.3" (33mm) 4 - 2.5" (64mm) 7 - 6.0" (152mm) 8 - 8.0" (203mm)			
	<b>Y</b> (IS71 Only)	2 - 5/8-18 UNF 5 - 3/4-20 UNEF 7 - M16x1.5 8 - M18x1 9 - M18x1.5	1 - 1.1" (28mm) 3 - 2.0" (51mm) 5 - 3.0" (76mm) 6 - 4.0" (101mm) 7 - 6.0" (152mm) 8 - 8.0" (203mm) 9 - 10.0" (254mm)			

## Variants:

IS70A-abcefg ATEX & IECEx Certification

## P/N Examples:

IS70-K3421 K shell type, 11/16-24 x 2.5" thread, 12 Ω coil, MO connector

IS71A-Y2312 ATEX certification, Y shell type, 5/8-18 x 2.0" thread, 4 Ω coil, 36" leads

**Please Note:** Some combinations of options are not possible, please contact sales with any questions.

## Old P/N to New P/N correlations:

IS71-05 → IS71-X3022