

### PRODUCT DESCRIPTION

SPECTEC's Intrinsically Safe frequency to voltage converter and preamplifier for passive magnetic VRS sensors is designed for installation in hazardous locations. The 'ELBY' housing type will fit in ELBY50 and ELBY75 explosion proof junction boxes. The 'A' housing type will fit in a GAUL-16 or similar standard explosion proof junction box.

### INSTALLATION

**CAUTION: This sensor MUST be installed with an FM approved barrier and following the details specified in the Installation Instruction Document #85049.**

### SPECIFICATIONS

<b>Supply Voltage:</b>	12 to 30 Vdc @ $\leq 5$ mA
<b>Input Sensitivity:</b>	50 mVpp or 12 mVpp
<b>Frequency Range</b>	Low Freq: 75 Hz to >1100 Hz
<b>Adjustment (Fmax):</b>	High Freq: 1100 Hz to ~10kHz
<b>Frequency to Output Correlation:</b>	0 Hz input yields 0V signal Fmax input yields 10V (or 5V) signal
<b>Output Voltage:</b>	30mV to 12V for 0-10V out 20mV to 6V for 0-5V out (Full scale, min cal, zero cal @ ZeroV)
<b>Output Settling:</b>	100ms to 3 sec to reach 95% of final value from full scale change
<b>Linearity:</b>	0.15% Typical (0.5% Max)
<b>Temp Coefficient:</b>	between 25° and 40°C, 0.13%/°C
<b>Construction:</b>	Plastic housing Solid Epoxy Encapsulation

### TERMINAL CONNECTIONS

1 - Supply Voltage	4 - Mag Sensor (IS only)
2 - Common	5 - Mag Sensor (IS only)
3 - Output Signal	(see IS40 & IS41)

### FEATURE SELECTION

<b>IS4028-01</b>	Mag Preamp 12mV 0-10V (US & C cert.)
<b>IS4028-02</b>	Mag Preamp 12mV 0-5V (US & C cert.)
<b>IS4028-05</b>	Mag Preamp 50mV 0-10V (US & C cert.)
<b>IS4028-06</b>	Mag Preamp 50mV 0-5V (US & C cert.)

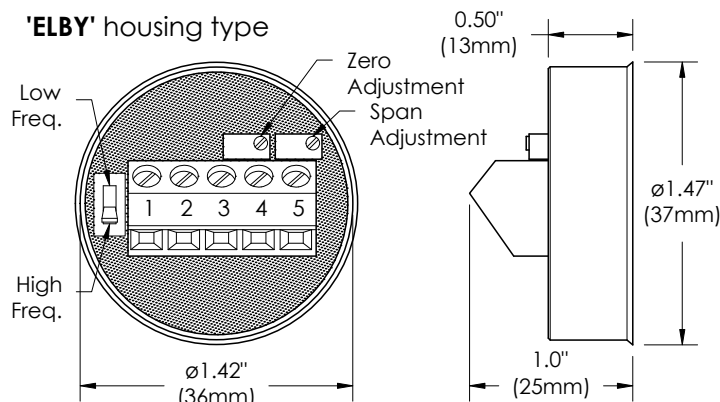
<b>IS4028A-01</b>	Mag Preamp 12mV 0-10V (ATEX, UKEX, & IECEx)
<b>IS4028A-02</b>	Mag Preamp 12mV 0-5V (ATEX, UKEX, & IECEx)
<b>IS4028A-05</b>	Mag Preamp 50mV 0-10V (ATEX, UKEX, & IECEx)
<b>IS4028A-06</b>	Mag Preamp 50mV 0-5V (ATEX, UKEX, & IECEx)

For 'A' housing type add 'A' as a prefix to the P/N suffix:  
(e.g. IS4028-Axx)  
Similarly for the ATEX, UKEX & IECEx version:  
(e.g. IS4028A-Axx)

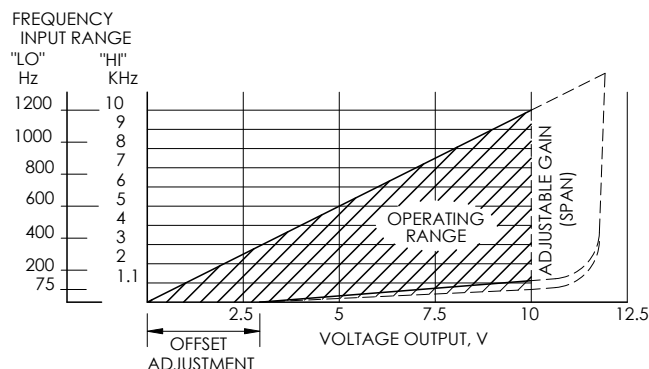
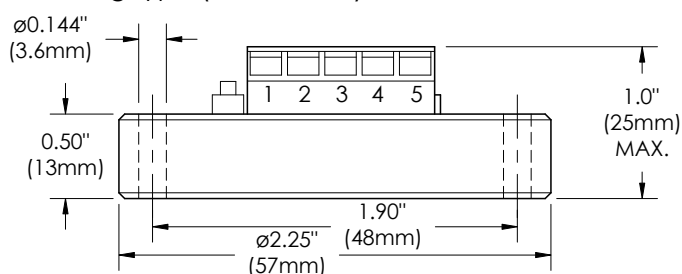
For explosion proof junction box refer to bulletin 4001.

For wiring options see page 2.

### 'ELBY' housing type



### 'A' housing type (mountable)



### CERTIFICATIONS for IS4028

#### USA:

**Intrinsically Safe**  
Class I, II, III, Division 1  
GROUP ABCDEFG T6...T4  
Class I, Zone 0, AEx ia IIC T6...T4



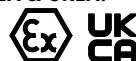
#### Canada:

**Intrinsically Safe**  
Class I, Division 1, GROUP ABCD T6...T4  
Class I, Zone 0, Ex ia IIC T6...T4

T4 @ -40°C  $\leq T_{amb} \leq +85^\circ\text{C}$   
T5 @ -40°C  $\leq T_{amb} \leq +80^\circ\text{C}$   
T6 @ -40°C  $\leq T_{amb} \leq +60^\circ\text{C}$

### CERTIFICATIONS for IS4028A

#### ATEX & UKEX:



#### CE:



#### IECEx:



II 1 G Ex ia IIC T6...T4 Ga  
FM08ATEX0068X  
FM22UKEX0110X

Compliance with  
EN55011, EN50082-1

Ex ia IIC T6...T4 Ga  
IECEx FMG 16.0003X

T4 @ -40°C  $\leq T_{amb} \leq +85^\circ\text{C}$   
T5 @ -40°C  $\leq T_{amb} \leq +80^\circ\text{C}$   
T6 @ -40°C  $\leq T_{amb} \leq +60^\circ\text{C}$



# IS4028 & IS4028A FTV Converter

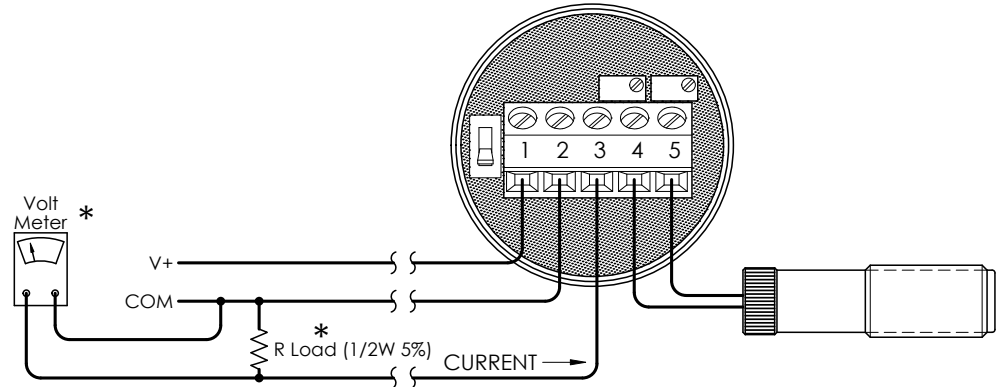
## Wiring Options

### Voltage Mode (3 wire)

For use with long wire runs  
Resistant to line losses & EMI

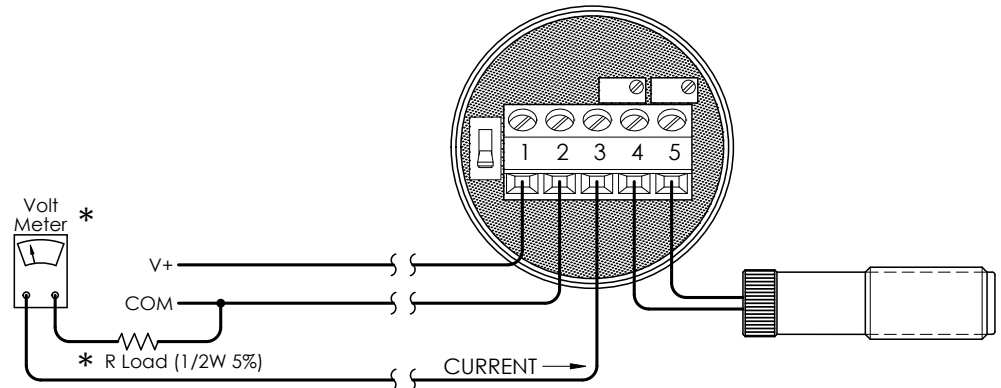
$$R \text{ Load} \geq \frac{V_s - 2 \text{ V}}{0.05 \text{ A}}$$

$V_s$	$R \text{ Load}$
12 V	$\geq 200 \Omega$
24 V	$\geq 440 \Omega$



### Current Mode (3 wire)

$V_{out}$	$R \text{ Load}$
0-5V	$\approx 250 \Omega$
0-10V	$\approx 500 \Omega$



#### \* Note:

1. Load resistor to be installed outside the hazardous area.
2. Conduct measurements outside the hazardous area.