



### PRODUCT DESCRIPTION

SPECTEC's Non-Incendive / Increased Safety 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 #85049N.**

### SPECIFICATIONS

- Supply Voltage:** 12 to 30 Vdc @ ≤ 5 mA
- Input Sensitivity:** 50 mVpp or 12 mVpp
- Frequency Range:** Low Freq: 75 Hz to >1100 Hz
- Adjustment (Fmax):** High Freq: 1100 Hz to ~10kHz
- Frequency to Output Correlation:** 0 Hz input yields 0Vdc signal  
Fmax input yields 5Vdc/10Vdc signal
- Output Voltage:** 30mV to 12V for 0-10V option  
20mV to 6V for 0-5V option  
(Full scale, min cal, zero cal @ 4mA)
- Linearity:** 0.15% Typical (0.5% Max)
- Output Settling:** 100ms to 3 sec to reach 95% of final value from full scale change
- Temp Coefficient:** between 25° and 40°C, 0.13%/°C
- Construction:** Plastic housing  
Solid Epoxy Encapsulation

### TERMINAL CONNECTIONS

- 1 - Supply Voltage
- 2 - Common
- 3 - Signal
- 4 - Mag Sensor
- 5 - Mag Sensor (see N40 & N41)

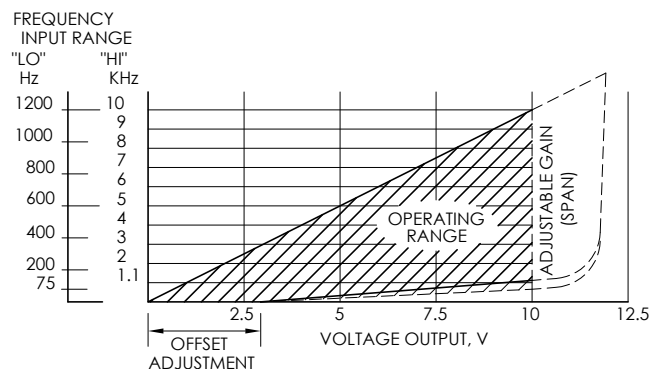
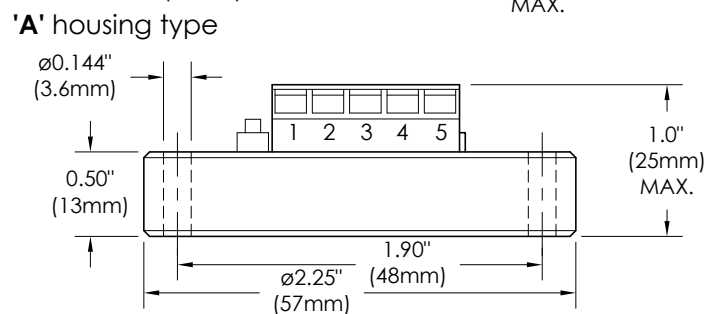
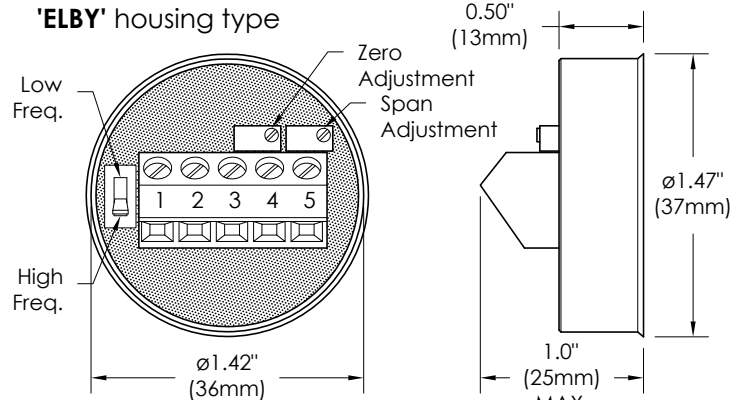
### FEATURE SELECTION

- N4028-01** Mag Preamplifier 12mV 0-10V
- N4028-02** Mag Preamplifier 12mV 0-5V
- N4028-05** Mag Preamplifier 50mV 0-10V
- N4028-06** Mag Preamplifier 50mV 0-5V

For 'A' housing type add 'A' as a prefix to the P/N suffix: (e.g. N4028-Axx)

For explosion proof junction box refer to bulletin 4001.

For wiring options see page 2.



### CERTIFICATIONS for N4028

- ATEX:** II 3 G Ex ec IIC T6...T4 Gc FM08ATEX0069X
- IECEX:** Ex ec IIC T6...T4 Gc IECEX FMG 16.0003X  
 T4 @ -40°C ≤ T<sub>amb</sub> ≤ +85°C  
 T5 @ -40°C ≤ T<sub>amb</sub> ≤ +80°C  
 T6 @ -40°C ≤ T<sub>amb</sub> ≤ +60°C
- USA:** Class I, II, III, Division 2 GROUP ABCDEFG T6...T4 Class I, Zone 0, AEx nC IIC T6...T4
- Canada:** Class I, Division 2 GROUP ABCD T6...T4 Class I, Zone 0, Ex nL IIC T6...T4  
 T4 @ -40°C ≤ T<sub>amb</sub> ≤ +85°C  
 T5 @ -40°C ≤ T<sub>amb</sub> ≤ +80°C  
 T6 @ -40°C ≤ T<sub>amb</sub> ≤ +60°C
- CE:** Compliance with EN55011, EN50082-2

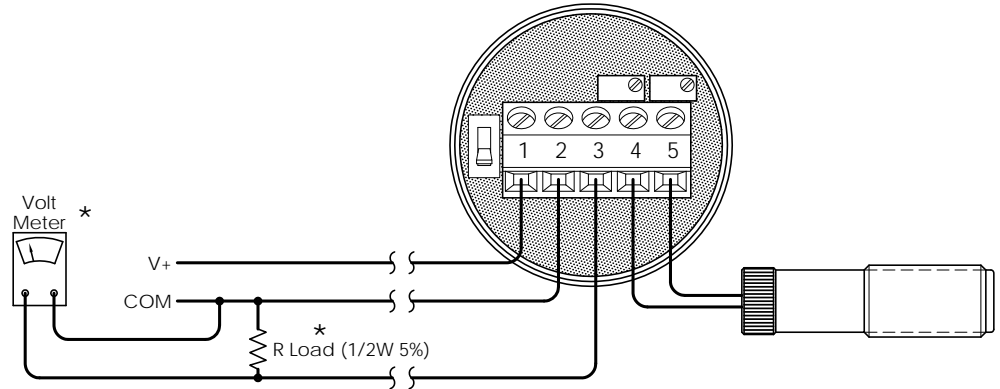
# N4028 FTV Converter Wiring Options

## Voltage Mode (3 wire)

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

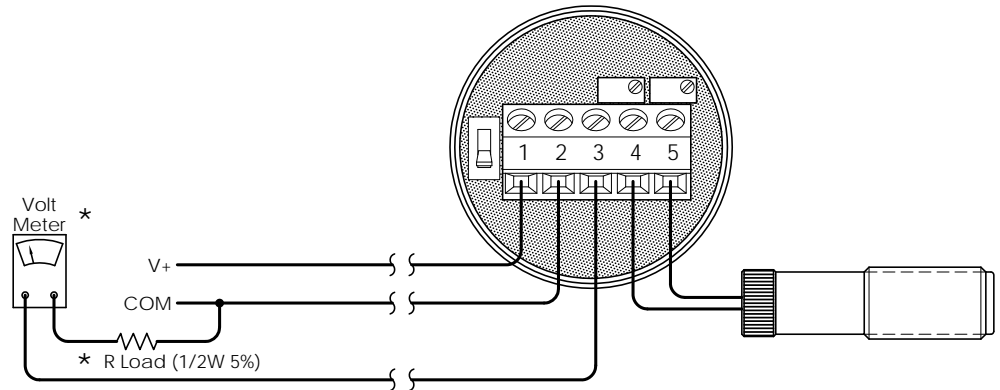
$$R \text{ Load} \geq \frac{V_s - 2 \text{ V}}{0.05 \text{ A}}$$

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



## Current Mode (3 wire)

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



- \* Note:
1. Load resistor to be installed outside the hazardous area.
  2. Conduct measurements outside the hazardous area.