

# ULTRA SLIMPAK® G408-0001/1001

**MODEL**



## Benefits

- Eliminates Ground Loops with 1800 VDC Input-to-Output Isolation
- Easy Field Configurable Input Ranges: 10mV to 100V, 1mA to 100mA
- Field Configurable Output Ranges: 0-5V, 0-10V, 0-1mA, 0-20mA, 4-20mA, or  $\pm 5V$ ,  $\pm 10V$
- Ultra Slim 12.6mm Housing Mounts on Din Rail for High-Density Installations
- Flexible Power Supply Accepts 9 to 30VDC
- ASIC Technology for High Reliability
- Lifetime Warranty



## DC Input Field Configurable Isolator

Provides a Fully Isolated DC Output in Proportion to a DC Input

### DESCRIPTION

The Ultra SlimPak G408 is a DIN rail mount, DC input signal conditioner with 1800VDC isolation between input, output and power. The field configurable input and output offers flexible, wide ranging capability for DC current and voltage signals.

The input of the G408 Ultra SlimPak can be configured for any one of 12 voltage ranges from 10mV to 100V or 6 current ranges from 1mA to 100mA (see table 1). The output is linear to the input and can be set for either 0-5V, 0-10V, 0-1mA, 0-20mA or 4-20mA (for models G408-0001) and -5 to +5V or -10 to +10V (for model G408-1001).

Wide ranging, precision zero and span pots allow 50% adjustability of offset and span turn-down within each of the 18 switch selectable ranges. For example, the 0-2mA input range could be turned down to 0-1mA and provide a full scale output signal (e.g. 4-20mA), or turned down and offset to achieve a 1-2mA/4-20mA I/O combination.

The G408 also accepts bipolar inputs (e.g. 10V range set to bipolar = -10 to +10V) and offers selectable normal or reverse operation (e.g. 4-20mA/20-4mA). The ASIC based I/O channel is optically isolated to 1800VDC and is transformer isolated from the power supply.

### APPLICATION

The Ultra SlimPak G408 field configurable isolator is useful in eliminating ground loops, converting signal levels, and providing signal drive. The field configurable, wide ranging capability ensures maximum flexibility for most DC to DC applications, minimizing spare part requirements.



*Protecting the  
Integrity of  
Industrial  
Process Signals*

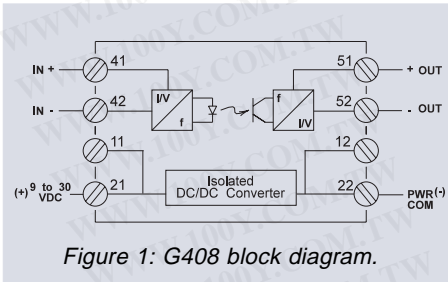
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## DIAGNOSTIC LED

The G408 is equipped with a dual function LED signal monitor. The green, front mounted LED indicates both DC power and input signal status. Active DC power is indicated by an illuminated LED. If the input signal is more than 110% of the full scale range, the LED will flash at 8Hz. Below -10%, the flash rate is 4Hz.

## CONFIGURATION



A major advantage of the G408 is its wide ranging capability and ease of configuration. The G408 has 18 input range settings. Trim potentiometers allow 50% input zero and span adjustability within each of the 18 full scale input ranges.

Unless otherwise specified, the factory pre-sets the Model G408-0001 and G408-1001 as follows:

### G408-0001

Input Range: 4-20mA  
Output Range: 4-20mA

### G408-1001

Input Range: 4-20mA  
Output Range: -10 to +10V

The DC power input accepts any source between 9 and 30V; typically a 12V or 24VDC source is used (see Accessories).

To minimize interference from electrical and magnetic fields, the use of shielded, twisted pair wires on the input and output is recommended.

**WARNING!** Do not attempt to change any switch settings with power applied. Severe damage will result!

Refer to Tables 1 through 4 for the proper switch settings. Use the switches on SW1 to select the input type (voltage or current) and also to select the desired input range and function setting. Use SW2 to select the desired type of output.

## CALIBRATION

1. After configuring the dip switches, connect the input to a calibrated DC source. Connect the output to the actual device load (or a load approximately equivalent to the actual device load value) and apply power.

*Note: To maximize thermal stability, final calibration should be performed in the operating installation, allowing approximately 1 to 2 hours for warm up and thermal equilibrium of the system.*

2. Set the calibrator to the desired minimum input and adjust the zero potentiometer for the desired minimum output.

3. Set the calibrator to the desired maximum input and adjust the span potentiometer for the desired maximum output.

4. Repeat steps 2 and 3, as necessary, for best accuracy.

## PRODUCT ASSISTANCE

For additional information on calibration, operation and installation please contact our Technical Services Group. Call toll-free:

**800-783-6664**

**Table 1: Input Range Selector- Switch settings for both G408-0001 and G408-1001.**

INPUT RANGES		SW1			
Voltage	Current	1	2	3	4
20mV	2mA				
50mV	5mA				
100mV	10mA				
200mV	20mA				
500mV	50mA				
1V	100mA				
2V					
5V					
10V					
25V					
50V					
100V					

**Table 2: Input Range and function settings for both G408-0001 and G408-1001.**

TYPE	SW1			
	5	6	7	8
UNIPOLAR				
REVERSE				
CURRENT				
VOLTAGE				

**Table 3: Output Range Selector-Switch settings for G408-0001.**

RANGE	SW2							
	1	2	3	4	5	6	7	8
G408-0001								
0 to 5V								
0 to 10V								
0 to 1mA								
4 to 20mA								
0 to 20mA								

**Table 4: Output Range Selector-Switch settings for G408-1001.**

RANGE	SW1	
	9	10
-5V to 5V		
-10V to +10V		

KEY

■ = ON

## SPECIFICATIONS

### Input

#### Voltage Input

Range Limits: 10mV to 100V

Impedance: >100K $\Omega$

Overvoltage: 400 Vrms, max.

(Intermittent); 264 Vrms,

max. (Continuous)

#### Current Input

Range Limits: 1mA to 100mA

Impedance: 20 $\Omega$ , typical

Overcurrent: 170mA RMS, max.

Overvoltage: 60VDC

Zero Turn-Up: 50% of full scale input

Span Turn-Down: 50% of full scale input

Common Mode (Input to Ground) 1800 VDC, max.

### Output (G408-0001)

#### Voltage Output

Output: 0-5V, 0-10V

Source Impedance: <10 $\Omega$

Drive: 10mA, max.

#### Current Output

Output: 0-1mA, 4-20mA, 0-20mA

Source Impedance: >100K $\Omega$

Compliance:

0-1mA: 7.5V, max (7.5K $\Omega$ )

4-20mA: 12V, max (600 $\Omega$ )

0-20mA: 12V, max (600 $\Omega$ )

### Output (G408-1001)

#### Voltage Output

Output: -5V to +5V, -10 to +10V

Source Impedance: <10 $\Omega$

Drive: 10mA, max.

### LED Indication (green)

#### Input Range

>110%(approx) input: 8Hz flash

< -10%(approx) input: 4Hz flash

### Accuracy (Including

#### Linearity, Hysteresis)

<2mA/<20mV:  $\pm 0.35\%$  of full scale, typical; 0.5%, max.

>2mA/>20mV:  $\pm 0.1\%$  of full scale, typical; 0.2%, max.

### Response Time (10-90%)

200mSec., typical

### Stability (Temperature)

$\pm 0.025\%$  of full scale/°C, typical;  $\pm 0.05\%$ °C, max.

### Common Mode Rejection

DC to 60Hz: 100dB

### Isolation (Input to Output)

1800VDC between input, output and power

### EMC Compliance (CE Mark)

Emissions: EN50081-1

Immunity: EN50082-2

Safety: EN50178

### Mean Time Between Failures

60K Hours

### Humidity (Non-Condensing)

Operating: 15 to 95%(@ 45°C)

Soak: 90% for 24 hours (@ 65°C)

### Temperature Range <sup>1</sup>

Operating: 0 to 55°C (32 to 131°F)

Storage: -25 to 70°C (-13 to 158°F)

### Wire Terminal

Screw terminals for 12-22AWG

### Power

Consumption: 1.5W typical, 2.5W max.

Range: 9 to 30VDC

### Weight

0.5 lbs.

### Agency Approvals

CSA certified per standard C22.2, No. 0-M91 and 142-M1987 (File No. LR42272). UL recognized per standard UL508 (File No. E99775). CE Conformance per EMC directive 89/336/EEC and Low Voltage 73/23/EEC (Input  $\leq$  75VDC, only).

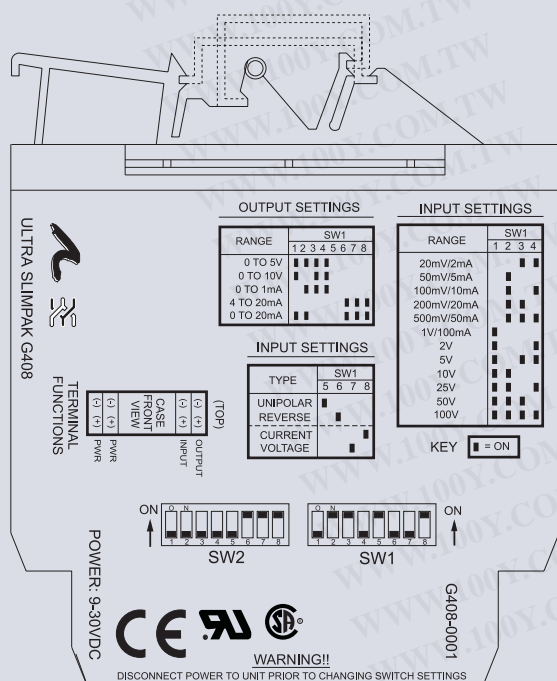


Figure 2: G408-0001 factory calibration; 4-20mA, unipolar input, normal operation, 4-20mA output.

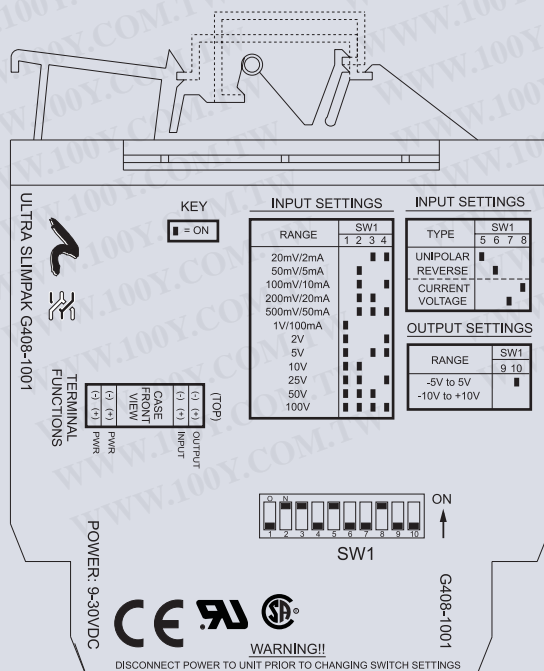


Figure 3: G408-1001 factory calibration; 4-20mA, unipolar input, normal operation -10 to 10V output.



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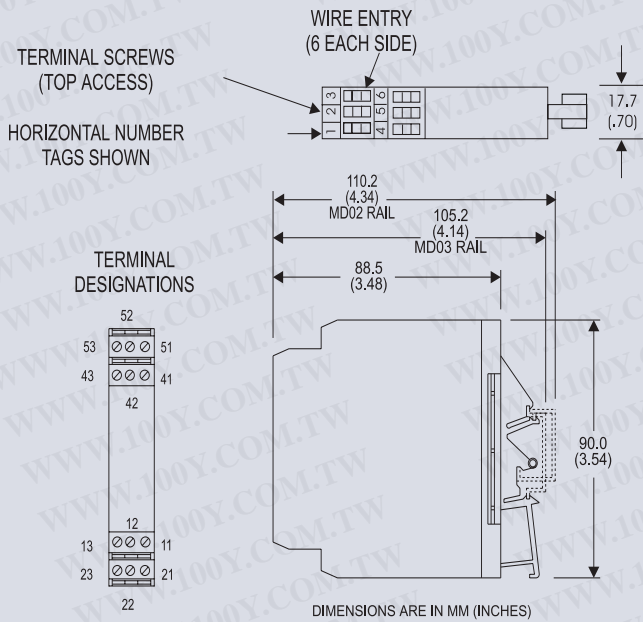


Figure 4: Mechanical dimensions for both G408-0001 and G408-1001.

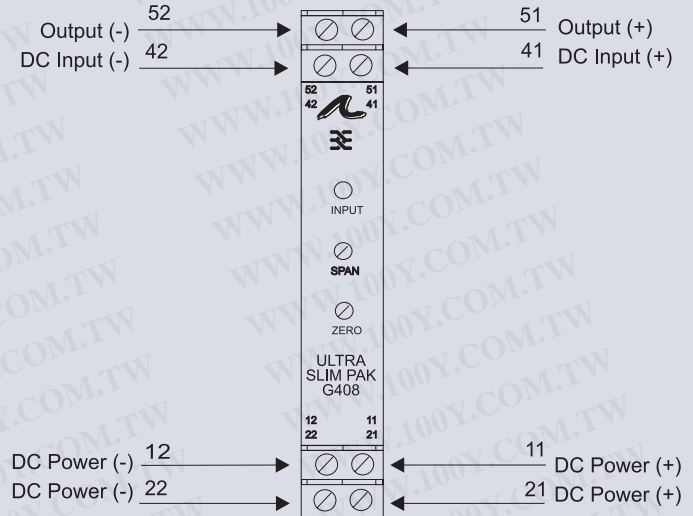


Figure 5: Wiring diagram for both G408-0001 and G408-1001.

## MODELS & ACCESSORIES

### Accessories

All SlimPak "G" series modules will mount on standard TS32 (model MD02) or TS35 (model MD03) DIN rail and include model HS01 heat sink. In addition, the following accessories are available:

MD03	TS35x7.5 DIN rail
G905	24VDC Power Supply (0.5 Amp)
H910	24VDC Power Supply (1 Amp)
H915	24VDC Power Supply (2.1 Amp)
MB03	End Bracket for MD03
C664	I/O Descriptive Tags
C006	1W, 5V, 1% shunt resistor

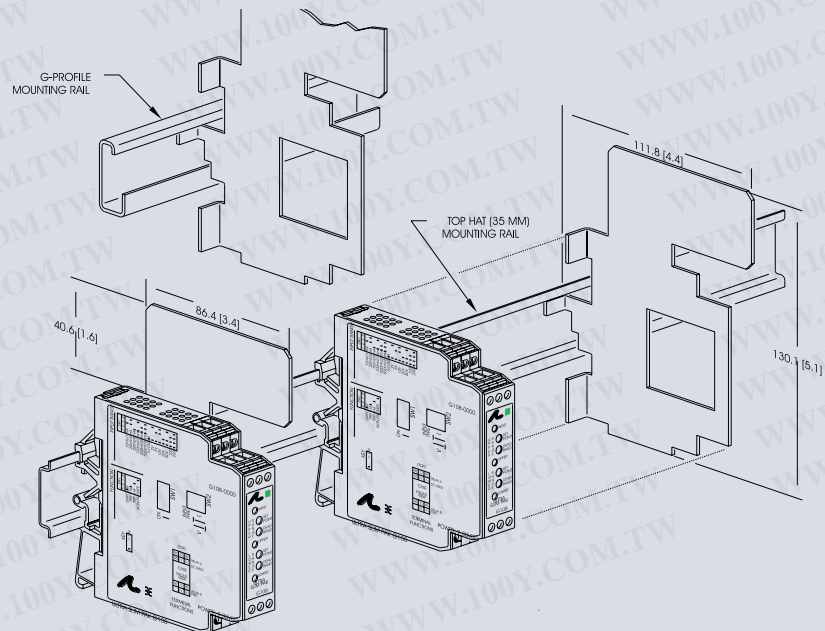
### Ordering Information

Specify:

1. Model: **G408-0001** (standard outputs) or **G408-1001** (bipolar outputs)
2. Accessories: (see Accessories)
3. Optional Custom Factory Calibration; specify **C620** with desired input and output range.

### Pin Connections

- 11 DC Power (+)
- 12 DC Power (-)
- 21 DC Power (+)
- 22 DC Power (-)
- 41 Input (+)
- 42 Input (-)
- 51 Output (+)
- 52 Output (-)



Note: All Ultra SlimPak modules are designed and tested to operate in ambient temperatures from 0 to 55°C, when mounted on a horizontal DIN rail. When five or more modules are mounted on a vertical rail, circulating air or model HS01 Heat Sink is recommended. Please refer to HS01 Technical Bulletin (#721-0549-00) or contact factory for assistance.