

FIELD SELECTABLE NON-ISOLATED Strain Gauge (Bridge) to DC Transmitter **API 4058 G**

G-4

- Wide Range of Input/Output Parameters
- Set-Up via Rotary Switches and Easy-to-use Tables without Opening the Case
- Selectable Voltage or Current Outputs
- Excitation Voltage can Drive Three or Four 350 Ohm Bridges
- Input/Output LoopTracker® LEDs
- LIFETIME WARRANTY

Specifications

Input Ranges

See table below

Output Ranges

Voltage: 0-1 VDC up to ± 10 VDC

Current: 0-2 mA up to 4-20 mA DC

Input Impedance

1 megaohm minimum

Output Capability

Voltage: ± 10 VDC, ± 10 mA max.

Current: 25 mA DC, 20 V compliance

Zero/Span Controls

Top-accessible, multi-turn

Range: $\pm 15\%$ of span typical

Excitation Voltage

10 VDC maximum at 115 mA

Switch selectable from 0-10 VDC in 1 V increments

Fine adjust: $\pm 2.5\%$

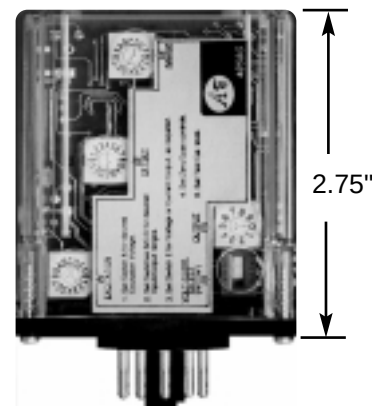
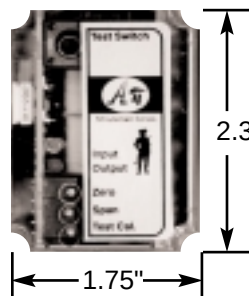
Excitation Stability

$\pm 0.01\%$ per degree C

Response Time

70 msec typical, faster/slower times are available

Dimensions



Common Mode Rejection

100 dB Minimum

Functional Test Pushbutton

Adjustable 0-100% of span

Factory set at 50% of span, $\pm 1.5\%$

Temperature Stability

Better than 0.02% of span per degree C

Ambient Temperature Range

-10 to $+60^\circ\text{C}$ (operating)

Power

Standard: 115 VAC $\pm 10\%$, 50/60Hz, 2.5 W max.

Optional: 230 VAC $\pm 10\%$, 50/60Hz, 2.5 W max.

12 VDC $\pm 5\%$, 125 mA max.

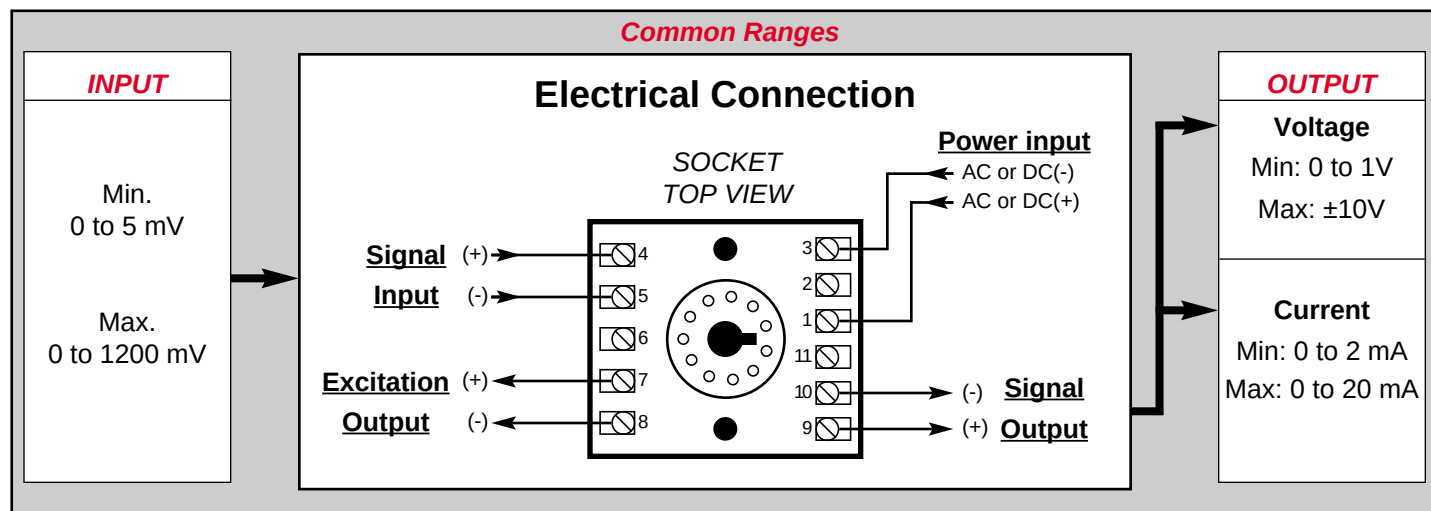
24 VDC $\pm 5\%$, 65 mA max.

12 VAC $\pm 10\%$, 2.5 W max.

24 VAC $\pm 10\%$, 2.5 W max.

9-30 VDC at 3 W with 4 load cells

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FUNCTIONAL DESCRIPTION

The API 4058 G accepts a strain gauge (bridge) input or a "summed" input from up to three or four sensors, and provides a proportional DC voltage or current output. The API 4058 G provides a stable source of excitation voltage to bridge type sensors such as load cells, pressure transducers and strain gauges and amplifies and converts the resulting millivolt signal into the selected output. It includes filtering and processing to allow effective use of low-level transducers in the noisy environments common in industrial applications.

The API 4058 G distinguishes itself from other similar products in that its input, output, excitation and zero offset are field-configurable (without requiring the case to be opened) via external rotary and slide switches. All instructions and most common ranges are available from easy to use tables on the module labels.

The API 4058 G is compatible with bridges from 0.5 mV/V to 120 mV/V allowing for input spans from 0-5 mV up to 0-1200 mV. The DC excitation is field-selectable from 0 to 10 VDC and will drive from one to three or four 350 ohm (or greater) bridges. DC voltage or current outputs are selectable from 0-1 VDC to ± 10 VDC and 0-2 mADC to 4-20 mADC.

An offset switch is available for applications requiring cancellation of sensor offsets or non-zero deadweights (taring).

Standard module power is 115 VAC. Optional power includes 230 VAC, 12/24 VDC/VAC or 9-30 VDC.

The API 4058 G plugs into an industry standard 11-pin socket (sold separately). The socket provided by API (part #API-011) allows for either DIN rail or panel mounting.

OPERATION

Strain gauges and load cells are normally passive devices that are commonly referred to as "bridges" due to the four-resistor Wheatstone bridge configuration used in their design. These sensors require a precise excitation source to produce an output that is directly proportional to the load, pressure, etc. that is applied to the sensor. The exact output (measured in millivolts) is determined by the sensitivity of the sensor (mV/V) and the excitation voltage applied. For example, a load cell rated for 3 mV/V sensitivity and 10 VDC excitation will produce an output of 0 to 30 mV for load variations from 0 to 100%.

The API 4058 G consists of four rotary switches and one slide switch which must be configured to match the specifications of the input sensor(s) and the output requirements. The API 4058 G provides the excitation voltage to the sensors and receives the resulting millivolt signal in return. This input signal is filtered and amplified, then offset, if required, and passed to the output stage. Depending on the output configuration selected, a DC voltage or current output is generated.

API maintains a constant effort to upgrade and improve its products; therefore, specifications are subject to change without notice.

Consult factory for your specific range needs.

LoopTracker®—Reg. TM Absolute Process Instruments, Inc.

UNIQUE FEATURES

API exclusive features include two **LoopTracker® LEDs** and a **Functional Test Pushbutton**. The LoopTracker LEDs (Green for Input; Red for Output) vary in intensity with changes in the Input (process) signal. Monitoring the state of these LEDs can provide a quick visual picture of your process loop at all times. The Functional Test Pushbutton provides a fixed output (independent of the input) when held depressed. The Test Output level can be field-adjusted via a top-accessible multiturn pot to any value from 0 to 100% of the calibrated range. Both the LoopTracker LEDs and Functional Test Pushbutton greatly aid in the reduction of time during initial startup and/or troubleshooting.

RELATED PRODUCTS

The following products are also available for use with a strain gauge (bridge) input. Refer to the appropriate data sheets in this section for details.

API 4058 G DF

Same as API 4058 G, Fast Response Time

API 4058 G4

Same as API 4058 G, Four (4) Load Cell (Bridge) Drive

API 4059 G

Same as API 4058 G4, Optically Isolated Input to Output, Non-Interactive Zero/Span Adjustments

API 1500 G

Single Setpoint Alarm

API 1520 G

Dual Setpoint Alarm

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