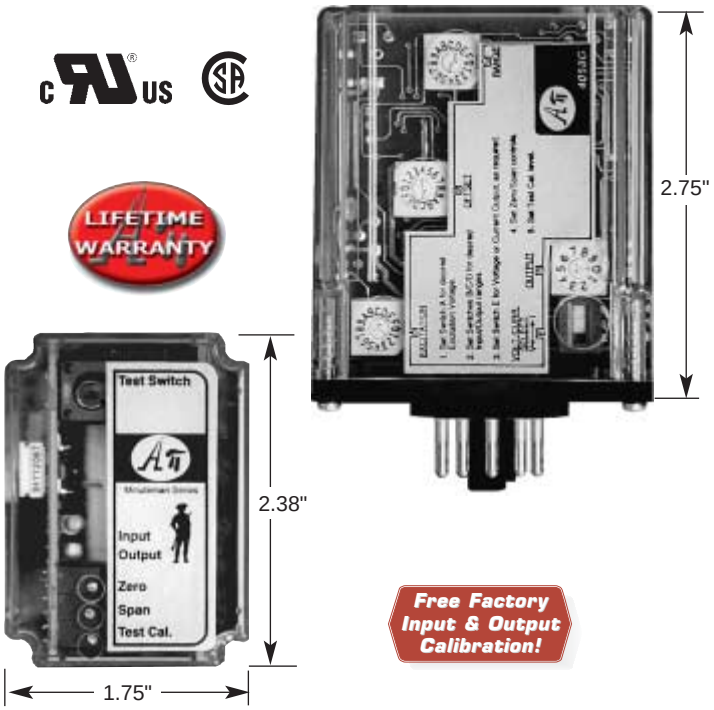
API 4058 G

Strain Gauge (Bridge) to DC Transmitter, Non-Isolated

Field Selectable
One Minute Setup!

Input: *0-5 mV to 0-1200 mVDC, 4-10 V Excitation*
Output: *0-1 V to ±10 VDC or 0-2 mA to 4-20 mA*

- ***Drive up to Four 350 Ω Bridges***
- ***Selectable Excitation Voltage***
- ***Selectable Voltage or Current Outputs***
- ***Easy-to-use Setup Tables on Housing***
- ***Set-up via External Rotary Switches***
- ***Input and Output LoopTracker® LEDs***



LIFETIME WARRANTY

Free Factory Input & Output Calibration!

Applications

- **Strain Gauge or Load Cell Weighing Systems**
- **Strain Gauge Pressure Sensors**
- **Monitor Tanks, Hoppers, Scales, Etc.**

Specifications

Input Ranges
Minimum: 0 to 5 mV
Maximum: 0 to 1200 mV

Input Impedance
1 MΩ typical

Excitation Voltage
10 VDC maximum at 115 mA
Drives up to four 350 Ω bridges at 10 VDC
Switch-selectable, 0 to 10 VDC in 1 V increments
Fine adjust, ±2.5% via multiturn potentiometer

Excitation Stability
±0.01% per °C

LoopTracker®
Variable brightness LEDs indicate input/output loop level and status

Output Ranges

	Minimum	Maximum
Voltage (±10 mA max.):	0 to 1 VDC	±10 VDC
Current (20 V compliance):	0 to 2 mA	0 to 25 mA

Zero Offset
±100% of span in 15% increments

Output Linearity
Better than ±0.1% of span

Output Zero and Span
Multiturn potentiometers to compensate for load and lead variations
±15% of span adjustment range typical

Functional Test Button
Sets output to test level when pressed. Potentiometer factory set to approximately 50% of span, adjustable 0-100% of span

Response Time
70 milliseconds typical, faster response times are available

Common Mode Rejection
100 dB minimum

Ambient Temperature Range
–10°C to +60°C operating

Temperature Stability
Better than ±0.02% of span per °C

Power
Standard: 115 VAC ±10%, 50/60 Hz, 3.5 W max.
A230 option: 230 VAC ±10%, 50/60 Hz, 2.5 W max.
D12 option: 12 VDC, 3 W typical with 4 load cells
D24 option: 24 VDC, 3 W typical with 4 load cells

Models and Options

API 4058 G Field selectable strain gauge to DC transmitter, non-isolated, 115 VAC

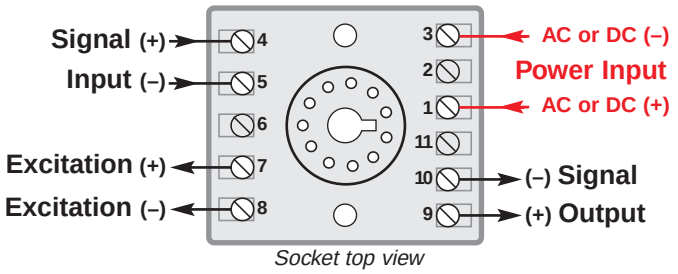
Options—Specify on Order

A230	Powered by 230 VAC, 50/60 Hz
D12	Powered by 12 VDC
D24	Powered by 24 VDC
M01	Toggle switch with inernal shunt calibration resistor
DF	Fast response, 1 millisecond nominal response time
U	Conformal coating for moisture resistance

Accessories—See other side

Electrical Connections

*Order **API 011** or **API 011 FS** socket separately*



Socket top view

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API 4058 G Strain Gauge to DC Transmitter

FUNCTIONAL DESCRIPTION

The API 4058 G accepts a strain gauge (bridge) input or a summed input from up to 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 opening the case, via external rotary and slide switches. All instructions and most common ranges are on 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.

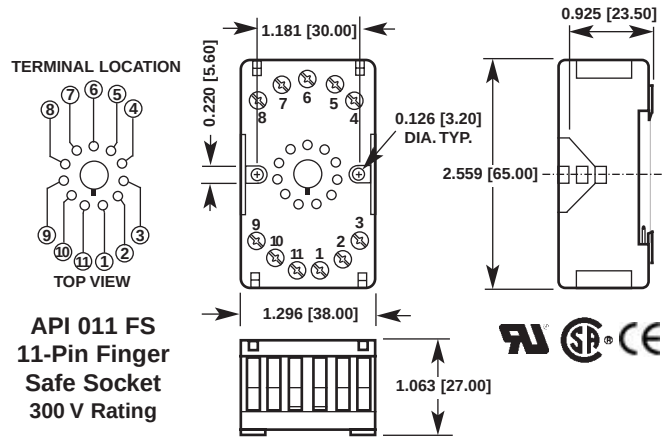
The DC excitation is field-selectable from 0 to 10 VDC and will drive from one to four 350 Ω (or greater) bridges.

DC voltage or current outputs are selectable from 0-1 VDC to ±10 VDC and 0-2 mADC to 4-20 mADC.

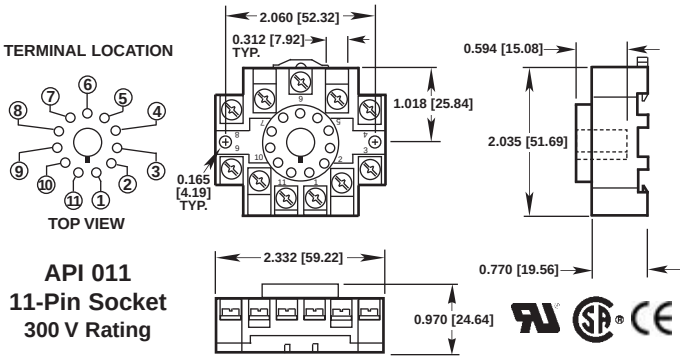
An offset switch is standard for applications requiring cancellation of sensor offsets or non-zero deadweights (taring).

Standard module power is 115 VAC. Optional power includes 230 VAC, 12 VDC, or 12 VAC.

The API 4058 G plugs into an industry standard 11-pin socket sold separately. Sockets API 011 and finger-safe API 011 FS allow either DIN rail or panel mounting.



API 011 FS
11-Pin Finger Safe Socket
300 V Rating



API 011
11-Pin Socket
300 V Rating

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 and output signals. Monitoring the state of these LEDs can provide a quick visual picture of your system 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 multiturn potentiometer.

Both the LoopTracker LEDs and functional test pushbutton greatly aid in saving time during initial startup and/or troubleshooting.

A bridge excitation power supply is standard and can be used to drive from one to four 350 Ω (or greater) bridges.

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 of the sensor (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%.

3 mV/V sensitivity x **10** VDC excitation = **30** mV range

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.

RELATED PRODUCTS

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

API 4059 G
Strain gauge (bridge) to DC isolator. Field selectable excitation voltage, input spans, output voltage or current and offset (±100% of span). Optically isolated input to output and non-interactive zero and span adjustments.

API SUM
Summing board which accepts either one API 4058 G or one API 4059 G and up to 4 bridge inputs. The API SUM greatly simplifies wiring and installation of multiple load cell applications.

API 1500 G
Single setpoint alarm

API 1520 G
Dual setpoint alarm

ACCESSORIES

API 011	11-pin socket
API 011 FS	11-pin finger-safe socket
API TK36	DIN rail, 35 mm W x 39" L, aluminum

API maintains a constant effort to upgrade and improve its products. Specifications are subject to change without notice. Consult factory for your specific requirements.

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