



API 4050 G

DC to DC Transmitter

Narrow Input Span
Non-Isolated

Input: 0-10 mV to 0-100 mV, 0-100 μ A to 1 mA
Output: 0-1 V to $\pm$ 10 V or 0-1 mA to 4-20 mA

- Low Level Current and Voltage Inputs
- Factory Set Input and Output Ranges
- Input and Output LoopTracker® LEDs
- Functional Test Pushbutton
- Built-In Loop Power Supply

Applications

- Convert, Boost, or Rescale Process Signals
- Interface Process Signals with Panel Meters, Recorders, Data Acquisition Cards, PLCs, DCS Systems, SCADA Systems

Specifications

Input Range

Factory Configured—Please specify input range

	Minimum	Maximum
Voltage:	0-10 mVDC	0-100 mVDC
Current:	0-100 μ ADC	0-1 mADC

Consult factory for special ranges

Input Impedance (Voltage)

200 k Ω minimum

Input Voltage Burden (Current)

1.25 VDC maximum

Input Protection, Common Mode

750 VDC or 750 VAC_p

System voltages must not exceed socket voltage rating

Input Loop Power Supply

18 VDC nominal, unregulated, 25 mADC

Maximum ripple, less than 1.5 V_{p-p}

LoopTracker®

Variable brightness LEDs indicate input/output loop level and status

Output Range

Factory Configured—Please specify output range

	Minimum	Maximum
Voltage ($\pm$ 10 mA max.):	0-1 VDC	$\pm$ 10 VDC
Current (20 V compliance):	0-1 mADC	0-20 mADC

Consult factory for special ranges

Output Linearity

Better than $\pm$ 0.1% of span

Response Time

70 milliseconds typical

Output Zero and Span

Multiturn potentiometers to compensate for load and lead variations
 $\pm$ 15% of span adjustment range typical

Functional Test Button

Sets output to test level when pressed

Factory set to approximately 50% of span

Ambient Temperature Range

-10°C to +60°C operating

Temperature Stability

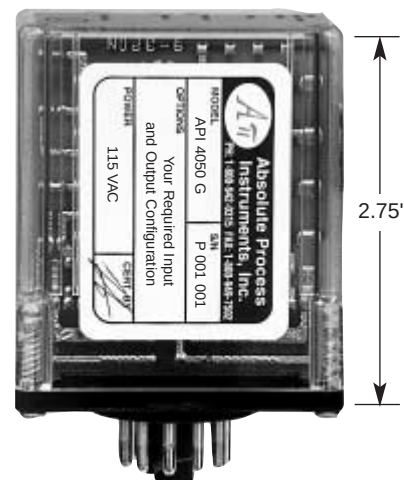
Better than $\pm$ 0.02% of span per °C

Power

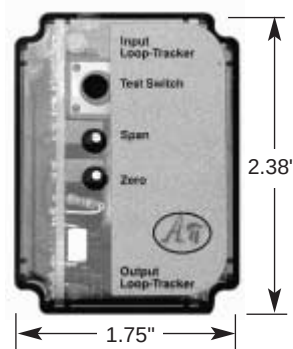
Standard: 115 VAC $\pm$ 10%, 50/60 Hz, 2.5 W max.

A230 option: 230 VAC $\pm$ 10%, 50/60 Hz, 2.5 W max.

D option: 9-30 VDC, 2.5 W typical



**Free Factory
Input & Output
Calibration!**



Models and Options

Factory Configured—Please specify input/output ranges and options

API 4050 G DC to DC transmitter, non-isolated, narrow input span, with loop power supply, 115 VAC

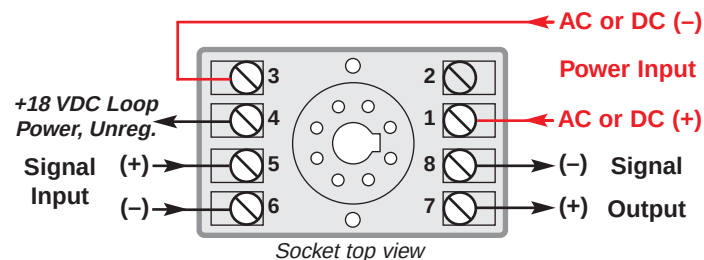
Options—Specify on Order

A230	Powered by 230 VAC, 50/60 Hz
D	Powered by 9-30 VDC
DF	Fast response, 1 millisecond nominal response time
M01	Input/output reversal, such as 4-20 mA in to 20-4 mA out
EXTSUP	Open collector output when a "sinking" output is required for an external loop supply
U	Conformal coating for moisture resistance

Accessories—See other side

Electrical Connections

Order **API 008** or **API 008 FS** socket separately



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API 4050 G DC to DC Transmitter

FUNCTIONAL DESCRIPTION

The API 4050 G accepts a DC voltage or current input and provides a non-Isolated DC voltage or current output that is linearly related to the input. The API 4050 G utilizes an ultra-stable input amplifier for reliable operation with input signals as low as 10 mVDC.

Typical applications include signal scaling, signal conversion, signal boosting or a combination of the three. The module power supply is transformer isolated from the input and output. Standard power is 115 VAC. Options include 230 VAC or 9-30 VDC.

The API 4050 G plugs into an industry standard 8-pin octal socket available separately. Sockets API 008 and finger-safe API 008 FS allow either DIN rail or panel mounting.

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 process input and output signals. Monitoring the state of these LEDs can provide a quick visual picture of your process loop at all times.

When held depressed, the functional test pushbutton will provide a fixed output (independent of the input) factory set to approximately 50% of the calibrated output range.

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

Also standard on the API 4050 G is an 18 VDC unregulated loop excitation supply. This supply can be used to power passive input devices, often eliminating the need for an additional external power supply.

OPERATION

The API 4050 G is factory configured to your exact input and output requirements. The input is filtered, either amplified or attenuated as required, then passed through to the output stage. The +18 VDC loop excitation supply of the API 4050 G may be used in place of an additional external power source to power passive input devices.

CALIBRATION

The API 4050 G is pre-configured at the factory to the input and output ranges specified when purchased. Top-mounted, multi-turn Zero and Span potentiometers are available should fine-tuning be necessary; however, major range changes will require factory modification.

1. If fine-tuning is necessary, apply the appropriate power to the module and allow a minimum 20 minute warm up time.
2. Using an accurate calibration source, provide an input to the module equal to the minimum required for the application.
3. Using an accurate measurement device for the output, adjust the Zero potentiometer for the exact minimum output desired.
4. Next, set the Input at maximum, then adjust the Span pot for the exact maximum output desired.
5. Repeat adjustments for maximum accuracy.
6. Finally, the Test Pushbutton range may be set to provide the desired output when depressed.

RELATED PRODUCTS

The following products are also available for use with a DC Voltage or Current Input. Refer to the appropriate data sheets in this section for details.

API 4010 G Same as API 4050 G, but wider input spans

API 4310 G Same as API 4050 G, but optically isolated input to output

API 4300 G Same as API 4010 G, but optically isolated input to output

API 4380 G Same as API 4300 G, but field selectable inputs and outputs

API 4380 DIN Same as API 4380 G, but DIN style case, universal power

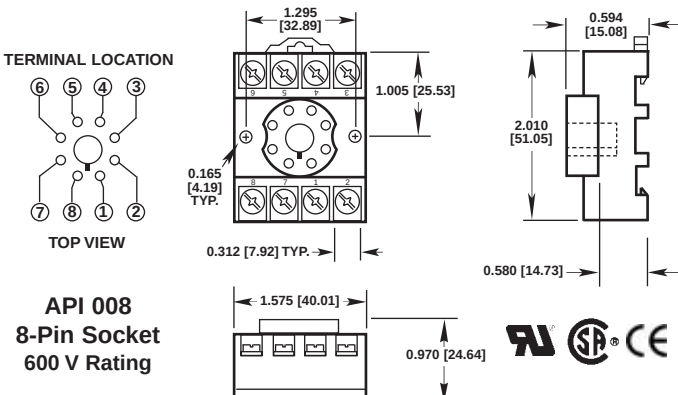
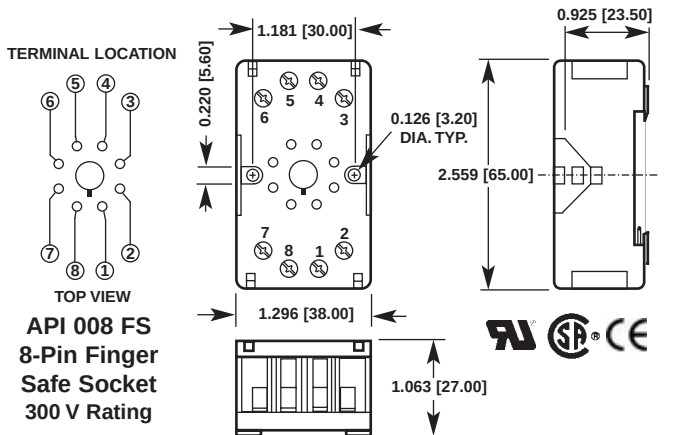
API 4380 DD Same as API 4380 DIN, but 9-30 VDC power

ACCESSORIES

API 008 8-pin socket

API 008 FS 8-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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