API 6010 G AC to DC Transmitter

Full Isolation

Input: *0-50 mVAC to 0-300 VAC, 0-1 mAAC to 900 mAAC*
Output: *0-1 V to ±10 VDC or 0-1 mA to 4-20 mA*

- ***Precision Internal AC/DC Converter***
- ***Input and Output LoopTracker® LEDs***
- ***Full 2000 V Input/Output/Power Isolation***
- ***Functional Test Pushbutton***

Applications

- **Convert AC Signals to DC Process Signal**
- **Monitor For Abnormal Voltage Drops**
- **Detect Overloads, Monitor AC Tach Signals**

Specifications

Input Range
Factory Configured—Please specify input range

	Minimum	Maximum
Voltage:	50 mVAC	300 VAC
Current:	1 mAAC	900 mAAC

System voltages must not exceed socket voltage rating
See 6010 G 5A & 6010 G 20A data sheet for higher current inputs

Input Impedance (Voltage)
200 kΩ minimum

Input Voltage Burden (Current)
1.0 V_{RMS} maximum

Input Protection, Common Mode
750 VDC or 750 VAC_p

Input Loop Power Supply
18 VDC nom., unregulated, 25 mADC, max. 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 (±10 mA max.):	0-1 VDC	±10 VDC
Current (20 V compliance):	0-1 mADC	0-20 mADC

Consult factory for other ranges

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

Output Linearity
Better than ±0.1% of span

Output Ripple and Noise
Less than 10 mV_{RMS} at 40 Hz and above

Functional Test Button
Sets output to test level when pressed
Factory set to approximately 50% of span

Response Time
150 milliseconds typical

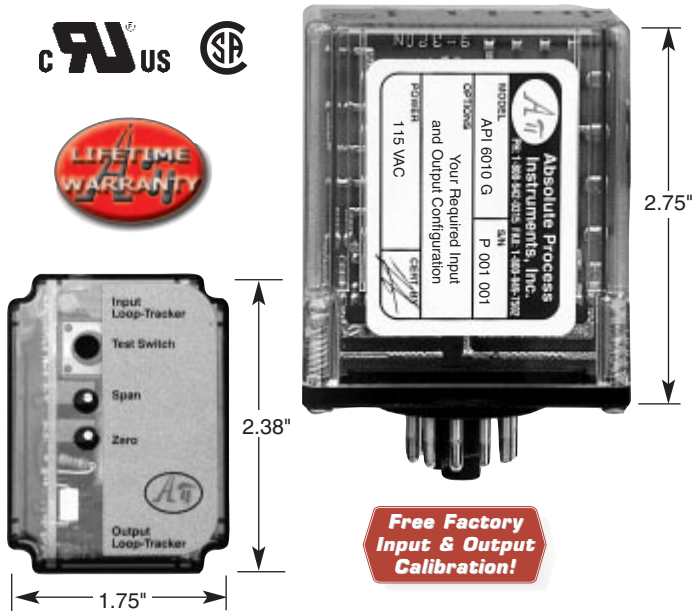
Isolation
2000 V_{RMS} minimum
Full isolation: power to input, power to output, input to output

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, 2.5 W max.
A230 option:	230 VAC ±10%, 50/60 Hz, 2.5 W max.
D option:	9-30 VDC, 2.5 W typical



Models & Options

Factory Configured—Please specify input and output ranges

API 6010 G	AC to DC transmitter, isolated, with loop power supply, 115 VAC

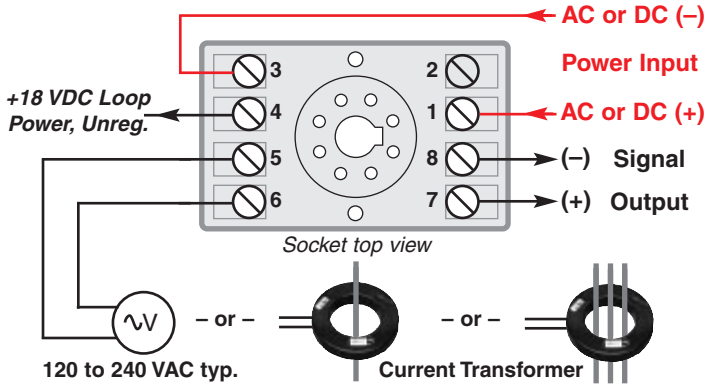
Options—Specify on Order

A230	Powered by 230 VAC, 50/60 Hz
D	Powered by 9-30 VDC
M09	High voltage output to 25 VDC
HC	High current output, >20 mA to 50 mADC
EXTSUP	Open collector output when a "sinking" output is required for use with 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*
*Order **2RL**, **5RL**, **7RL**, **8RL** series current transfomer separately*



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API 6010 G AC Input to DC Transmitter

FUNCTIONAL DESCRIPTION

The API 6010 G accepts an AC voltage or current input and provides an optically isolated DC voltage or current output that is linearly related to the input. Typical applications include signal isolation, signal conversion, signal boosting or a combination of the three.

The API 6010 G is commonly used to monitor line voltages or currents (either direct or with the use of a CT) for speed control, preventive maintenance, load shedding, etc. For true RMS (non-sinusoidal) conversions, refer to model API 6380 GS.

The optical isolation between input and output makes this module useful for ground loop elimination or noise pickup reduction. In addition, the module power supply is isolated, resulting in full 3-way (input, output, power) isolation. Standard power is 115 VAC with 230 VAC or 9-30 VDC optional.

The API 6010 G can be factory configured for virtually any AC voltage input range from 0-50 mVAC thru 0-300 VAC or any AC current input range from 0-1 mAAC up to 0-900 mAAC. Current input ranges of 900 mAAC or greater are possible using the model API 6010 G 5A or the API 6010 G 20A which include a socket and current shunt assembly.

DC voltage outputs can be factory configured from 0-1 VDC thru 0-10 VDC, including bi-polar ranges and offsets such as ±5 VDC, ±10 VDC, 1-5 VDC, etc. DC current outputs range from 0-1 mADC thru 0-20 mADC, including offsets such as 4-20 mADC. Consult the factory to discuss your specific requirements or available options.

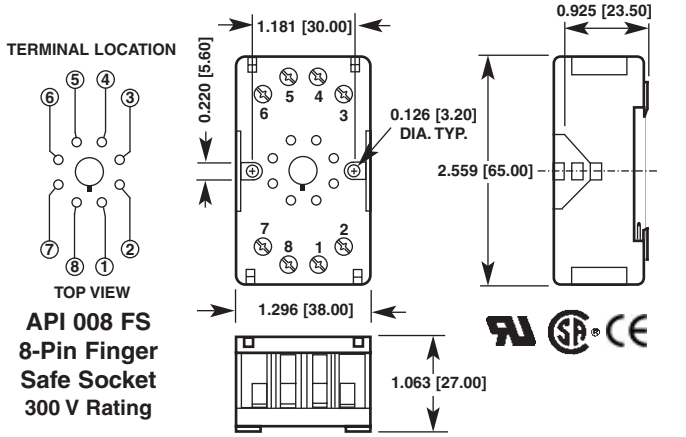
The API 6010 G plugs into an industry standard 8-pin socket sold separately. Sockets API 008 and finger-safe API 008 FS allow either DIN rail or panel mounting.

UNIQUE FEATURES

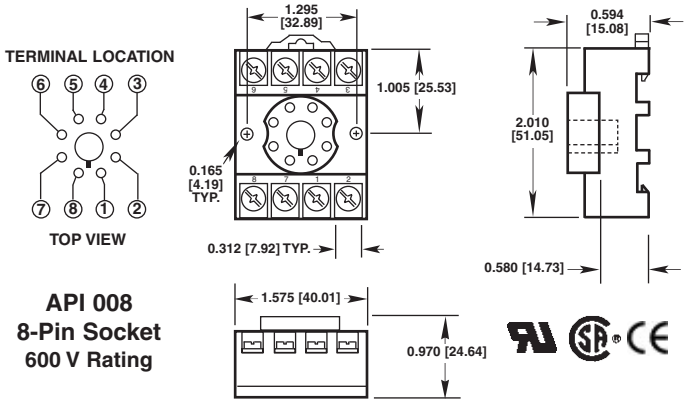
API exclusive features include two ***LoopTracker***® LEDs and a **Functional Test Pushbutton**. The LoopTracker LEDs (Green for input, Red for output) vary in intensity with changes in the input signal. Monitoring these LEDs can provide a quick visual picture of your process loop at all times.

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

An 18 VDC unregulated loop excitation power supply is standard and can be used to power passive input devices.



API 008 FS
8-Pin Finger Safe Socket
300 V Rating



API 008
8-Pin Socket
600 V Rating

OPERATION

Depending upon the configuration required, the API 6010 G input is either amplified or attenuated, then filtered and processed by a precision full-wave rectification circuit. The resulting signal is passed thru a lowpass active filter which provides a DC voltage representing the average value of the input. The module is calibrated assuming a sinusoidal input.

This DC voltage is passed through an optical isolation circuit to the output stage where it is converted to the DC voltage or current required in the application.

RELATED PRODUCTS

The following products are also available for use with an AC voltage or AC current input. Refer to the appropriate data sheets in for details.

API 6380 G
Same as API 6010 G, but field selectable for AC voltage or AC current inputs and DC voltage or DC current outputs.

API 6380 G S
Same as API 6380 G, but accepts non-sinusoidal inputs. Output is proportional to the true RMS value of the input.

API 6010 G 5A, API 6010 G 20A
Same as API 6010 G, but includes mounting base/current shunt assembly for use with high AC current inputs from 900 mAAC to 5 AAC and from 5 AAC to 20 AAC.

API 1600 G, API 1620 G
AC voltage or current input, single or dual setpoint alarms.

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 Current Transformers
See Current Sensor Products price sheet for details

1.05" ID x 2.46" OD x 1.05" W

Part #	Ratio
2RL-500	50:5
2RL-600	60:5
2RL-750	75:5
2RL-800	80:5
2RL-101	100:5
2RL-1250	125:5
2RL-151	150:5
2RL-201	200:5
2RL-251	250:5
2RL-301	300:5

2.50" ID x 4.58" OD x 1.10" W

Part #	Ratio
7RL-101	100:5
7RL-151	150:5
7RL-201	200:5
7RL-251	250:5
7RL-301	300:5
7RL-401	400:5
7RL-501	500:5
7RL-601	600:5
7RL-751	750:5
7RL-801	800:5
7RL-102	1000:5
7RL-122	1200:5
7RL-152	1500:5
7RL-162	1600:5

1.56" ID x 3.56" OD X 1.10" W

Part #	Ratio
5RL-500	50:5
5RL-750	75:5
5RL-101	100:5
5RL-151	150:5
5RL-201	200:5
5RL-251	250:5
5RL-301	300:5
5RL-401	400:5
5RL-501	500:5
5RL-601	600:5
5RL-751	750:5
5RL-801	800:5
5RL-102	1000:5
5RL-122	1200:5

3.25" ID x 5.73" OD X 1.15" W

Part #	Ratio
8RL-201	200:5
8RL-251	250:5
8RL-301	300:5
8RL-401	400:5
8RL-501	500:5
8RL-601	600:5
8RL-751	750:5
8RL-801	800:5
8RL-102	1000:5
8RL-122	1200:5
8RL-152	1500:5

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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