API 4300 G DC to DC Transmitter

Full Isolation

Input: 0-100 mV to 0-500 VDC, 0-1 mA to 900 mADC
Output: 0-1 V to ±10 VDC or 0-1 mA to 4-20 mA

- ***Full 2000 V Input/Output/Power Isolation***
- ***Factory Set Input and Output Ranges***
- ***Input and Output LoopTracker® LEDs***
- ***Functional Test Pushbutton***
- ***Built-In Loop Power Supply***



Applications

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

Specifications

Input Ranges

Factory Configured—Please specify range. See table on other side for common ranges or consult factory for special ranges.

	Minimum	Maximum
Voltage:	0-100 mVDC	0-500 VDC with API 008 socket only
Current:	0-1 mADC	0-900 mADC

System voltages must not exceed socket voltage rating

Input Impedance (Voltage)

200 kΩ minimum

Input Voltage Burden (Current)

1.25 VDC maximum

Output Zero and Span

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

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 or consult factory

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

Output Linearity

Better than ±0.1% of span

Output Ripple and Noise

Less than 10 mV_{RMS}

Functional Test Button

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

Response Time

70 milliseconds typical

Common Mode Rejection

120 dB minimum

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 ±0.04% 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 and Options

Factory Configured—Please specify input/output ranges and options

API 4300 G	DC to DC transmitter, isolated, with loop power supply, 115 VAC

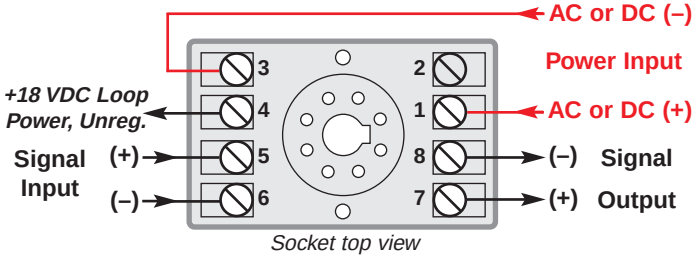
Options—Specify on Order

A230	Powered by 230 VAC, 50/60 Hz
D	Powered by 9-30 VDC
5A	Up to 5 amp DC input with socket and 25 W shunt
DF	Fast response, 1 millisecond nominal response time
HC	High current output, >20 mA to 50 mADC
M01	Input/output reversal, such as 4-20 mA in to 20-4 mA out
M09	High voltage output to 25 VDC
EXTSUP	Open collector output when a "sinking" output is required
U	Conformal coating for moisture resistance

Accessories—See other side

Electrical Connections

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



Socket top view

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API 4300 G DC to DC Transmitter

FUNCTIONAL DESCRIPTION

The API 4300 G accepts a DC 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 optical isolation between input and output makes this module useful for ground loop elimination, common mode signal rejection or noise pickup reduction. The API 4300 G uses the latest technology in linear optical isolation for optimum noise immunity and complete freedom from AC artifacts in the output. In addition, the module power supply is isolated, resulting in full 3-way (input, output, power) isolation.

Standard power is 115VAC; options include 230 VAC or 9-30 VDC.

The API 4300 G plugs into an industry standard 8-pin octal socket sold separately. Sockets API 008 or finger-safe API 008 FS allow either DIN rail or panel mounting.

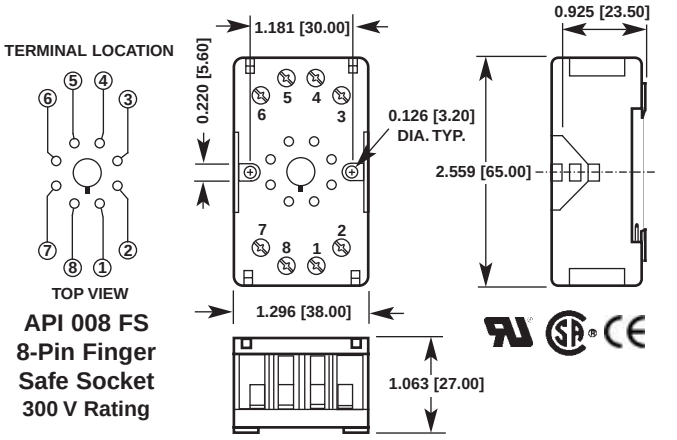
UNIQUE FEATURES

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.

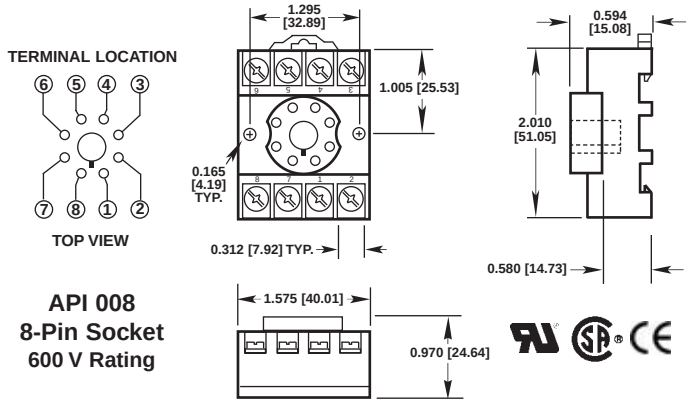
The functional test pushbutton provides a fixed output (independent of the input) when held depressed. The test output level can be field-adjusted via a multiturn potentiometer.

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

COMMON RANGES

Consult factory for special ranges or ranges not listed here.

Common Voltage Inputs	
0 to 100 mV	0 to 50 V
0 to 200 mV	0 to 100 V
0 to 500 mV	±100 mV
0 to 1 V	±200 mV
0 to 2 V	±500 mV
0 to 5 V	±1 V
1 to 5 V	±2 V
0 to 10 V	±5 V
0 to 20 V	±10 V
Common Current Inputs	
0 to 1 mA	0 to 100 mA
0 to 10 mA	0 to 200 mA
0 to 20 mA	0 to 500 mA
4 to 20 mA	
10 to 50 mA	

Common Voltage Outputs
0 to 1 V
0 to 5 V
1 to 5 V
0 to 10 V
±5 V
±10 V
Common Current Outputs
0 to 20 mA
4 to 20 mA

OPERATION

The API 4300 G is factory configured to your exact input and output requirements. The input is filtered, either amplified or attenuated as required, then passed through an opto-coupler to the output stage. The 18 VDC loop excitation supply of the API 4300 G may be used in place of an additional external power source to power passive input devices.

CALIBRATION

The API 4300 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 for details.

API 4310 G Like API 4300 G, but narrow input spans

API 4380 G Like API 4300 G, but field selectable inputs and outputs

API 4380 DIN Like API 4380 G, but DIN style case, universal power; 48-300 VDC or 80-265 VAC

API 4380 DD Like 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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