



API 1000 G
API 1020 G

Adjustable Setpoints

DC Input Alarm Trips

Input: 0-100 mV to 0-300 VDC, 0-1 mA to 1 ADC

Outputs: One DPDT Relay or Two SPDT Relays

- **High Capacity 7 Amp Relay Contacts**
- **Input LoopTracker® LED**
- **Alarm Test/Reset Pushbutton**
- **Alarm Status LEDs**

Applications

- **Process Limit Backup Alarm**
- **Tank Level Alarm**
- **Over, Under, Out-of-Range Alarm**

Specifications

Input Range

Factory Configured—Please specify input range

	Minimum	Maximum
Voltage:	0-100 mVDC	0-300 VDC
Current:	0-1 mADC	0-1 ADC
Typical inputs:	4-20 mA, 0-5 V, 1-5 V, 0-10 V, 0-150 V	

System voltages should not exceed socket voltage rating

Input Voltage Burden (Current)

1.25 VDC maximum

Input Protection, Common Mode

750 VDC or 750 VAC_p

LoopTracker®

Variable brightness LED indicates input loop level and status

Relay Output

Factory Configured—See Options for other relay configurations

API 1000 G One DPDT contact
HI alarm, normal action (failsafe), non-latching standard
7 A @ 240 VAC resistive load
3.5 A @ 240 VAC inductive load

API 1020 G Two SPDT contacts
HI/LO, normal action (failsafe), non-latching standard
7 A @ 240 VAC resistive load
3.5 A @ 240 VAC inductive load

CAUTION: Socket voltage rating may limit system rating.
External contact protection such as an RC snubber is recommended for inductive loads.

Setpoint

12 turn potentiometer adjustable from 0 to 100% of span

Deadband

API 1000 G 1.0 to 100% of span, 12 turn potentiometer

API 1020 G Fixed at 1% of span, standard

API 1020 GA 1.0 to 100% of span, 1 turn potentiometer

Functional Test/Reset Button

Toggles relay(s) to opposite state when pressed
Resets latching relay with **HT** option, available on 1000 G only

Response Time

70 milliseconds typical

Ambient Temperature Range

-10°C to +60°C operating

Temperature Stability

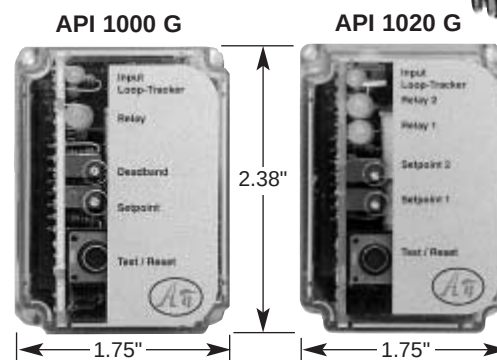
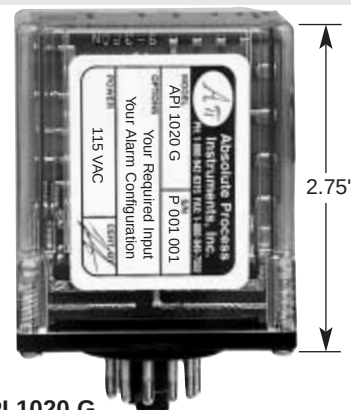
Better than ±0.02% of span per °C

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



**Free Factory
Input & Output
Calibration!**

Models & Options

Factory Configured—Please specify input range and options

API 1000 G DC input, DPDT alarm trip, HI alarm, normal action (failsafe), non-latching, 115 VAC

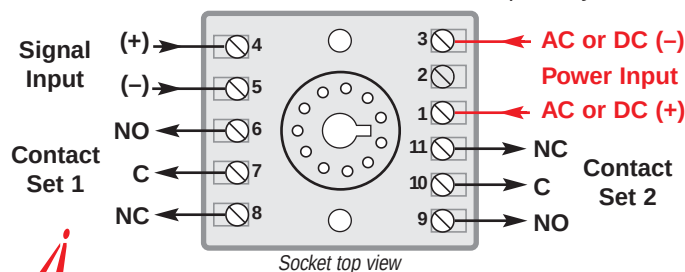
API 1020 G DC input dual alarm trip, 2 SPDT relays, HI/LO, normal action (failsafe), non-latching, 115 VAC

Options—Specify on Order

- A230** Powered by 230 VAC, 50/60 Hz
- D** Powered by 9-30 VDC
- A** Adjustable deadbands for 1020 G
- HT** Latching alarm with pushbutton reset, API 1000 G only
- HP** Latching alarm with power-off reset, API 1000 G only
- R** Reverse-acting alarms (non-failsafe)
- L** Low trip (on decreasing signal) for 1000 G
- HH** High/High trip for 1020 G instead of High/Low
- LL** Low/Low trip for 1020 G instead of High/Low
- U** Conformal coating for moisture resistance

Electrical Connections

Order API 011 or API 011 FS socket separately



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API 1000 G and API 1020 G DC Input Alarm Trips

FUNCTIONAL DESCRIPTION

The API 1000 G and API 1020 G are factory configured for either a DC voltage or current input. The API 1000 G provides a single setpoint adjustment, a visual alarm indication via a bi-color LED and an alarm output via DPDT relay contacts when the input exceeds (HI alarm) or falls below (LO alarm) a preset level. The API 1020 G contains two independent setpoints with corresponding bi-color LEDs and SPDT relay contact outputs.

Input ranges are factory configured and must be specified at time of order. DC voltage inputs can vary from 0-100 mVDC through 0-300 VDC and DC currents from 0-1 mA DC through 0-1 ADC. Higher current ranges are available using an external shunt. Consult the factory for assistance with your specific application.

The API 1000 G alarm output can be factory configured for HI or LO operation. Non-latching and normal acting (fail-safe) operation is standard. Latching and/or reverse acting (non-fail-safe) options are available.

The API 1020 G can be factory configured for HI/HI, HI/LO, LO/HI or LO/LO operation. Normal acting (fail-safe) operation is standard. Reverse acting (non-fail-safe) alarms are available.

Heavy duty relay contacts (7 A @ 240 VAC, resistive load) allow the module to directly control high capacity loads without a secondary device. Standard module power is 115 VAC. Options include 230 VAC or 9-30 VDC.

A top-accessible, multi-turn potentiometer is used to adjust the alarm setpoint (one for each setpoint on the API 1020 G) from 0 to 100% of the calibrated input span. The API 1000 G comes standard with a multi-turn deadband potentiometer which allows the alarm trip and reset window to be adjusted symmetrically about the setpoint from 1 to 100% of the span.

The deadband is fixed at 1% for each setpoint on the API 1020 G. Independent adjustable deadbands are available as an option. Deadband is typically used to eliminate false trips or alarm chatter caused by rapid fluctuations in the process input.

The API 1000 G and API 1020 G plug 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.

UNIQUE FEATURES

API exclusive features include a **LoopTracker® LED** which varies in intensity with changes in the process signal, a **Bi-Color Alarm Status LED** (Red = Alarm, Green = Normal, one for each setpoint on the API 1020 G), and a **Functional Test Pushbutton** which toggles the alarm status independent of the input when depressed.

The green LoopTracker LED varies in intensity with changes in the process input signal. Monitoring the state of this LED can provide a quick visual picture of your process loop at all times.

The functional test pushbutton toggles the alarm status independent of the input when depressed. It verifies the alarm and system operation and also provides the additional function of unlatching the alarm on the API 1000 G if the latching option was specified.

The bi-color alarm status LED is green when the alarm is in the "safe" condition and red when in the "alarm" condition. All three features greatly aid in saving time during initial start-up and/or troubleshooting.

OPERATION

For a standard configuration, (normal acting, non-latching) the alarm will activate when the input signal exceeds the setpoint (HI alarm) or falls below the setpoint (LO alarm), then will automatically reset when the alarm condition no longer exists. It is important to note that in the normal (fail-safe) mode, the relay coil is energized in the safe condition and de-energized in the alarm condition.

In the reverse acting (non-fail-safe) mode, the relay coil is de-energized in the safe condition and energized in the alarm condition. The alarm status LED will always be green in the non-alarm condition and red in the alarm condition.

If configured as latching, it will be necessary to push the functional test pushbutton or remove power from the module to reset the alarm. The alarm will only reset if the alarm condition no longer exists.

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 1080 G

Same as API 1000 G, but field-configurable.

API 1080 DIN

Same as API 1080 G, but DIN style case, universal power 48-300 VDC or 80-265 VAC

API 1090 G

Same as API 1020 G, but field-configurable.

API 1090 DIN

Same as API 1090 G, but DIN style case, universal power 48-300 VDC or 80-265 VAC

API 1090 DD

Same as API 1090 DIN, but 9-30 VDC power

API 1040 G

Same as API 1000 G, but with non-isolated retransmitted process output and optional retransmitted setpoint output

ACCESSORIES

API 011

11-pin socket

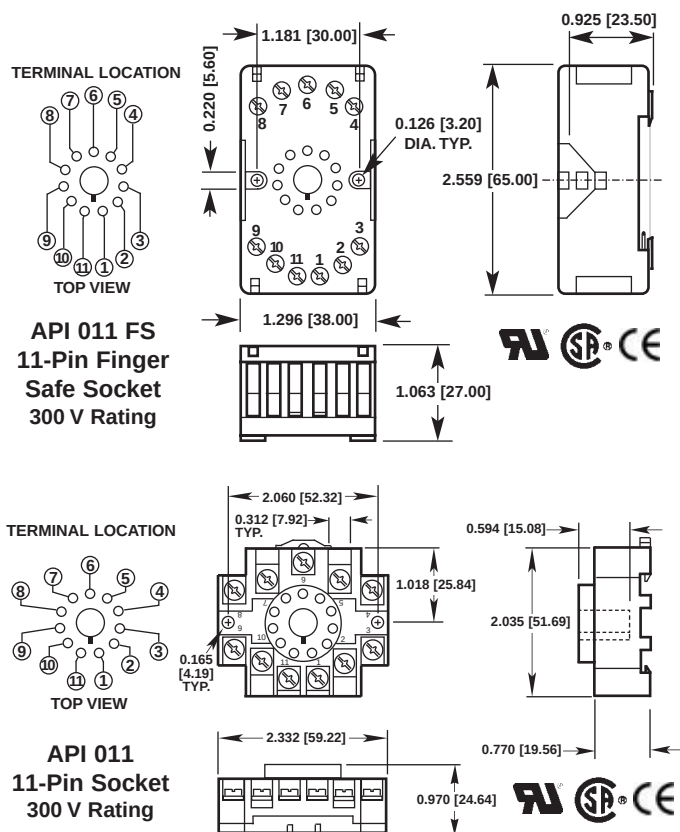
API 011 FS

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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