API 1200 G
API 1220 G

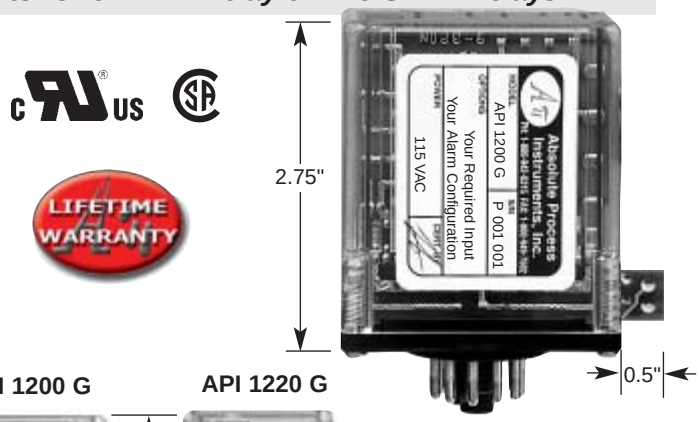
Thermocouple Alarm Trips

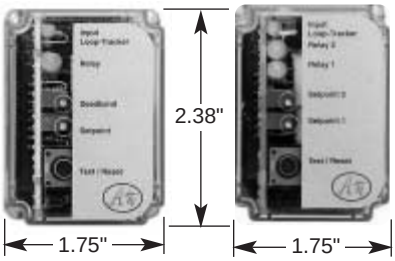
Adjustable Setpoints

Input: ***Most Thermocouple Types***

Outputs: One DPDT Relay or Two SPDT Relays

- ***Wide Range of Thermocouple Types***
- ***Automatic Cold Junction Compensation***
- ***Input LoopTracker® LED***
- ***Alarm Status LEDs***
- ***High Capacity 7 Amp Relay Contacts***





Free Factory Input & Output Calibration!

Applications

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

Specifications

Thermocouple Input

Factory Configured—Please specify thermocouple type and temperature range in °F or °C

J, K, T, E, R, S, and others; most thermocouple types available

Cold-Junction Compensation

Automatic for specified thermocouple

T/C Burn-Out Protection

Upscale burnout standard

Downscale burnout optional, specify option **B** on order

T/C Current

Less than 1.0 µA, including burnout sense

LoopTracker®

Variable brightness LED indicates input loop level and status

Relay Output

Factory Configured—See Options for other relay configurations

API 1200 G	One DPDT contact set HI alarm, normal action (failsafe), non-latching standard 7 A @ 240 VAC resistive load 3.5 A @ 240 VAC inductive load
API 1220 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 contacts may limit system rating. External contact protection such as an RC snubber is recommended for inductive loads.

Setpoint

12 turn potentiometer, adjustable 0 to 100% of span

Deadband

API 1200 G	1.0 to 100% of span 12 turn potentiometer
API 1220 G	Fixed at 1% of span, standard
API 1220 GA	1.0 to 100% of span 1 turn potentiometer

Functional Test/Reset Button

Toggle relay(s) to opposite state when pressed

Resets latching relay on1200 G with **HT** option

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

Models & Options

Factory Configured—Please specify input range

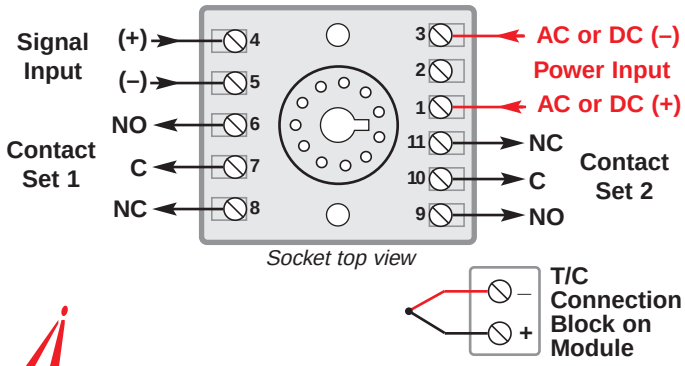
API 1200 G	T/C input alarm trip, 1 DPDT relay, HI alarm, normal action (failsafe), non-latching, 115 VAC
API 1220 G	T/C input dual alarm trip, 2 SPDT relays, HI/LO, normal action (failsafe), non-latching, 115 VAC

Options—Specify on Order

A230	Powered by 230 VAC, 50/60 Hz
D	Powered by 9-30 VDC
A	Adjustable deadbands for 1220 G
B	Downscale T/C protection instead of upscale
HT	Latching alarm with pushbutton reset, API 1200 G only
HP	Latching alarm with power-off reset, API 1200 G only
R	Reverse-acting alarms (non-failsafe)
L	Low trip (on decreasing signal) for 1200 G
HH	High/High trip for 1220 G instead of High/Low
LL	Low/Low trip for 1220 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 1200 G and API 1220 G Thermocouple Alarms

FUNCTIONAL DESCRIPTION

The API 1200 G and API 1220 G are factory configured for a thermocouple input. The API 1200 G provides a single setpoint adjustment and single DPDT relay actuated when the input exceeds (HI alarm) or falls below (LO alarm) the setpoint.

The API 1220 G contains two independent setpoints with corresponding bi-color LEDs and relay contact outputs (SPDT for each setpoint).

The modules can be factory configured for virtually all thermocouple types and related temperature spans. Consult the factory for assistance with your specific application.

Standard features include automatic cold junction compensation and upscale T/C burnout protection.

The API 1200 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.

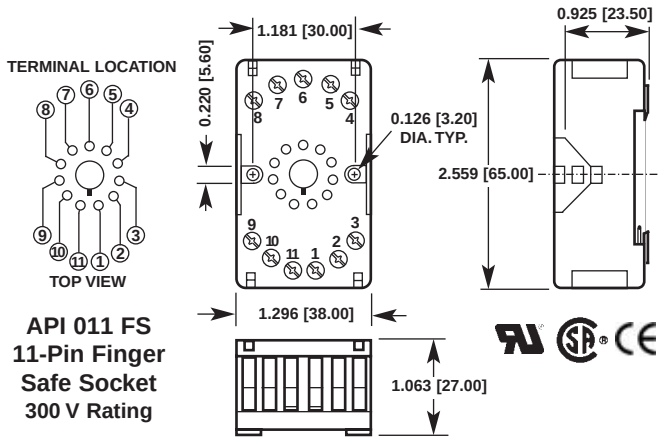
The API 1220 G can be factory configured for HI/HI, HI/LO, LO/HI or LO/LO operation. Normal acting (fail-safe) operation is standard. Reverse acting (non-fail-safe) alarms are available.

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.

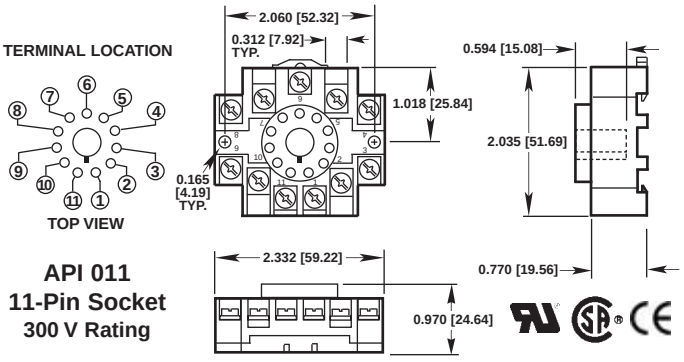
A top-accessible, multi-turn potentiometer is available to adjust the alarm setpoint (one for each setpoint on the API 1220 G) from 0 to 100% of the calibrated input span. The API 1200 G comes standard with a multi-turn deadband potentiometer which allows the alarm trip and reset window to be adjusted symmetrically about the setpoint from 1 to 100% of the span.

The deadband is fixed at 1% for each setpoint on the API 1220 G. However, independent adjustable deadbands are available as an option. Deadband is typically used to eliminate false trips or alarm chatter caused by rapid fluctuations of the process input.

The API-1200 G and API 1220 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.



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 a ***LoopTracker® LED*** which varies in intensity with changes in the input signal, a **Bi-Color Alarm Status LED** (Red = Alarm, Green = Normal, one for each setpoint on the API 1220 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 temperature 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 1200 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 mode, non-latching) the alarm will activate when the process signal (input) exceeds the setpoint (HI alarm) or falls below the setpoint (LO alarm), then automatically reset when the alarm condition no longer exists.

It is important to note that in the normal (failsafe) mode, the relay coil is energized in the safe condition and de-energized in the alarm condition.

In the reverse acting (non-failsafe) 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 latching alarm will only reset if the alarm condition no longer exists.

RELATED PRODUCTS

The following products are also available for use with a thermocouple input. Refer to the appropriate data sheets for details.

API 4000 G
T/C or RTD input to DC voltage or current output. Field rangeable for sensor type; low & high temperature ranges, °C or °F, DC voltage or DC current outputs.

API 1400 G
Same as API 1200 G, but RTD input.

API 1420 G
Same as API 1220 G, but RTD input.

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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