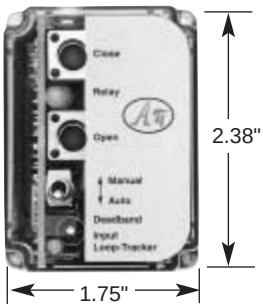
API 3200 G Valve Positioner Actuator Controller

Potentiometer or Optional Current or Voltage Feedback

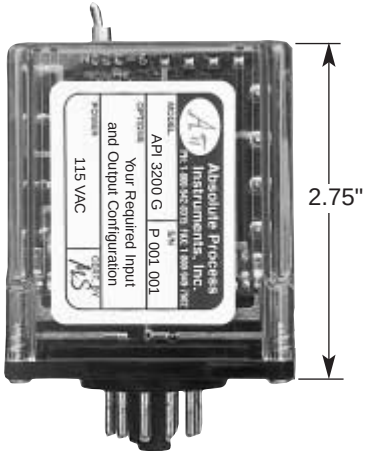
Input: 0-1 V to 0-100 VDC or 0-10 mA to 0-1 ADC
Output: 7 A SPDT Relay with Neutral Position

- *Automatic or Manual Control Modes*
- *Test/Manual Positioning Pushbuttons*
- *Input LoopTracker® LED*
- *Relay Status LEDs*
- *High Capacity Relay Contacts*

LIFETIME WARRANTY



API 3200 G



Specifications

Control Input

Factory Configured—Please specify input range

API 3200 G	Minimum	Maximum
Voltage:	1VDC	100VDC
Current:	10mADC	1ADC

API 3200 G M01
Voltage: 0-1 V, 0-5 V, 1-5 V, 0-10 V

API 3200 G M420
Current: 0-20 mA, 4-20, mA, 10-50 mA

System voltages must not exceed socket voltage rating

Input Impedance

Voltage: 200 kΩ minimum
Current: 50 Ω

Input Voltage Burden (Current)

1.25 VDC maximum

LoopTracker®

Variable brightness LED indicates input level and status

Feedback

API 3200 G
Potentiometer Range: 100 Ω to 100 kΩ
Potentiometer Excitation: 1.0 VDC nominal, 10 mA maximum

API 3200 G M01
Voltage: 0-1 V, 0-5 V, 1-5 V, 0-10 V

API 3200 G M420
Current: 0-20 mA, 4-20, mA, 10-50 mA

Relay Output

SPDT relay with neutral contact position
7 A @ 240 VAC maximum resistive load
3.5 A @ 240 VAC maximum inductive load

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

Deadband

12 turn potentiometer, adjustable from 1 to 25% of span

Operational Controls

Automatic/manual switch
Open/close pushbuttons

Response Time

100 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

API 3200 G	DC input valve controller, potentiometer feedback. SPDT relay output, 115 VAC
API 3200 GM01	DC input valve controller, 1-5 V feedback or specify. SPDT relay output, 115 VAC
API 3200 GM420	DC input valve controller, 4-20 mA feedback, or specify. SPDT relay output, 115 VAC

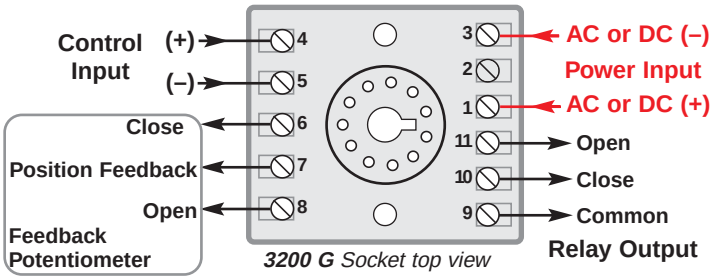
Options—Specify on Order

A230	Powered by 230 VAC, 50/60 Hz
D	Powered by 9-30 VDC
U	Conformal coating for moisture resistance

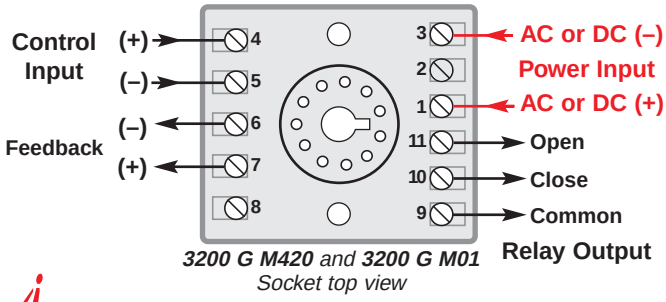
Accessories—See other side

Electrical Connections

*Order **API 011** or **API 011 FS** socket separately*



3200 G Socket top view



3200 G M420 and 3200 G M01
Socket top view

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API 3200 G Valve Actuator/Positioner/Controller

FUNCTIONAL DESCRIPTION

The API 3200 G controls the position of a valve or linear actuator by comparing a DC input (control signal) to that of a position feedback potentiometer or slidewire.

The SPDT relay in the API 3200 G provide bi-directional (open-close) signals to drive a motor to open or close a valve. When the valve position, as indicated by the feedback potentiometer, becomes equal to the position as represented by the control input, the relay will go to the neutral position and the motor will halt. A top-accessible multi-turn deadband control allows precise positioning of the motor without hunting or oscillation.

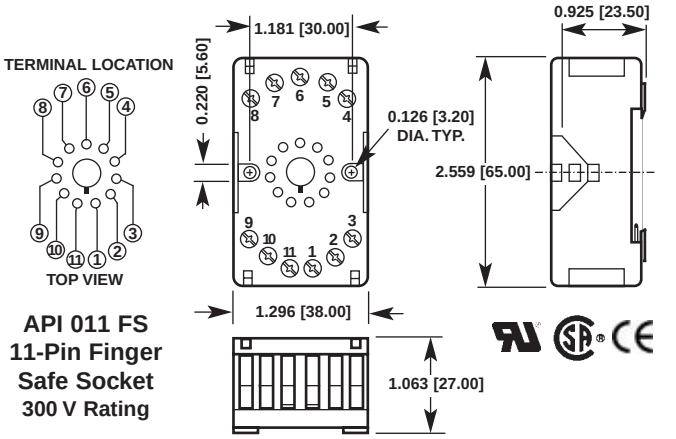
The API 3200 G M420 controls the position of a valve or linear actuator by comparing a DC current input (control signal) to that of a current feedback signal.

The API 3200 G M01 controls the position of a valve or linear actuator by comparing a DC voltage input (control signal) to that of a voltage feedback signal.

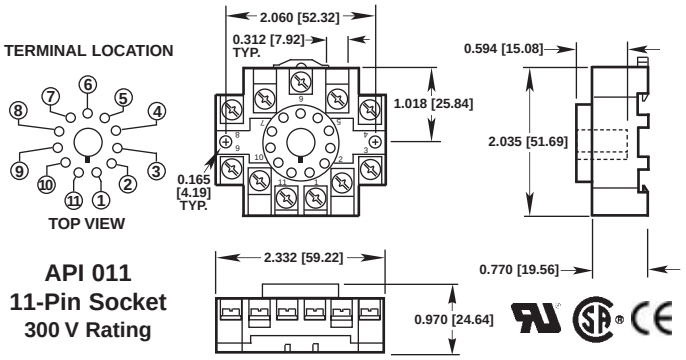
An SPDT relay in the API 3200 G M420 and API 3200 G M01 provide bi-directional (open-close) signals to drive a motor to open or close a valve. When the valve position, as indicated by the feedback signal, becomes equal to the position as represented by the control input, the relay will go to the neutral position and the motor will halt. A top-accessible multi-turn deadband control allows precise positioning of the motor without hunting or oscillation.

All versions of the API 3200 G have heavy-duty relay contacts (7 A at 240 VAC, resistive load) allow the modules to directly control high capacity loads without a secondary device. Caution must be exercised when sizing inductive loads (motor loads). For assistance, contact the factory. Standard power is 115 VAC. Options include 230 VAC or 9-30 VDC.

The API 3200 G plugs 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

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

UNIQUE FEATURES

The API 3200 G includes several distinguishing features not found on other valve actuator devices. A top-accessible Auto/Manual switch together with two top-accessible pushbuttons allow either closed-loop automatic control of valve position or manual positioning via the Open/Close pushbuttons.

The manual mode is useful for troubleshooting, calibration, system testing or as a manual bypass. A bi-color LED indicates the controller's Open/Close relay contact status.

In addition, a green ***LoopTracker***® LED varies in intensity with changes in the control input signal. Monitoring the state of this LED can provide a quick visual picture of your process at all times and greatly aid in saving time during initial startup and/or troubleshooting.

OPERATION

The API 3200 G provides an excitation voltage to the feedback potentiometer on the valve or valve actuator and monitors its position. If the difference between the two is greater than the deadband setting, the appropriate relay is energized to actuate the positioning motor.

The API 3200 G M420 uses a 4-20 mA control signal input and feedback signal (unless another current range was specified). The difference between the control signal input and the feedback signal is compared to the deadband setting. If the difference between the two is greater than the deadband setting, the appropriate relay contact is energized to actuate the positioning motor.

API 3200 G M01 has a 1-5 volt feedback signal and control signal input (unless another voltage range was specified). The difference between the control signal input and the feedback signal is compared to the deadband setting. If the difference between the two is greater than the deadband setting, the appropriate relay contact is energized to actuate the positioning motor.

For all versions an electronic lockout circuit is used to prevent both relay contacts from closing simultaneously. When the two signals are again equal, lthe relay contacts will go to the neutral position.

In the manual mode the Open and Close pushbuttons are used to position the valve independent of the control and feedback signals.

CALIBRATION

For most applications the deadband is the only required adjustment.

1. To adjust the deadband connect the system properly.
2. Turn the deadband potentiometer counterclockwise to minimum.
3. Provide a near mid-level control input signal.
4. Allow the valve to stabilize.
5. If overshoot, oscillation, or hunting are detected, slowly increase the deadband to eliminate the oscillation.

Zero and span adjustments are located on the side of the case and normally do not need to be adjusted.

1. If adjustment is required, apply a control input which represents the fully closed position.
2. Adjust the zero control to just close the valve.
3. Apply a full open control input.
4. Adjust the span control to just fully open the valve.

RELATED PRODUCTS

The following products are also available for use in similar applications. Refer to the appropriate data sheets for details.

API 4003 G I Factory ranged potentiometer (slidewire) to DC isolating transmitter. Used in applications requiring special offsets and ranges.

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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