

Q769B 4 to 20 mA Adapter for M7405 and M7415 Actuators

INSTALLATION INSTRUCTIONS

APPLICATION

The Q769B 4 to 20 mA Adapter is used to provide a 4 to 20 mA modulating signal to the M7405 and M7415 Actuators when used with a 4 to 20 mA Controller. The Q769B can also be used instead of a Q709A to control the minimum position of an M7405 or M7415 Actuator when a C7150B is used as a temperature sensor. See note on page 2 for use with proportional signal.

Maximum power consumption of the Q769B is 15 mW at 25 mA. The housing has an Underwriters Laboratories Inc. flame rating of 94 V-O. Two female quick connect terminals on the adapter connect to actuator terminals P and P1. Two male quick connect terminals are available for field wiring of an additional actuator. The adapter is designed to operate in a temperature range of -40°F to +125°F (-40°C to +52°C) and a relative humidity range of 5 to 95 percent.

INSTALLATION

When Installing this Product...

- 1 Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
- 2 Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
- 3 Installer must be a trained, experienced service technician.
- 4 After Installation is complete, check out product operation as provided in these instructions.



CAUTION

Disconnect power supply before making wiring connections to prevent electrical shock and equipment damage.

All wiring must comply with applicable electrical codes, ordinances and regulations.

NOTE: When using the Q769B on the M7405 or M7415 Actuators, the W7459 Solid State Economizer Module cannot be used. TO use the W7459 Solid State Economizer Module and the Q769B Adapter on the same M7405/M7415 Actuator, attach the W7459 Economizer Module to the M7405/M7415 Actuator, then connect separate wires from the Q769B terminals to actuator terminals P and P1.

The Q769B Adapter is supplied with female quick connect terminals that fit over the actuator 1/4 in. (6 mm) male quick connect terminals P and P1. Plug the Q769B Adapter into these one way terminals. See Fig. 1. See Fig. 2 and 3 for wiring information.

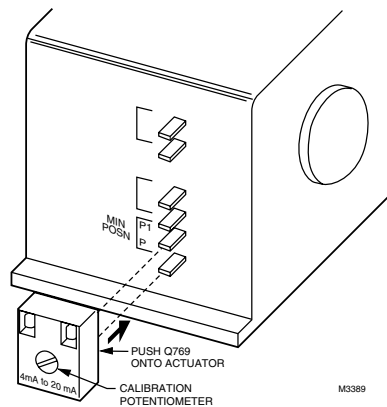
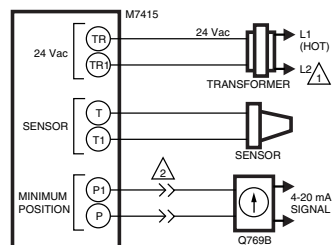


Fig. 1. Mounting Q769B 4 to 20 mA Adapter on actuator.



⚠ POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

⚠ Q769B ADAPTER MOUNTED ON P1, P QUICK CONNECTS. M3021A

Fig. 2. Q769B Adapter connected to actuator for 4 to 20 mA control of actuator minimum position (M7415 Actuator shown).



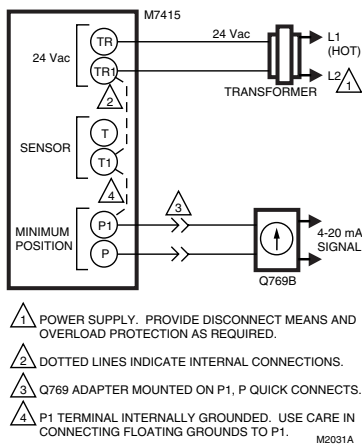


Fig. 3. Q769B Adapter connected to actuator for 4 to 20 mA proportional control (M7415 Actuator shown).

ADJUSTMENT

Minimum Position Adjustment

NOTE: The Q769B Adapter accepts a negative (-) current input. When using this device with a positive (+) output current, use separate transformers for the M7405/M7415 Actuator and the controller.

NOTE: When using the Q769B Adapter on the M7405/M7415 Actuator to modulate the actuator with a proportional 4 to 20 mA signal, the minimum position feature cannot be applied as described in the Q709 instructions.

The Q769B Adapter sets the minimum position of an M7405 or M7415 Actuator, based on a 4 to 20 mA signal. In an economizer system, the actuator adjusts outdoor air for cooling. The Q769B is used to set the minimum position so a specified amount of fresh air is admitted. To adjust the Q769B Adapter on an M7405 or M7415 Actuator, proceed as follows:

- 1 Run actuator to fully closed position and disconnect 24 Vac from terminals TR and TR1.
- 2 Connect Q769B 4 to 20 mA Adapter to actuator terminals P and P1.
- 3 Reconnect 24 Vac to actuator terminals TR and TR1 and adjust the 4 to 20 mA input signal for the desired minimum position.

The Q769B Calibration Potentiometer is factor adjusted so the actuator begins to modulate open from the fully closed position at 4.9 mA with the calibration potentiometer set at the midrange position. As shipped from the factory, an M7405/M7415 Actuator begins to modulate closed from the fully open position at 18.7 mA with the calibration potentiometer set at the midrange position. See Fig. 4.

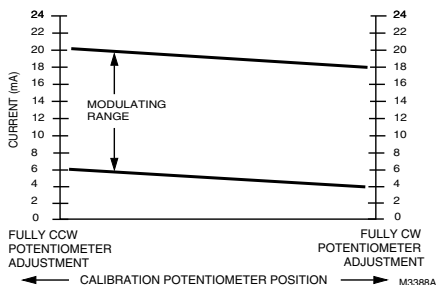


Fig. 4. Calibration chart.

When the Q769B Calibration Potentiometer is turned counterclockwise ↶, this increases the current required for the M7405/M7415 Actuator to leave the closed position. When the M7405/M7415 Actuator leaves the open position, the current increases slightly.

When the Q769B Calibration Potentiometer is turned clockwise ↷, this decreases the current required for the M7405/M7415 Actuator to leave the closed position. When the M7405/M7415 Actuator leaves the open position, the current decreases slightly.

CHECKOUT

Checkout the Q769B 4 to 20 mA Adapter according to actuator instructions. If the Q769B Adapter does not meet the checkout guidelines of the actuator instructions, replace the adapter.

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