

32003532 -001, -002, -003 Dual Auxiliary Switch Packages

INSTALLATION INSTRUCTIONS

APPLICATION

The Dual Auxiliary Switch Packages contain two independent 360 degree rotary switch cams for use in conjunction with Direct Coupled Actuators (DCA). See Table 1. They provide an on/off signal at two adjustable points in the actuator stroke. This signal can be routed to a controller or used to control equipment external to the actuator (for example, electric reheat coils and fan). As the device mounts over the DCA hub and setscrews, it can be added to an already-installed DCA.

NOTE: The 32003532-001 and 32003532-002 are obsolete (superseded by the 32003532-003).

IMPORTANT

1. The 32003532-003 housing is made of a material designed to survive UL555(S) Smoke and Fire Damper/Actuator testing without impeding actuator motion.
2. For easy identification:
• The 32003532-003 is black.
3. Use only the 32003532-003 for UL555(S) applications.
4. The 32003532-003 cable can withstand higher temperatures than the other models. (See Table 2.)
5. None of the switches are designed to function at the extreme temperatures of the UL555(S) test for extended periods.

Table 1. Switch and Actuator Compatibility.

Compatible Direct Coupled Actuator Models			
ML4105	ML4202	ML8105	MS4209
ML4115	ML4302	ML8115	MS4309
ML4125	ML4702	ML8125	MS4709
ML4135	ML4802	ML8135	MS4809
	ML8202		MS8209
	ML8302		MS8309

Package Contents (see Fig. 1):
 Self-tapping mounting screws (2).
 Switch assembly (two 8A switches).
 1m, 6-conductor cable.
 3/8 in. flexible conduit connector.
 Mounting bracket.

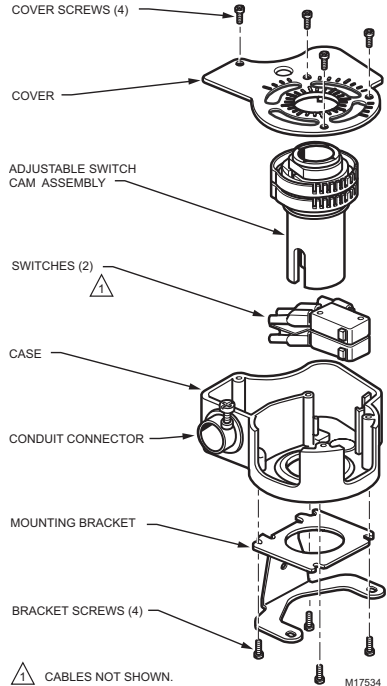


Fig. 1. Auxiliary switch exploded view.

Dimensions: See Fig. 2.

Conduit (not included): 3/8 in. flexible.

Electrical Switch Ratings (at 240 Vac):

At or below 240 Vac:
 Resistive Load: 8A.
 Inductive Load: 2A.
 At 125 Vdc: 0.5A.
 At 250 Vdc: 0.25A.
 Pilot Duty: 4A, 125 Vac.

Operating Temperature: -40 to 130°F (-40 to 54°C).



Switch Differential: Three angular degrees maximum.

Switching: Two single-pole, double-throw (spdt) micro switches.

Ratings and Approvals:

Underwriters Laboratories Inc. Recognized:
 File No. E4436.
 UL94-5V Plenum rating.
 Cable: See Table 2.
 NEMA2.

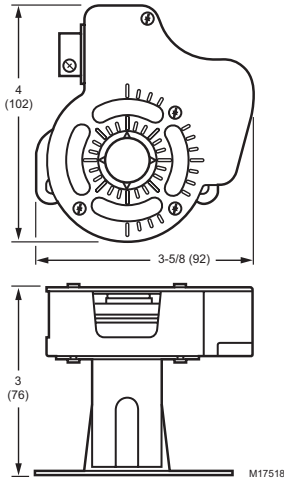


Fig. 2. Dimensions in in. (mm).

Table 2. Cable Ratings.

Model	Rating
32003532-001, 32003532-002	UL/CSA rated 300V, 90°C, 18 gauge, NEMA2
32003532-003	UL Style 1180 rated 300V, 200°C, 18 gauge

INSTALLATION

When Installing this Product...

1. Read instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check ratings and descriptions given in Specifications to make sure 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

Electrical Shock or Equipment Damage Hazard.
Can shock individuals or short equipment circuitry.
 Disconnect power supply before installation and always keep device assembled.



CAUTION

Actuator Damage Hazard.
Turning motor output hub by hand or wrench can damage internal gears.
 Forcibly turning the motor shaft damages the gear train.

NOTE: Although some compatible actuators (examples: ML4125, ML4135, ML8125, and ML8135) do not accept 3/4 in. shafts, the switch, by itself, can.

1. Determine desired switching action (if switch is to energize during clockwise ↻ or counterclockwise ↻ rotation).

NOTE: With switch cam as shown in Fig. 3, the normally closed contact opens during counterclockwise ↻ rotation and the normally open switch closes.

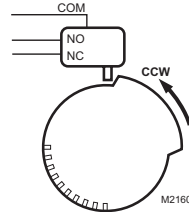


Fig. 3. Switching configuration (top view) for counterclockwise ↻ rotation.

Conversely, with the switch cam as shown in Fig. 4, the normally closed contact opens during clockwise ↻ rotation and the normally open switch closes.

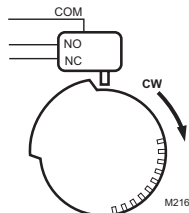


Fig. 4. Switching configuration (top view) for clockwise ↻ rotation.

NOTE: Switches can be set prior to installation on the actuator if angular switch positions are known.

2. Align the switch hub with the set screws on the actuator. See Fig. 5.

3. If the conduit location is not appropriate for your application, adjust the bracket as follows:
 - a. Remove and set aside the four bracket screws.
 - b. Rotate the bracket 90, 180, or 270 degrees.
 - c. Replace the bracket screws.
4. Mount the switch on the actuator and tighten the two screws.
5. Determine switch position settings based on the angular indications molded into the housing.

NOTES:

- Interior angular indications appear in 15 degree increments (see Fig. 6).
 - Exterior angular indications appear in 10 degree increments (see Fig. 6).
 - Four 10 degree indications are not on the cover (see Fig. 6).
6. Move each cam inside switch assembly to the appropriate position. Remember the direction of travel of the cam for switching purposes (see Fig. 3 and 4). Monitor the switch closure with an ohmmeter for a continuity check. See Table 3.

IMPORTANT

Make certain that the switch activates at the desired degree of stroke.

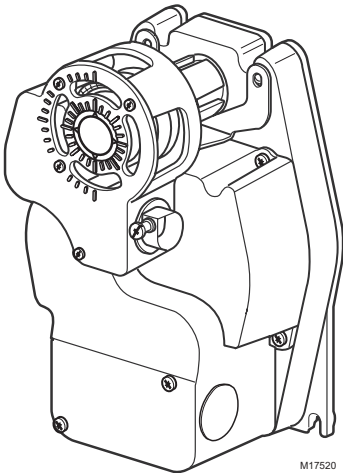


Fig. 5. ML4125 DCA with Auxiliary Switch.

Table 3. Proper continuity measurements.

Switch	Normally Open	Normally Closed
Activated	Zero ohms	Infinite ohms
Not Activated	Infinite ohms	Zero ohms

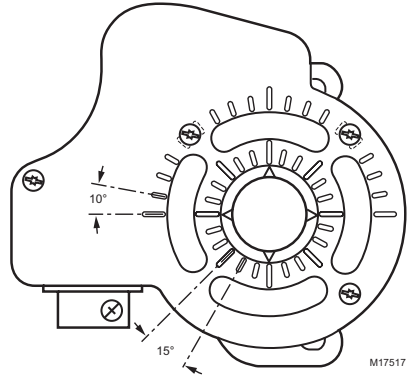


Fig. 6. Auxiliary switch angular indications.

Wiring



CAUTION

Electrical Shock or Equipment Damage Hazard.
Can shock individuals or short equipment circuitry.
 Disconnect power supply before installation and always keep device assembled.

NOTE: See Table 4 for wiring information.

Table 4. Auxiliary Switch Wiring Connections.

Connection	Upper Switch	Lower Switch
Common	Black/Red	White/Red
Normally Closed	Black/Yellow	White/Yellow
Normally Open	Black/Blue	White/Blue

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