ZONEFIRST®

Controlling Your Comfort Room by Room

Modulating Damper Motor

Model MDM



The Modulating Damper Motor, Model MDM, is a 24 Volt AC, Power Open-Power Closed actuator that is utilized on the ZDM, RDM and RRM series dampers. The MDM features adjustable minimum and maximum position settings, Light Emitting Diode (LEDs) Indicators for both Open and Closed positions and easy on/off direct couple design.

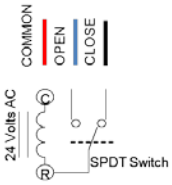
The MDM motor's high torque output is rated at 283 in/ounces. The low current draw is 0.100A and up to 8 dampers can be powered from a 40VA transformer.

The three (3) screwless terminal strip requires a 24VAC input to power the actuator open (M1/Com/Red - M4/Open/Blue) and 24VAC to power the damper closed (M1/Com/Red - M6/Closed/White). This motor's energy saving design uses end switches to break power to the motor once the motor reaches the end travel position. This lengthens the motor life and conserves energy. The MDM has been factory tested to over 250,000 cycles.

This powerful motor allows the damper to handle higher static pressures and can be modulated using the SPS or SPC Static Pressure Switch/Control or similar type control.

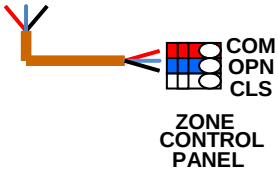
WIRING DIAGRAM 1





WIRING DIAGRAM 2





MDM SPECIFICATIONS

Voltage – Nominal 24VAC 50/60Hz, 6W, 4VA
Current – Nominal 100mA Operating, 1mA non-operating
Torque - 283 in/oz., 17.70in/lbs., 2Nm
Travel Timing - 13.5 Seconds
Connection -Screwless Terminals

Models

MDM-R, round dampers:
Ref RDMxx
MDM-Z, square/rectangular dampers:
Ref ZDSMxxxx, ZDBMxxxx

Motor Actuator

CHECKOUT/TROUBLSHOOTING

To checkout the operation of the actuator, place 24V across terminals (M1/Com/Red) and (M4/Open/Blue) and the actuator will cycle open and the Green LED will illuminate at the end of the cycle. Place 24V across terminals (M1/Com/Red) and (M6/Closed/White) and the actuator will cycle close and the Red LED will illuminate at the end of the cycle.

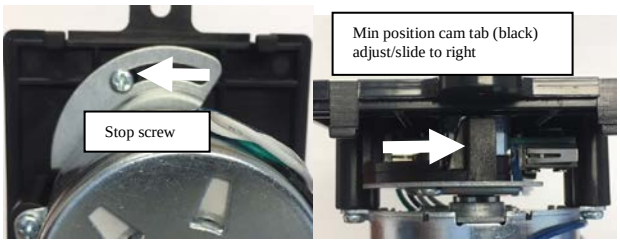
After performing the checkout of the actuator/damper and it's not functioning properly check the motor terminals for 24V across terminals (M1/Com/Red) and (M4/Open/Blue) if the damper should be open, and (M1/Com/Red) and (M6/Closed/White) if the damper should be closed. If power is not at the proper terminals, check the wiring and control panel or power source for proper voltage.

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Adjustable Minimum Close/Maximum Open Settings
Full cam extension equates to apx 40% blade open/close

Minimum Close Setting Adjustment

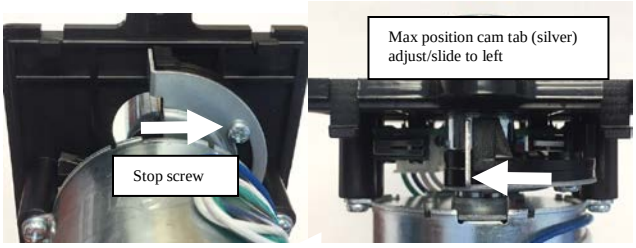
To set the adjustable Minimum Close Damper Position Stop, power the damper to the OPEN (Green LED illuminates) position. Remove the cover from the actuator by loosening the screw between the LEDs and the terminal connector block. Remove the cover by lifting the cover away from the baseplate and upward to release from 2 tabs at the top of the actuator baseplate. To adjust the cam, loosen the stop screw on the adjustable cam located as shown on left.



Move the adjustable cam (black section of cam) to the right to adjust the minimum position. Make sure to re-tighten the cam locking screw and power damper open and close in order to check position setting. Reattach the actuator cover.

Maximum Open Setting Adjustment

To set the adjustable Maximum Open Damper Position Stop, power the damper to the CLOSED (Red LED illuminates) position. Remove the cover from the actuator by loosening the screw between the LEDs and the terminal connector block. Remove the cover by lifting the cover away from the baseplate and upward to release from 2 tabs at the top of the actuator baseplate. To adjust the cam, loosen the stop screw on the adjustable cam located as shown on left.



Move the adjustable cam (silver section of cam) to the left to adjust the maximum position. Make sure to re-tighten the cam locking screw and power. Reattach the actuator cover.