

# AMCX24-MFT95

Modulating, Non-Spring Return, 24 V, 135 Ω Input



Technical Data	
Power Supply	24 VAC ± 20%, 50/60 Hz, 24 VDC ± 10%
Power Consumption Running	3.5 W
Power Consumption Holding	1.3 W
Transformer Sizing	6 VA (class 2 power source)
Shaft Diameter	1/2" to 1.05" round, centers on 1/2" and 3/4" with insert, 1.05" without insert
Electrical Connection	3 ft [1m], 10 ft [3m] or 16 ft [5m] 18 GA appliance or plenum cables, with or without 1/2" conduit connector
Overload Protection	electronic throughout 0° to 95° rotation
Operating Range	0 to 135 Ω Honeywell Electronic Series 90, 0 to 135 Ω input
Input Impedance	100 k Ω for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA, 1500 Ω for PWM, floating point and On/Off
Angle of Rotation	max. 95°, adjustable with mechanical stop
Torque	180 in-lbs [20 Nm] minimum
Direction of Rotation (Motor)	reversible with switch
Position Indication	reflective visual indicator (snap on)
Manual Override	external push button
Running Time (Motor)	35 sec constant, independent of load
Humidity	5 to 95% RH non condensing (EN 60730-1)
Ambient Temperature Range	-22°F to 122°F [-30°C to 50°C]
Storage Temperature Range	-40°F to 176°F [-40°C to 80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing Material	UL94-5VA
Agency Listings†	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Sound power level	769
Servicing	maintenance free
Quality Standard	ISO 9001
Weight	2.6 lb [1.2 kg]

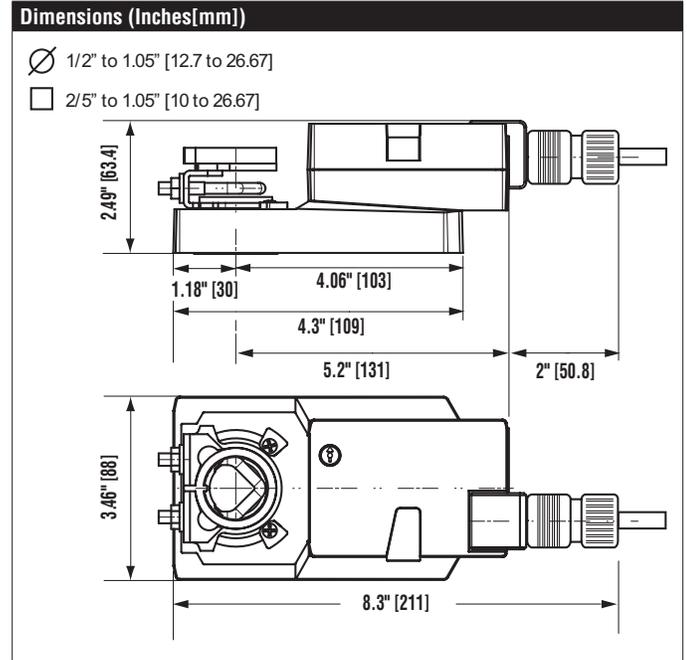
**Torque min. 180 in-lb, for control of damper surfaces up to 45 sq. ft.**

### Application

For proportional modulation of dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. The actuator is mounted directly to a damper shaft up to 1.05" in diameter by means of its universal clamp. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft. The default parameters for 0 to 135Ω input applications of the ...MFT95 actuator are assigned during manufacturing. If necessary, custom versions of the actuators can be ordered. The parameters can be changed by two means: pre-set and custom configurations from Belimo or on-site configurations using the Belimo PC-Tool software.

### Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The anti-rotation strap supplied with the actuator will prevent lateral movement. The actuator provides 95° of rotation and a visual indicator indicates position of the actuator. When reaching the damper or actuator end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover. The actuators use a brushless DC motor, which is controlled by an Application Specific Integrated Circuit (ASIC). The ASIC monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode. Add-on auxiliary switches or feedback potentiometers are easily fastened directly onto the actuator body for signaling and switching functions.



Date created, 06/01/2016 - Subject to change. © Belimo Aircontrols (USA), Inc.

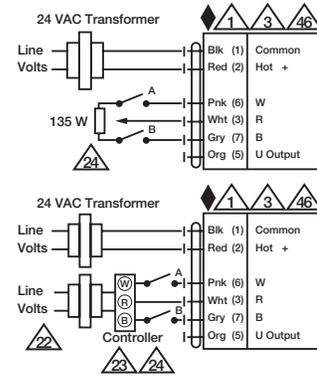
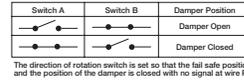
### Typical Specification

Proportional control damper actuators shall be electronic direct-coupled type, which require no crank arm and linkage and be capable of direct mounting to a shaft up to 1.05" diameter. Actuators must provide proportional damper control in response to 0 to 135 Ω control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

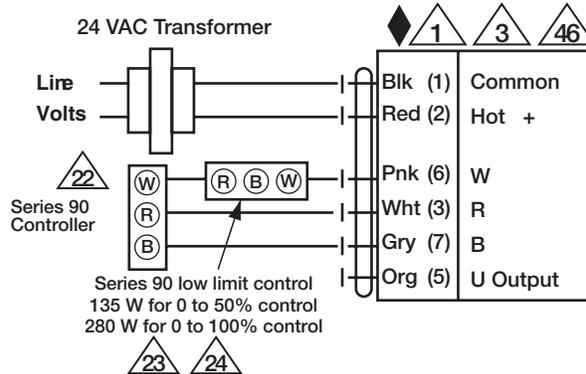
### Wiring Diagrams

## INSTALLATION NOTES

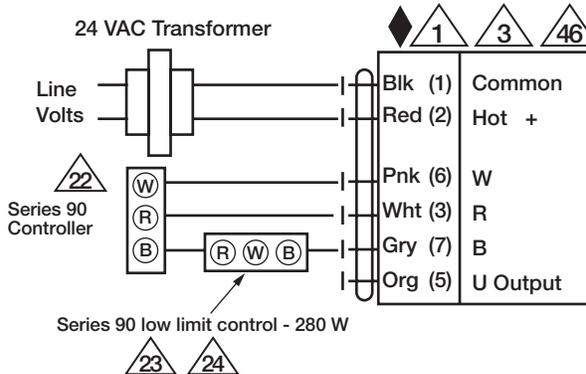
- Provide overload protection and disconnect as required.
- Actuators may also be powered by 24 VDC.
- Actuators and controller must have separate transformers.
- Consult controller instruction data for more detailed information.
- Resistor value depends on the type of controller and the number of actuators. No resistor is used for one actuator. Honeywell® resistor kits may also be used.
- To reverse control rotation, use the reversing switch.
- Actuators may be controlled in parallel. Current draw and input impedance must be observed.



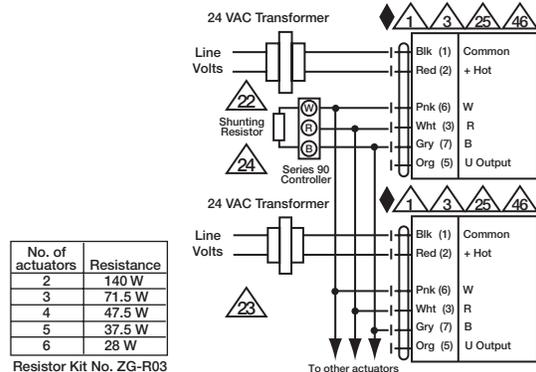
### Typical and Override Control



### Low Limit Control



### High Limit Control

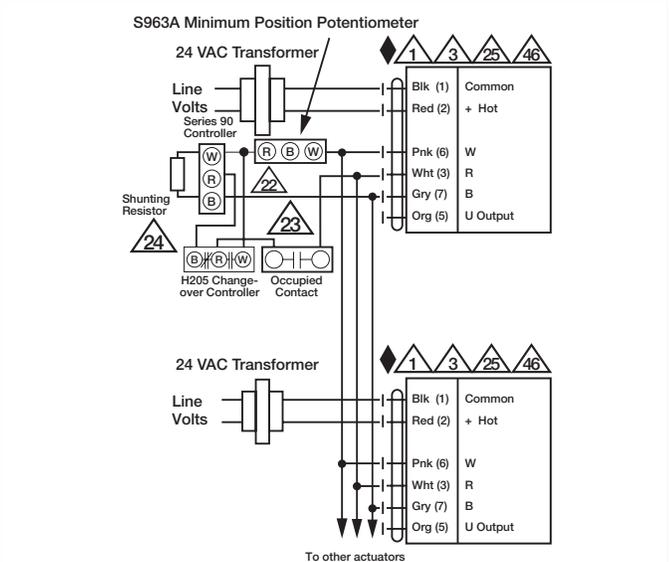


No. of actuators	Resistance
2	140 W
3	71.5 W
4	47.5 W
5	37.5 W
6	28 W

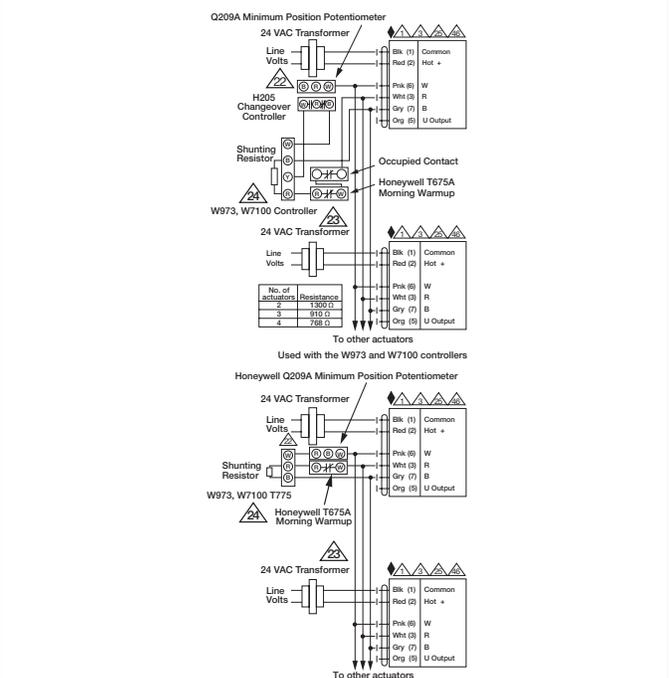
Resistor Kit No. ZG-R03

### Multiple Actuators

Date created, 06/01/2016 - Subject to change. © Belimo Aircontrols (USA), Inc.



**Multiple Actuators with Minimum Position Potentiometer**



**Multiple Actuators Used with W973, W7100 and T775**