

# LMX24-MFT95

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



MFT



| Technical Data        | LMX24-MFT95  |
|-----------------------|--|
| Power supply          | 24 VAC ± 20% 50/60 Hz<br>24 VDC ± 10%  |
| Power consumption     | 2.5 W (1.2 W)  |
| Transformer sizing    | 5 VA (Class 2 power source)  |
| Electrical connection | 18 GA plenum rated cable<br>1/2" conduit connector<br>protected NEMA 2 (IP54)<br>3 ft [1m] 10 ft [3m] 16 ft [5m] |
| Overload protection   | electronic throughout 0 to 95° rotation  |
| Operating range WRB   | 135 Ω Honeywell Electronic Series 90,<br>135 Ω input   |
| Feedback output U     | 2 to 10 VDC, 0.5 mA max, VDC variable  |
| Angle of rotation     | max. 95°, adjustable with mechanical stop<br>electronically variable   |
| Torque                | 45 in-lb [5 Nm]  |
| Direction of rotation | reversible with  switch  |
| Position indication   | reflective visual indicator (snap-on)  |
| Manual override       | external push button   |
| Running time          | 150 seconds (default)<br>variable (35 to 150 seconds)  |
| Humidity              | 5 to 95% RH non condensing (EN 60730-1)  |
| Ambient temperature   | -22°F to 122°F [-30°C to 50°C]   |
| Storage temperature   | -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 UL 60730-1A/-2-14,<br>CAN/CSA E60730-1:02,<br>CE acc. to 2004/108/EEC and 2006/95/EC               |
| Noise level           | <35dB(A)   |
| Servicing             | maintenance free   |
| Quality standard      | ISO 9001   |
| Weight                | 1.5 lbs [0.7 kg]   |

†Rated Impulse Voltage 800V, Type of action 1, Control Pollution Degree 3.

Torque min. 45 in-lb for control of damper surfaces up to 11 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 from 1/4" up to 5/8" in diameter by means of its universal clamp. Shafts up to 3/4" diameter can be accommodated by an accessory clamp.

The default parameters for 0 to 135 Ω 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

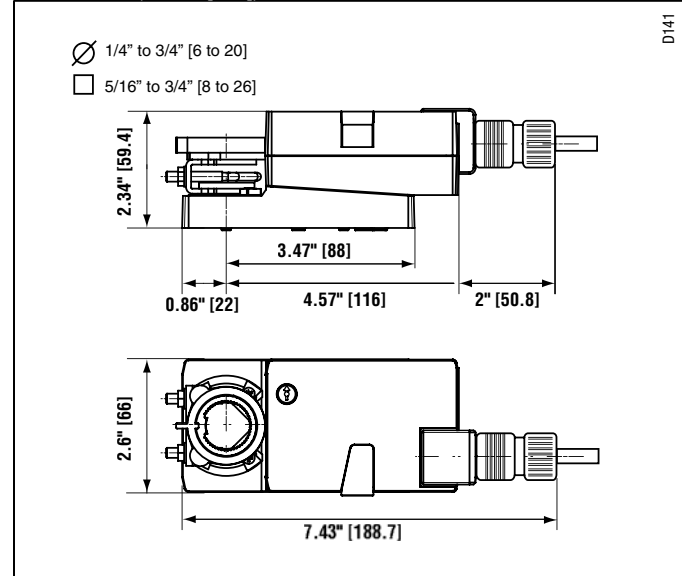
The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The anti-rotation strap supplied with the actuator will prevent lateral movement.

The LMX series 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 LMX24-MFT95 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.

## Dimensions (Inches [mm])



IM40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

### Accessories

|           |  |
|-----------|--|
| K-LM20    | 3/4" [20 mm] Shaft Clamp               |
| AV6-20    | Shaft Extension                        |
| ZG-LMSA   | Shaft Adaptor for 1/2" Diameter Shafts |
| ZG-LMSA-1 | Shaft Adaptor for 3/8" Diameter Shafts |
| ZS-100    | Weather Shield - Steel                 |
| ZS-150    | Weather Shield - Polycarbonate         |
| Tool-06   | 8 mm & 10 mm Wrench                    |
| S1A, S2A  | Auxiliary Switch(es)                   |
| P370      | Shaft Mount Auxiliary Switch           |
| P...A     | Feedback Potentiometers                |
| NSV24 US  | Battery Back-Up Module                 |
| ZG-X40    | Transformer                            |

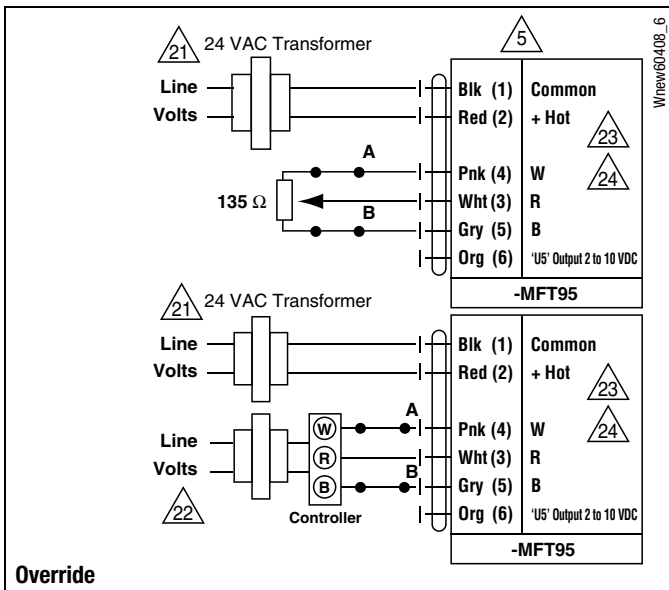
**NOTE:** When using LMX24-MFT95 actuators, only use accessories listed on this page.

### 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 from 1/4" to 5/8". Actuators must provide control in response to a 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.

### Wire Colors

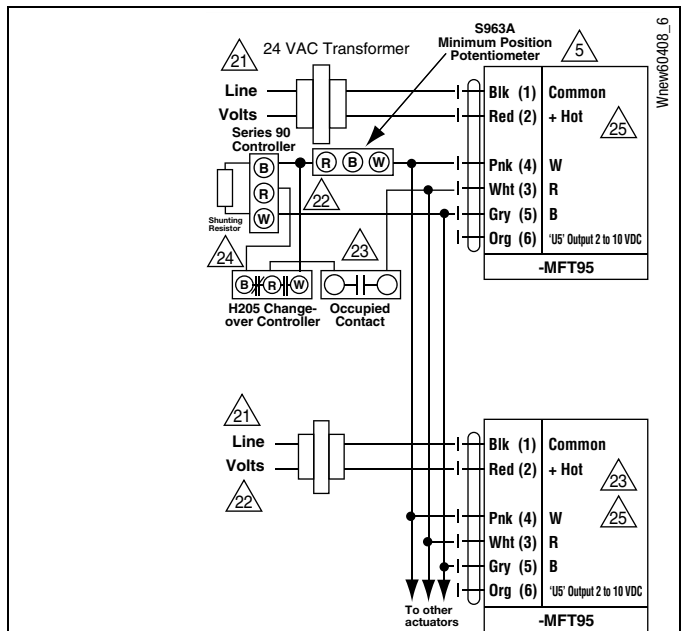
|           |           |            |
|-----------|-----------|------------|
| 1 = Black | 3 = White | 5 = Gray   |
| 2 = Red   | 4 = Pink  | 6 = Orange |



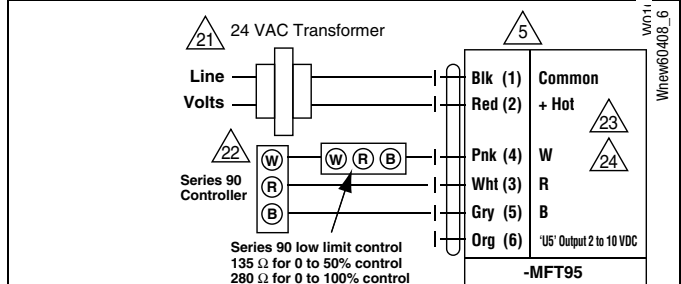
### Wiring Diagrams

#### INSTALLATION NOTES

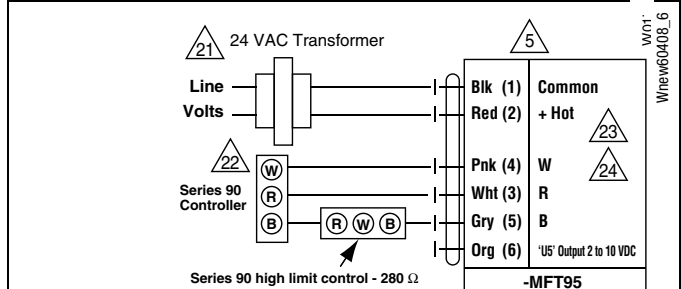
- 5 Actuators with plenum rated cable do not have numbers on wires; use color codes instead. Actuators with appliance cables are numbered.
- 21 Provide overload protection and disconnect as required.
- 22 Actuators and controller must have separate transformers.
- 23 Consult controller instruction data for more detailed information.
- 24 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.
- 25 To reverse control rotation, use the reversing switch.



#### Wiring multiple actuators to a Series 90 controller using a minimum position potentiometer.



#### Low Limit Control



#### High Limit Control