

Non-Spring Return Electric SmartX Actuators

The MF41-6043 and MS41-6043 series are direct-coupled 24 Vac non-spring return electric actuators. The MF41-6043 series is designed for floating control of building HVAC dampers. The MS41-6043 series is designed to provide proportional control. Models are standard with a plenum-rated cable.

Applications

The MF41-6043 and MS41-6043 series of damper actuators are used in constant or variable air volume installations for control of HVAC dampers requiring up to 35 lb.-in. (4 Nm) torque.

Features

- Compact, lightweight design.
- Easy-to-see position indicator.
- Self-adapting capability for maximum flexibility in damper positioning.
- UL, CSA, CE compliance listed.
- Quiet, low-power operation.
- NEMA 2 rated enclosure.
- Manual Override.
- Plenum cable standard.
- Independently adjustable dual auxiliary switches option available (MX41-6043-5X2).
- Feedback potentiometer option available (MF41-6043-510).
- Feedback position output signal available (MS41-6043 Series).
- Adjustable start/span option available (MS41-6043-52X).



Specifications

Inputs

Operating Voltage: 24 Vac +20%, -15%

Frequency: 50/60 Hz

Power Consumption:

2.3 VA (MF41-6043 Series)

3.3 VA (MS41-6043 Series)

Connections: 3 ft. 18 AWG. Reference Model Chart.

Control Signal (MS41-6043 Series):

Input Signal: Voltage-input, 0 to 10 Vdc

Input resistance, 100K Ohms

Feedback Signal: (MS41-6043 Series)

Position output signal: Voltage-output, 0 to 10 Vdc

Maximum output current, DC 1 mA

Outputs

Stroke: Nominal angle of rotation, 90°
Maximum angular rotation, 95°
Field adjustable to limit travel on either end of stroke.

Damper Shaft: Accepts 3/8 to 5/8-inch (8 to 16 mm) diameters. Reference Figure-1.

Minimum shaft length, 3/4-inch (20 mm).

Nominal Damper Area: Actuator sizing should be done in accordance with damper manufacturer's specifications.

Product Life:

100,000 full strokes.

Function

Torque: rated 35 lb.-in. (4Nm)

Timing: 108 sec. at 50 HZ
90 sec. at 60 Hz

Environment

Ambient Temperature Limits:

Shipping and Storage, -22 to 140°F (-30 to 60°C)

Operation, -22 to 130°F (-30 to 55°C)

Humidity: 95% RH, non condensing

Location: NEMA Type 2, IP54 per EN60529

Housing material, durable plastic

Gear lubrication, Silicone free

Equipment Rating: Class 2 per UL, CSA, Class III per EN60730

Agency Listings

UL listed to UL873

C-UL certified to Canadian Standard C22.2 No. 24-93

CE conformity for plenum models

In accordance with European Union for
Electromagnetic Compatibility directive (EMC) 89/336/
EEC

Emissions standards EN 50081-1

Immunity standards EN 50082-2

Dimensions

5-7/16" H X 2-5/8" W X 2-3/8" D (137mm H X 68mm W X 60mm D) Width does not including manual override slider

Weight: 1.06 lb. (0.48 kg)

Auxiliary Features

Feedback potentiometer, 0 to 1000 W, <10 mA (MF41-6043)

Control Signal Adjustment: (MS41-6043)

Start Point, Between 0 to 5 Vdc

Span, Between 2 and 30 Vdc.

Dual auxiliary switch (SPDT):

Contact rating, 4A resistive, 2A inductive
Voltage, 24 Vac/24 Vdc

Switch range:

Switch A, 0 to 90° with 5° intervals

Recommended range usage, 0 to 45°

Factory setting, 5°

Switch B, 0 to 90° with 5° intervals

Recommended range usage, 45 to 90°

Factory setting, 85°

Switching Hysteresis, 2°

Accessories

AM-728: Conduit adaptor providing a connection between the actuator and conduit.

AM-727: Rotary to linear drive adapter.

AM-726: Rotary to linear drive adapter with mounting bracket.

Table-1 Model Number Chart

Model Number	Auxiliary Switches	Potentiometer	Start/Span
MF41-6043	No	No	No
MF41-6043-502	Yes	No	No
MF41-6043-510	No	1K	No
MS41-6043	No	No	No
MS41-6043-502	Yes	No	No
MS41-6043-520	No	No	Yes
MS41-6043-522	Yes	No	Yes

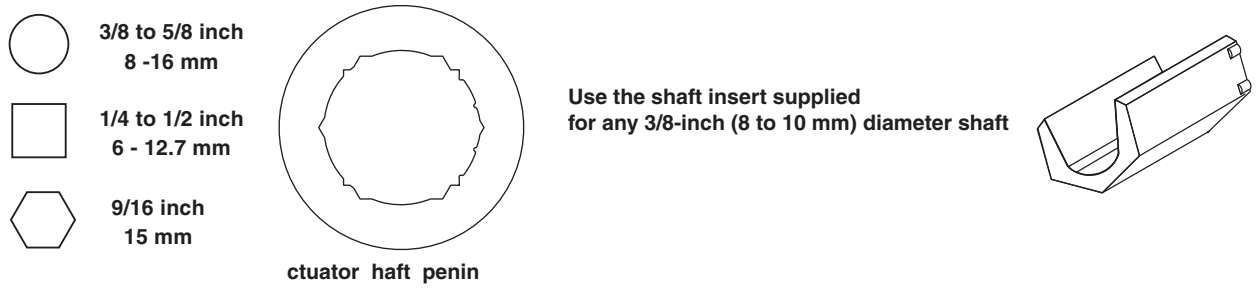


Figure-1 Damper Shaft Sizes.

Wiring

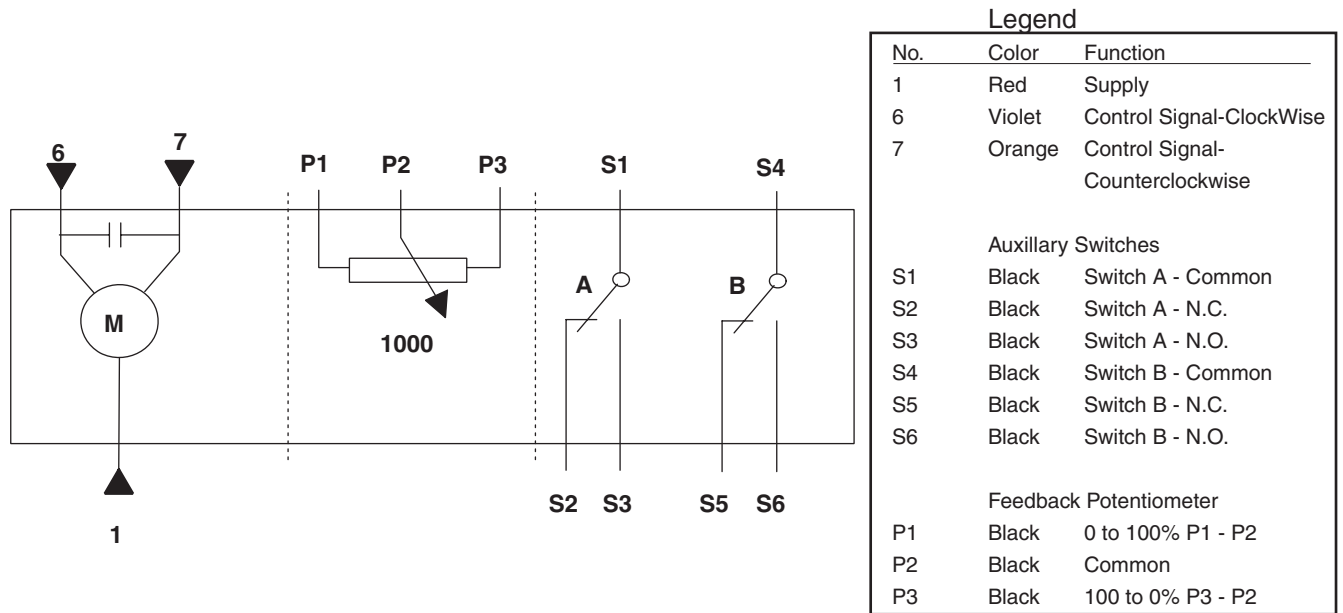


Figure-2 MF41-6043-5XX Wiring Diagram.

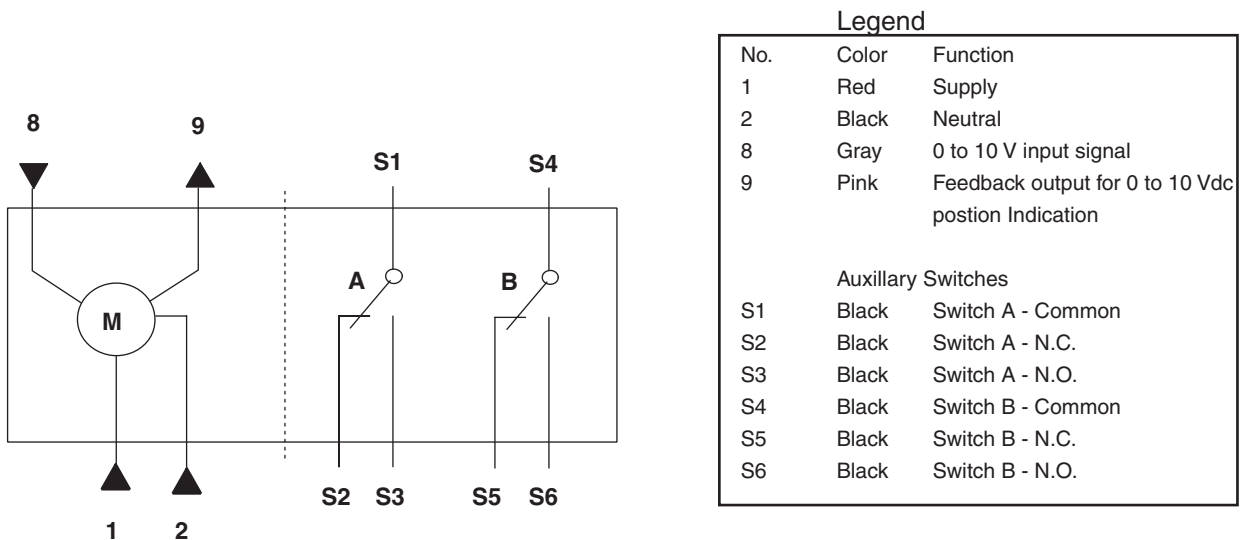


Figure-3 MS41-6043-502 and MS41-6043-522 Wiring Diagram.

Dimensions

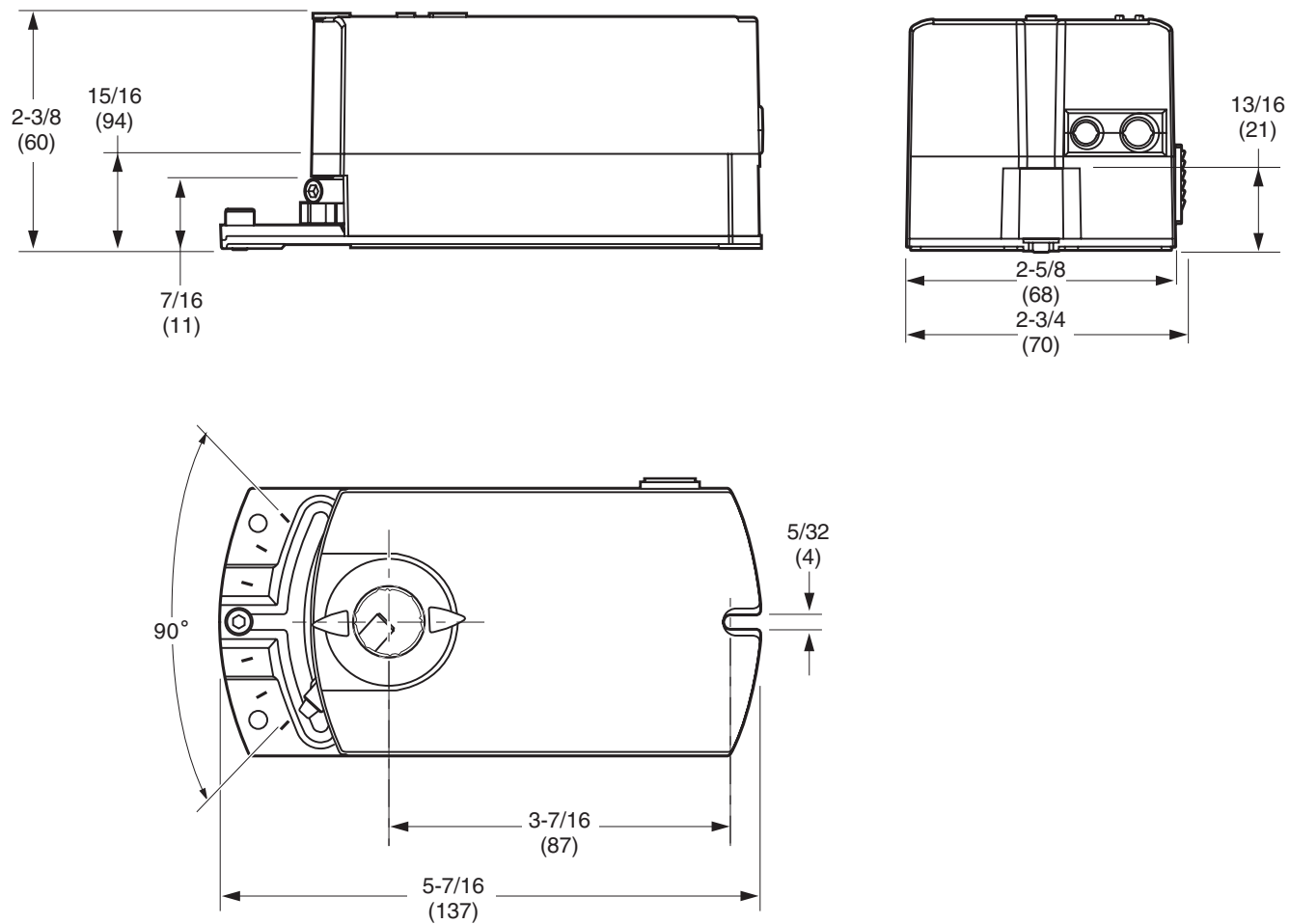


Figure-4 Actuator Dimensions Shown in Inches (mm).