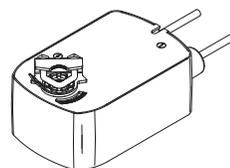
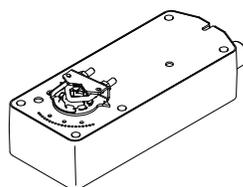


Spring Return DuraDrive® Proportional Actuator

For spring return applications that require proportional modulation control of dampers and valves in HVAC systems.

Features:

- Proportional models controlled by 6-9 Vdc, 2-10 Vdc or 4-20 mA with the addition of a 500 ohm resistor.
- 35 lb.-in. (4 N-m), 60 lb.-in (7 N-m), 133 lb.-in (15 N-m).
- Direct mount to round or square damper shaft.
- Overload protection throughout rotation.
- True mechanical clockwise or counterclockwise spring return operation for positive close-off in airtight applications.
- Visual position indicator.
- Direct acting or reverse acting control mode available on proportional models.
- Rotation limiting available.
- Rugged die-cast housing.
- MS40-7043: plenum rated cables.
- MS41-7xxx equipped with manual override.



| Model Chart | | | | | | | | | | | | | | | | | | |
|----------------------------|---------------------------------------|------------|---|---------------------------------|------------------|---------------|------------|---------------------|---------|---|------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------------|--------------------------------------|------------------------|---------|
| Model No. | Output Torque Rating lb.-in. (N-m) | | Stroke | Power Input | | | | | | Approximate Timing in Seconds @ 70°F (21°C) ^a | | SPDT Auxiliary Switches | Shaft Size | Auxiliary Power Supply | Input | | | |
| | | | | Voltage | Running | | DC Amps | Holding 50/60 Hz | Powered | Spring Return | | | | | | | | |
| | 50 Hz VA | 60 Hz W | | | 60 Hz VA | 50/60 Hz W | | | | | | | | | | | | |
| MS40-7043 ^c | 35 (4) | 120 (14) | 95° ± 5° maximum, adjustable from 40 to 95° with mechanical stop | 24 Vac ± 20% 22-30 Vdc | 5.6 | 4.2 | 5.6 | 4.2 | .15 | 2.4 | <130 | <25 | No | 5/8 in. dia. 1/2 in. sq. | None | 2-10 Vdc or 4-20 mA w/500 Ω | | |
| MS40-7043-501 ^c | | | | | One ^d | | | | | | | | | | | | | |
| MS40-7043-MP | | | | | 6.6 | 5.0 | 6.6 | 5.0 | .17 | 3.2 | | | One ^d | | | | +20 Vdc 25mA max | 6-9 Vdc |
| MS40-7043-MP5 | | | | | 5.8 | 4.6 | 5.8 | 4.6 | | 2.3 | | | <195 | | | | <30 | No |
| MS41-7073 | 60 (7) | 160 (18) | 95° ± 5° maximum, adjustable from 30 to 95° with AM-689 rotation limiter | 9.8 | 7.4 | 9.7 | 7.4 | .28 | 2.9 | <190 | <30 | Two ^e | | | | | | |
| MS41-7073-502 | | | | | | | | | | | | Two ^e | | | | | | |
| MS41-7153 | 133 (15) | 300 (34) | 95° ± 5° maximum, adjustable from 30 to 95° with AM-689 rotation limiter | 9.8 | 7.4 | 9.7 | 7.4 | .28 | 2.9 | <190 | <30 | No | 3/4 in. dia. 1/2 in. sq. | None | 2-10 Vdc or 4-20 mA w/500 Ω | | | |
| MS41-7153-502 | | | | | | | | | | | | Two ^e | | | | | | |

^a Timing was measured with no load applied to the actuator.
^b De-rating required for spring return actuators at low temperatures.
^c With plenum-rated cable.
^d One adjustable from 0 to 95° rotation (0 to 1 scale).
^e One adjustable from 25 to 85° rotation and one set to operate @ 5° fixed.

Specifications

Inputs

| | |
|-----------------------|---|
| Control signal | Proportional, 6 to 9 Vdc, 2 to 10 Vdc, or 4 to 20 mA with 500 ohm resistor. |
| Power | All 24 Vac circuits are Class 2. Refer to Model Chart for AC and DC ratings. Half wave device. |
| Connections | MS41-7073, MS41-7153: 3 ft. (0.9 m) long, appliance cables, 1/2 in. conduit connectors. For M20 metric conduit, use AM-756 adaptor. MS40-7043: 3 ft. (0.9 m) long, plenum-rated cables, 1/2 in. conduit connectors. For M20 metric conduit, use AM-756 adaptor. MS40-7043: 3 ft. (0.9 mm) plenum rated cable. |

Outputs

| | |
|-------------------|--|
| Motor Type | Brushless DC. |
| Electrical | Internal Power Supply: 20 Vdc, 25 mA. Control Mode: Switch provided for selection of direct acting or reverse acting control mode. |
| Mechanical | Position Indicator: MS40-7043: Visual indicator, 0 to 1 (0 is the spring return position). MS41-7073, MS41-7153: Pointer (-5 to 90°) and scale are provided for position indication (-5 is normal or spring return position). Direction of rotation: CW or CCW rotation is available through reversible mounting. Damper shaft clamp: Direct coupled using a through hole output hub. |

Environment

| | |
|---------------------------|---|
| Temperature limits | Shipping and storage: -40 to 160°F (-40 to 71°C) ambient. Operating: -22 to 140°F (-30 to 60°C). |
| Humidity | 5 to 95% RH, non-condensing. |
| Locations | NEMA 1, NEMA 2 (IEC IP54) with conduit in the down position. |

Agency Listings

| | |
|---------------------------|---|
| UL | UL-873, Underwriters Laboratories Listed (File #9429 Category: Temperature-Indicating and Regulating Equipment). |
| European Community | EMC Directive (89/336/EEC). Low Voltage Directive (72/23/EEC). |
| CSA | Canadian Standards C22.2 No. 4-93. |
| Australia | This product meets requirements to bear the C-Tick mark according to the terms specified by the Communications Authority under the Radio Communications Act 1992. |

General Instructions

Refer to F-26645.

MS40-7043, MS41-7073, MS41-7153

Accessories

| Model No. | Description |
|--|--|
| MS40-7043, MS41-7073, MS41-7153 | |
| AM-673 ^a | Mounting bracket. |
| AM-674 | Weather shield. |
| AM-675 | Weather shield base. |
| AM-676 | Universal shaft extension, approximately 9-1/2" long (242 mm) for use on 3/8" to 11/16" (10 to 17 mm) round shafts, 3/8" to 9/16" square shafts. (AM-753 clamps required). |
| AM-703 | Span adjustment. |
| AM-704 | Modulating interface. |
| AM-705 | Positioner. |
| AM-706 | Positioner. |
| AM-707 | Digital indication. |
| AM-708 | 500 ohm resistor. |
| AM-756 | Metric conduit adaptor M20 x 1.5 to 1/2" NPT (two per package). |
| AM-714 | Weather shield. |
| AM-715 ^f | Crank arm adaptor kit. |
| AM-762 | Replacement 9-inch anti-rotation bracket |
| MS41-7073, MS41-7153 | |
| AM-671 ^{abcd} | Mounting bracket. |
| AM-672 ^{abcd} | Mounting bracket. |
| AM-686 | Position indicator. |
| AM-687 | V-clamp. |
| AM-688 | Replacement universal clamp |
| AM-689 | Rotation limiter. |
| AM-690 | Crank arm. |
| AM-691 | Crank arm. |
| AM-692 | V-bolt. |
| AM-693 ^{ef} | Crank arm kit. |
| AM-758 | Universal short "U" mounting bracket |
| AM-759 | Universal long "U" mounting bracket |
| AM-760 | Universal slotted "L" mounting bracket |
| VA-602 | Vx-7xxx 1 to 2 in. valve linkage. |
| VA-607 | Vx-9xxx 2-1/2 to 4 in. valve linkage. |
| MS40-7043 | |
| AM-709 | Position indicator and stroke limiter. |
| AM-710 | V-clamp. |
| AM-711 | Crank arm adaptor kit. |
| AM-712 ^f | Crank arm adaptor kit. |
| AM-713 ^f | Bracket. |
| AM-717 | Replacement universal clamp |
| AM-761 | Replacement 7-inch anti-rotation bracket |
| AV-605 | Vx-7xxx 1/2 to 2 in. valve linkage. |

^a Drill appropriate mounting holes where needed.

^b AM-693 crank arm kit required.

^c Cannot be used with Mx41-634x or Mx40-717x series actuators.

^d The large "C"-shaped clamps included in AM-693 crank arm kit are required for mounting the actuator.

^e AM-692 V-bolt kit required.

^f Use the self-tapping screws and flat washers provided in kit to mount actuator.

Typical Applications

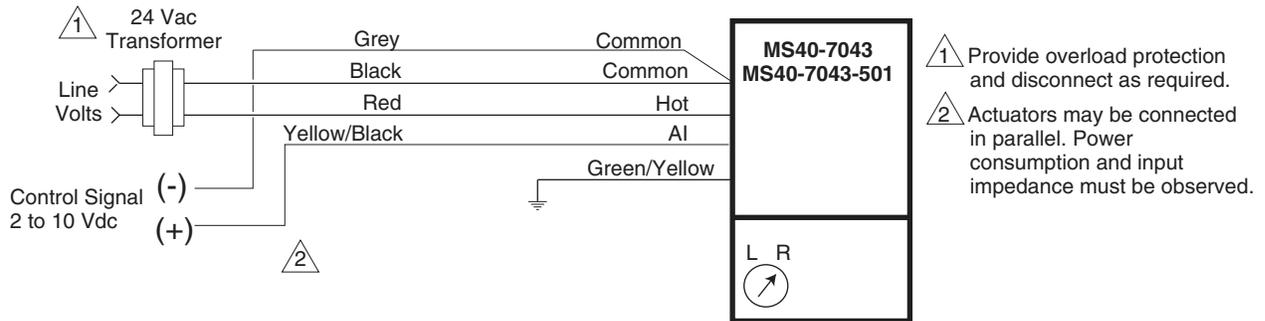


Figure 1 2 to 10 Vdc Control of MS40-7043 and MS40-7043-501 Actuator.

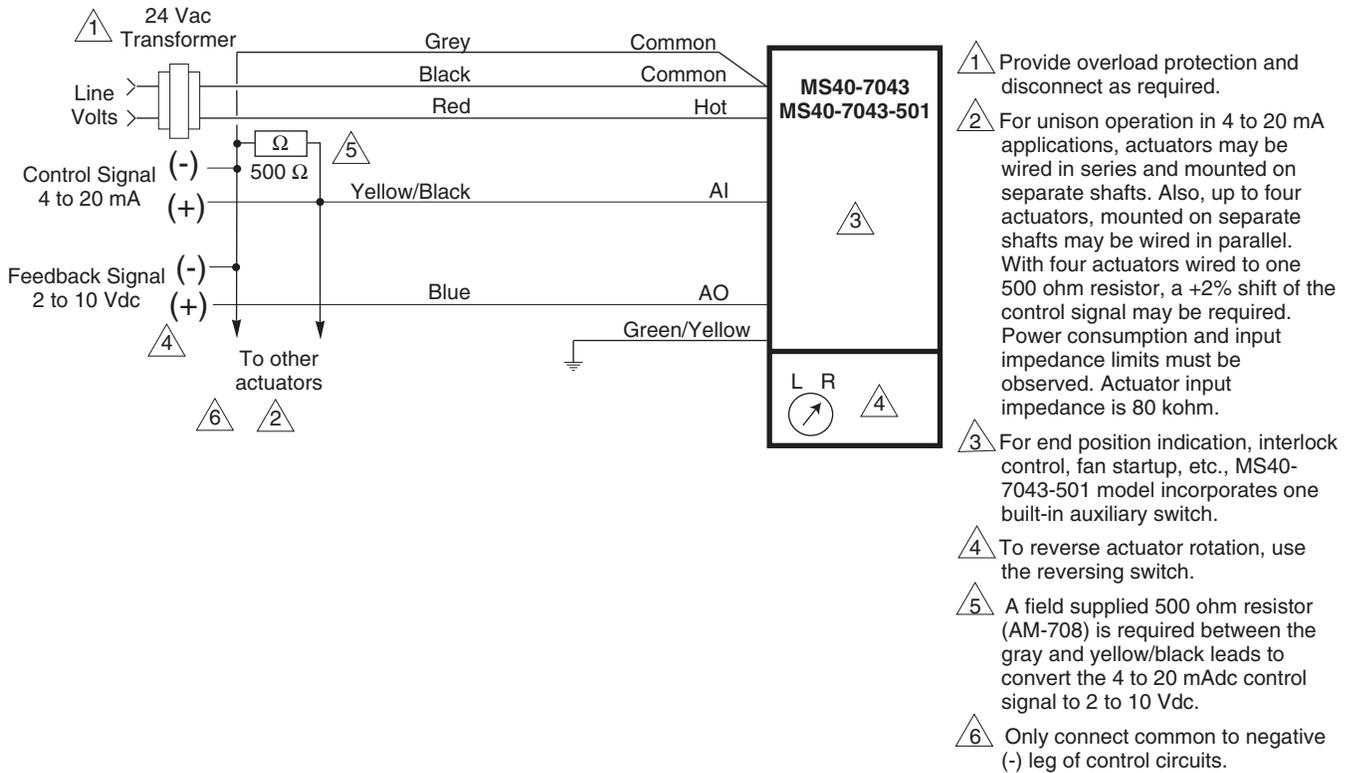


Figure 2 4 to 20 mA Control of MS40-7043 and MS40-7043-501 with 2 to 10 Vdc Feedback Control.

MS40-7043, MS41-7073, MS41-7153

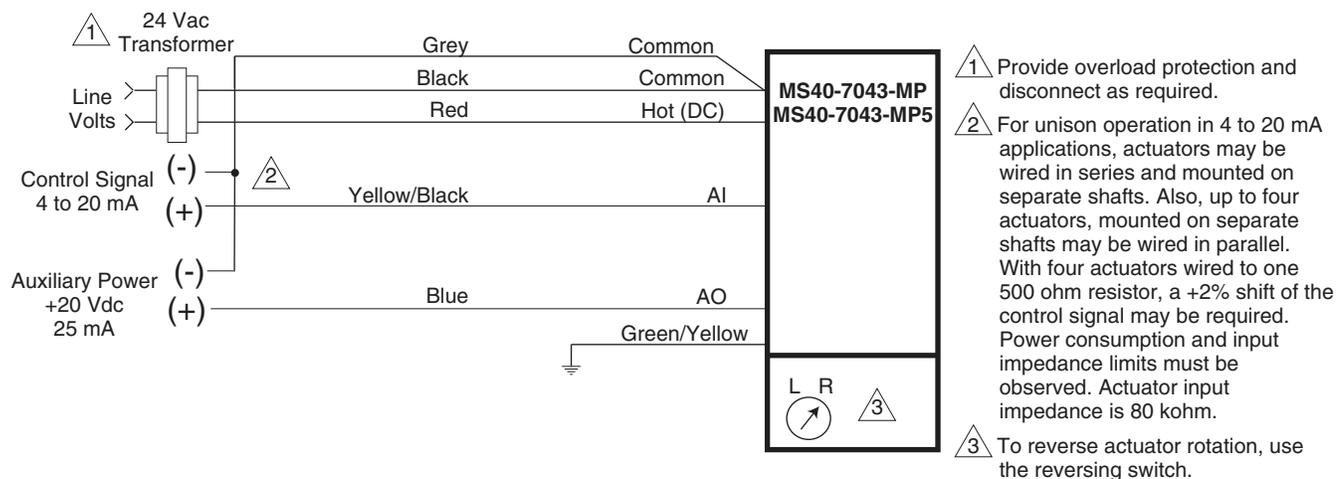


Figure 3 6 to 9 Vdc Proportional Control with 20 Vdc Power Output.

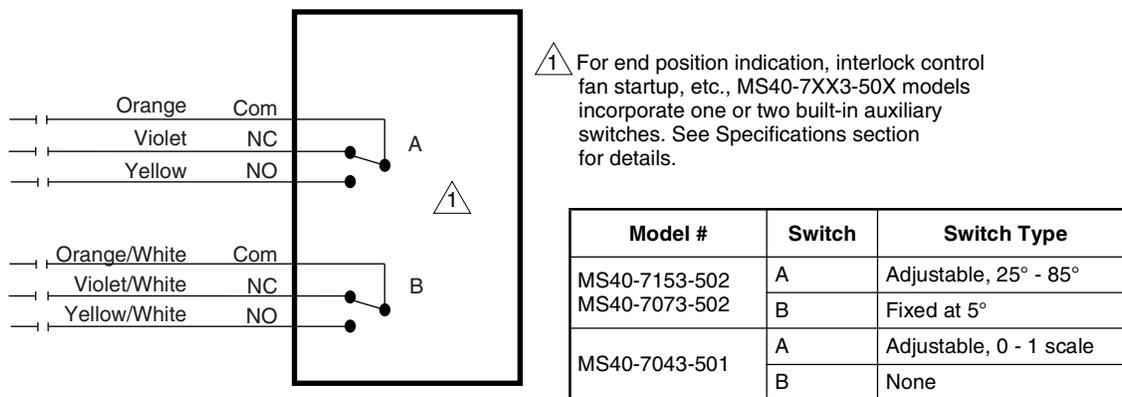


Figure 4 Optional Auxiliary Switches.

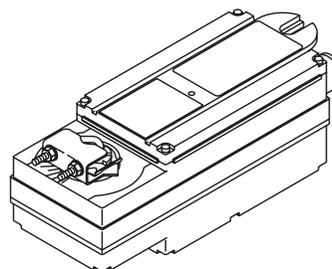
MS40-717x Series

Spring Return DuraDrive® Proportional Actuator

For spring return applications that require proportional modulation control of dampers and valves in HVAC systems.

Features:

- 150 lb.-in. (17 N-m) rated torque.
- Direct mount to round or square damper shaft.
- Overload protection throughout rotation.
- True mechanical clockwise or counterclockwise spring return operation for positive close-off in airtight applications.
- Oil immersed gear train provides continuous lubrication.
- NEMA 4 housing (IEC IP56).
- Automatic current sensing motor control provides extended reliability and repeatable timing.
- Visual position indicator.
- Provide proportional control compatible with 2 to 10 Vdc or 4 to 20 mA dc with intergrated resistor.



Model Chart

Damper Actuators.

| Model No. | Output Torque Rating lb.-in. (N-m) | | Actuator Power Input 50/60 Hz. | | | | | SPDT Auxiliary Switches | Approximate Timing in Seconds @ 70°F (21°C) with No Load | | Shaft Size |
|------------------------|---------------------------------------|------------------|--------------------------------|-------|-------------|---------|---------|-------------------------------|--|------------------------------|------------|
| | | | Voltage | Watts | Stroke | VA | | | Powered | Spring Return | |
| | Minimum ^a | Maximum Stall | | | | Running | Holding | | | | |
| MS40-7173 | 150 (17) | 450 (51) | 24 Vac ± 20% | 7.1 | 93° ± 1° | 9.4 | 5.4 | No | <145 | 1.05 in. dia. 5/8 in. sq. | |
| MS40-7170 ^b | | | 120 Vac ± 10% | 7.1 | | 11.1 | 9.1 | | | | |
| MS40-7171 | | | 240 Vac ± 10% | 7.2 | | 11.8 | 10.1 | | | | |

^a De-rating required for spring return actuators at low temperatures.

^b The CE directive is not applicable to this model.

Valve Actuator/Linkages.

| Model No. | Linkage (Included) ^a | Actuator Power Input 50/60 Hz. | | | | SPDT Auxiliary Switches |
|----------------------------|------------------------------------|--------------------------------|-------|---------|---------|----------------------------|
| | | Voltage | Watts | VA | | |
| | | | | Running | Holding | |
| MS40-7173-200 | AV-602 | 24 Vac ± 20% | 7.1 | 9.4 | 5.4 | No |
| MS40-7170-200 ^b | | 120 Vac ± 10% | 7.1 | 11.1 | 9.1 | |
| MS40-7171-200 | | 240 Vac ± 10% | 7.2 | 11.8 | 10.1 | |
| MS40-7173-220 | AV-607 | 24 Vac ± 20% | 7.1 | 9.4 | 5.4 | |
| MS40-7170-220 | | 120 Vac ± 10% | 7.1 | 11.1 | 9.1 | |
| MS40-7171-220 | | 240 Vac ± 10% | 7.2 | 11.8 | 10.1 | |

^a AV-602: Use with 1-1/4 to 2 in. globe valves. AV-607: Use with 2-1/2 to 4 in. globe valves.

^b The CE directive is not applicable to this model.

Specifications

| Inputs | |
|-----------------------------------|---|
| Control signal | Proportional, 2 to 10 Vdc or 4 to 20 mAdc with integral 500 ohm resistor. |
| Power | Refer to Model Chart. |
| Connections | 2 ft. (0.6 m) appliance cables, 1/2 in. conduit connector. For M20 metric conduit, use AM-756 adaptor. |
| Outputs | |
| Motor Type | Brushless DC. |
| Mechanical | Direction of rotation: CW or CCW rotation is available through reverse mounting. |
| | Dual shaft clamp: Direct coupled using a through hole output hub. |
| | Position indicator: Pointer and scale are provided for position indication (0° is the normal, or spring return position). |
| | Stroke: 93° ± 1° |
| Environment | |
| Ambient Temperature limits | Shipping and storage: -40 to 160°F (-40 to 71°C). Operating: -25 to 140°F (-32 to 60°C). |
| Humidity | 5 to 95% RH, non-condensing. |
| Locations | NEMA 1, NEMA 4 (IEC IP56) with customer supplied water tight connector. |
| Dimensions | 10-27/32 H x 4 W x 4 D in. (275 x 102 x 102 mm). |
| Agency Listings | |
| UL | UL-873, Underwriters Laboratories Listed (File #E9429 Category: Temperature-Indicating and Regulating Equipment). |
| European Community | EMC Directive (89/336/EEC). Low Voltage Directive (72/23/EEC). |
| CSA | Canadian Standards C22.2 No. 4-93. |
| Australia | This product meets requirements to bear the C-Tick mark according to the terms specified by the Communications Authority under the Radio Communications Act 1992. |
| General Instructions | Refer to F-26748 and F-27384. |

Accessories

| Model No. | Description |
|-----------|---|
| AM-674 | Weather shield. |
| AM-676 | Universal shaft extension, approximately 9-1/2 in. long (242 mm) for use on 3/8 to 1 1/16 in. (10 to 17 mm) round shafts, 3/8 to 9/16 in. square shafts. AM-753 clamps required). |
| AM-703 | Span adjustment. |
| AM-704 | Modulating interface. |
| AM-705 | Positioner. |
| AM-706 | Positioner. |
| AM-707 | Digital indication. |
| AM-751 | Standard anti-rotation bracket 9 in. long x 1 3/16 in. wide (229 x 21 mm), included with actuator. |
| AM-752 | Optional anti-rotation bracket 4 in. long x 1-11/16 in. wide (102 x 43 mm), for narrow spaces. |
| AM-753 | Damper shaft mounting clamps for 5/8 in. square shaft, 3/4 in. and 1 in. round shafts (two per package). |
| AM-754 | Standard universal mounting clamps for 3/8 to 1/2 in. (10 to 13 mm) round and square shafts, two included with actuator. |
| AV-602 | Vx-7xxx 1/2 to 2 in. valve linkage. |
| AV-607 | Vx-9xxx 2-1/2 to 4 in. valve linkage. |
| M-756 | Metric conduit adaptor M20 x 1.5 to 1/2 in. NPT (two per package). |

MS40-717x Series

Typical Applications

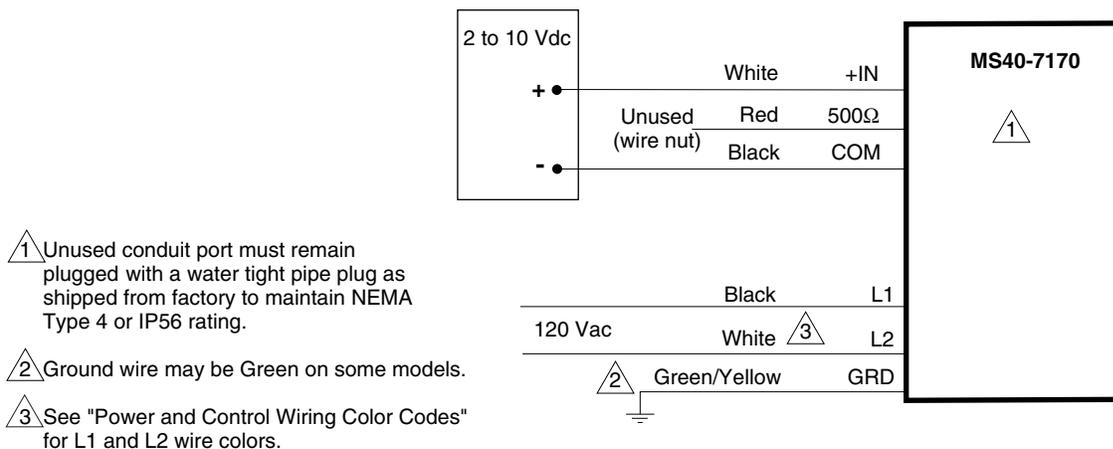


Figure 1 Typical MS40-7170 2 to 10 Vdc Wiring Diagram (120 Vac).

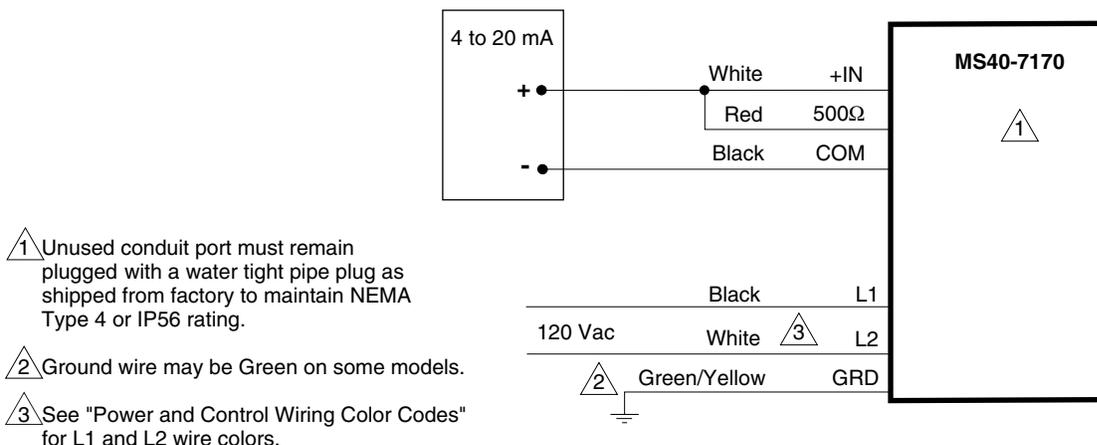


Figure 2 Typical MS40-7170 4 to 20 mA Wiring Diagram (120 Vac).

Power and Control Wiring Color Codes.

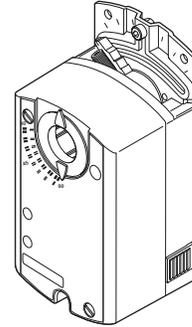
| Model | Lead | Color | Voltage |
|-----------|------|------------|---------|
| MS40-7171 | L1 | Brown | 240V |
| | L2 | Light Blue | 240V |
| MS40-7173 | L1 | Black | 24 V H |
| | L2 | Black/Blue | 24 V G |

Non-Spring Return DuraDrive® Modulating Actuator

The DuraDrive direct coupled 24 Vac non-spring return rotary electric actuators are designed for modulating control of dampers.

Features:

- Compact, lightweight design.
- Self-adapting capability for maximum flexibility in damper positioning.
- Manual override.
- 5° offset from 0° as shipped from factory.
- Offset and slope (zero and span) adjustment models available.
- Independently adjustable dual auxiliary switches available.
- CUL and UL listed; CE certified.
- 0 to 10 Vdc feedback output.



Model Chart

Damper Actuators.

| Model No. | Output Torque Rating lb.-in. (N-m) | Actuator Power Input | | Slope/Offset Adjustable (Zero Span) | SPDT Auxiliary Switches | Approximate Timing in Seconds @ 70°F (21°C) with No Load | | Shaft Size | | | |
|---------------|--|----------------------|-----|--|-------------------------|--|-------|--|-----|-----|--|
| | | Voltage | VA | | | 50 Hz | 60 Hz | | | | |
| | Running VA | | | | | | | | | | |
| MS41-6043 | 35 (4) | 24 VAC +20%-15% | 3.3 | None | None | 108 | 90 | 3/8" to 5/8" dia. 1/4" to 1/2" sq. 9/16" hex | | | |
| MS41-6043-520 | | | | Yes | None | | | | | | |
| MS41-6043-522 | | | | Yes | Two | | | | | | |
| MS41-6043-502 | | | | None | Two | | | | | | |
| MS41-6083 | 70 (8) | | | 24 VAC +20%-15% | 3.3 | None | None | | 150 | 125 | 3/8" to 5/8" dia. 1/4" to 1/2" sq. 9/16" hex |
| MS41-6083-520 | | | | | | Yes | None | | | | |
| MS41-6083-522 | | | | | | Yes | Two | | | | |
| MS41-6083-502 | | | | | | None | Two | | | | |

Valve Actuator/Linkages.

| Model No. ^a | Linkage (Included) | Actuator Power Input 50/60 Hz. | | SPDT Auxiliary Switches |
|------------------------|--------------------|--------------------------------|------------|-------------------------|
| | | Voltage | VA Running | |
| MS41-6043-200 | AV-603 | 24 Vac + 20% - 15% | 3.3 | No |
| MS41-6043-202 | | | | Yes |
| MS41-6083-200 | | | | No |
| MS41-6083-202 | | | | Yes |

^a Refer to Valve Catalog, F-27384 for correct applications.

MS41-60xx Series

Specifications

| Inputs | |
|-----------------------------------|--|
| Control signal | MS41-60x3: Proportional, 0 to 10 Vdc; input resistance 100K Ω . Control signal adjustment available with MS41-60x3-522 and MS41-60x3-522. Start point (offset): 0 and 50 Vdc (factory setting = 0 Vdc) Span 2 to 30 Vdc. |
| Power | 24 Vac, +20%-15%, rated Class 2, Class III per EN60730. MS41-6083: 24 Vac +20%/-10% at 90 to 130°F (32 to 55°C) ambient. Half wave device. |
| Connections | 3 ft. (0.9 m) long, 18 AWG leads, plenum-rated. |
| Outputs | |
| Electrical | Output voltage: 0 to 10 Vdc. |
| | Maximum output current: 1 mA. |
| | MS41-60xx-502 auxiliary switch contact rating: AC Rating: 24 Vac, 4A Resistive, 2A Inductive. DC Rating: 12 to 30 Vdc, DC 2A. |
| | Switching hysteresis: 2°. Switch range: Switch A: 0 to 90° range in 5° intervals; Recommended range usage: 0 to 45°; Factory setting: 5°. Switch B: 0 to 90° range in 5° intervals; Recommended range usage: 45 to 90°; Factory setting: 85°. |
| | Timing: See Model Chart. |
| Mechanical | Output torque rating: MS41-6043 , 35 lb-in. (4 N-m); MS41-6083 , 70 lb-in. (8 N-m). |
| | Stroke: Normal angle of rotation is 90°, limited to a maximum of 95°. Field adjustable to limit travel on either end of stroke. MS41-60x3-52x have adjustable start point and span. Position indicator: Adjustable pointer is provided for position indication. |
| Environment | |
| Ambient temperature limits | Shipping and Storage: -40 to 158°F (-40 to 70°C). Operating: -25 to 130°F (-32 to 55°C). |
| Humidity | 5 to 95% RH, non-condensing. |
| Locations | NEMA 2, IP54 to EN60529. |
| Dimensions | 5-7/16 H x 2-3/4 W x 2-3/8 D in. (138 x 70 x 60 mm). |
| Agency Listings | |
| UL | UL-873, Underwriters Laboratories. |
| European Community | EMC Directive (89/336/EEC). Emissions (EN50081-1). Immunity (EN50082-2). |
| CUL | Canadian Standards C22.2 No. 24-93. |
| General Instructions | Refer to F-27214. |

Accessories

| Model No. | Description |
|-----------|-------------------------------------|
| AM-726 | Rotary to linear bracket. |
| AM-727 | Rotary to linear crank arm adaptor. |
| AM-728 | Conduit adaptor. |
| AM-729 | 3/8 in. shaft adapter. |
| AV-603 | 1/2 to 2 in. Vx-7xxx valve linkage. |

Typical Applications

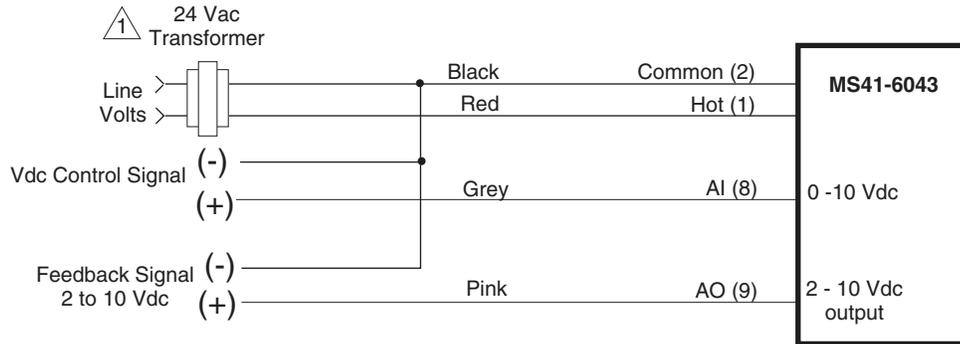


Figure 1 Typical Wiring for Proportional Control, 24 Vac, 0-10 Vdc Input.

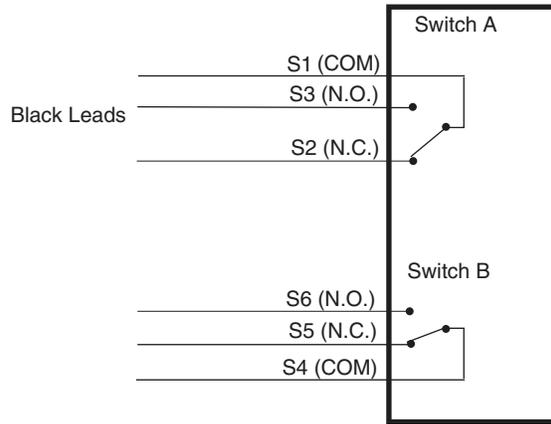


Figure 2 Typical Wiring for Auxiliary Switch Models MS41-60x3-502, -522, or -202.

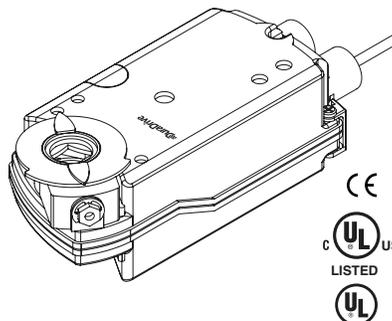
MS41-6153 Series

Non-Spring Return DuraDrive® Modulating Actuator

The DuraDrive direct-coupled, 24 Vac, non-spring return electronic actuator is designed for modulating control of building HVAC dampers.

Features:

- Synchronous motor technology with stall protection.
- Unique self-centering shaft coupling.
- Manual override.
- 133 lb-in (15 N-m) torque.
- 5° offset from 0° as shipped from factory.
- Mechanical range adjustment capabilities.
- Models with independently adjustable, dual auxiliary switches available.
- Built-in 1/2-in. conduit connection.
- UL and cUL listed, CE certified.
- 0 to 10 (factory set) or 2 to 10 Vdc input field selectable.
- 0 to 10 Vdc feedback output.



Model Chart

Damper Actuators.

| Model No. | Output Torque Rating lb.-in. (N-m) | Power Input @ 50/60 Hz | | | | | SPDT Auxiliary Switches | Approximate Timing in Seconds @ 70°F (21°C) with No Load | | Shaft Size |
|---------------|------------------------------------|------------------------|---------|---|---------|---|-------------------------|--|-------|---|
| | | Voltage | VA | | | | | 50 Hz | 60 Hz | |
| | | | Running | | Holding | | | | | |
| | | | VA | W | VA | W | | | | |
| MS41-6153 | 133 lb-in (15 N-m) | 24 Vac ± 20% | 5 | 4 | 1 | 1 | No | 150 | 125 | 1/4 to 3/4 in. dia. 1/4 to 1/2 in. sq. |
| MS41-6153-502 | | | | | | | 2 | | | |

Valve Actuator/Linkages.

| Model No. ^a | Linkage (Included) | Actuator Power Input 50/60 Hz. | | | SPDT Auxiliary Switches |
|------------------------|--------------------|--------------------------------|------------|-------|-------------------------|
| | | Voltage | VA Running | Watts | |
| MS41-6153-200 | AV-605 | 24 Vac ± 20% | 5 | 4 | No |
| MS41-6153-202 | | | | | Yes |
| MS41-6153-220 | AV-607 | | | | No |
| MS41-6153-222 | | | | | Yes |

^a Refer to Valve Catalog, F-27384 for correct applications.

Specifications

Inputs

| | |
|-----------------------|--|
| Control signal | 0 to 10 Vdc (factory set) or 2 to 10 Vdc input field selectable (max. 34 Vdc). Resistance: > 100K ohms. |
| Power | All 24 Vac circuits are Class 2. 24 Vac +20/-15% @ 50/60 Hz. Running VA: 5 @ 4 W, Holding VA: 1.2 @ 1 W. Half wave device. |
| Connections | 3 ft. (0.9 m) long, 18 AWG leads. |

Specifications (Continued)

| Outputs | |
|-----------------------------------|---|
| | Position output signal wires 9 and 2. |
| Output voltage: | 0 to 10 Vdc. |
| Maximum output current: | ± 1 mA |
| Electrical | Dual auxiliary switches available on MS41-6153-502. |
| | Switch contact rating: 6A resistive, 2A inductive. |
| | Switch voltage: 24 Vac. |
| | Switching hysteresis: 2. |
| | Switch range: Switch A: 0 to 90° range in 5° intervals; Recommended range usage: 0 to 45°; Factory setting: 5°. Switch B: 0 to 90° range in 5° intervals; Recommended range usage: 45 to 90°; Factory setting: 85°. |
| | Timing: 150 seconds @ 50 Hz. 125 seconds @ 60 Hz. |
| Mechanical | Output torque rating: 133 lb-in. (15 N-m). |
| | Stroke: Normal angle of rotation is 90°, limited to a maximum of 95°. Field adjustable to limit travel on either end of stroke. |
| | Position indicator: Adjustable pointer is provided for position indication. |
| Environment | |
| Ambient temperature limits | Operation: -25 to 130°F (-32 to 55°C). Storage and transport: -40 to 158°F (-40 to 70°C). |
| Humidity | 5 to 95% RH, non-condensing. |
| Locations | NEMA Type 1, IP54 according to EN 60 529. |
| Dimensions | 8-3/8 H x 3-1/4 W x 2-2/3 D in. (213 x 83 x 68 mm). |
| Agency Listings | |
| UL | UL-873, Underwriters Laboratories. UL Listed to UL 60730. |
| European Community | EMC Directive (89/336/EEC). Emissions (EN50081-1). Immunity (EN61000-6-2). |
| CUL | Canadian Standards C22.2 No. 24-93. |
| General Instructions | Refer to F-27215. |

Accessories

| Model No. | Description |
|-----------|--|
| AM-674 | Weather shield. |
| AM-675 | Mounting base for weather shield. |
| AM-703 | Span adjustment module. |
| AM-704 | Pulse to 2 to 10 Vdc converter. |
| AM-705 | Remote positioner surface mount for 0 to 10 Vdc control. |
| AM-706 | Remote positioner flush mount for 0 to 10 Vdc control. |
| AM-726 | Linear conversion kit with mounting bracket. |
| AM-727 | Linear conversion kit. |

MS41-6153 Series

Typical Applications

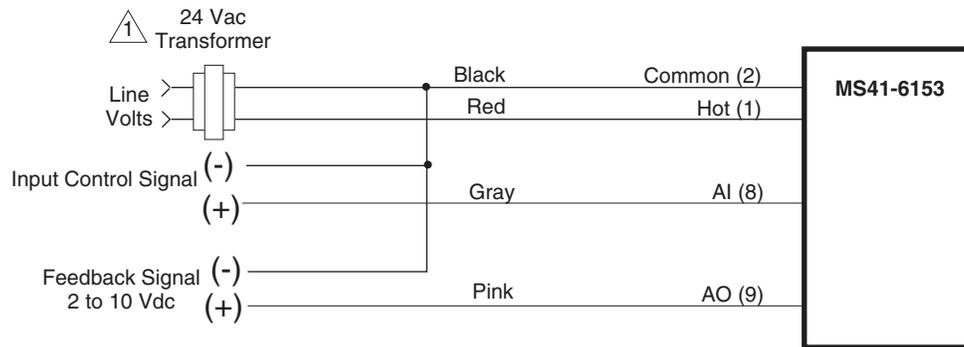


Figure 1 Typical Wiring for Proportional Control 24 Vac, 0-10 Vdc Input Standard.

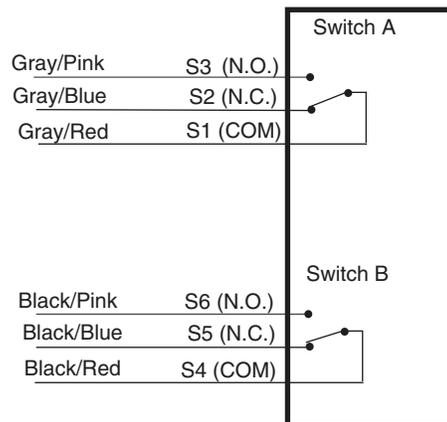


Figure 2 Typical Wiring for Auxiliary Switch Models MS41-6153-502, -505, or -222.