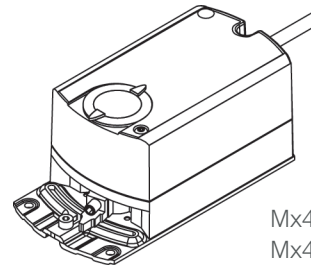


SmartX Mx4x-6xxx, Mx4x-7xxx Series Actuators and Accessories

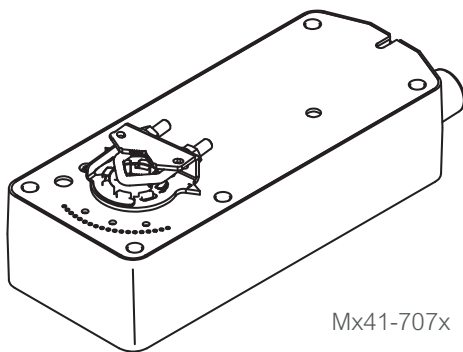
Applications

Direct-coupled SmartX Actuators are designed to accept two-position, floating, or proportional control from a DDC system or from a thermostat, for control of HVAC applications. The actuators are designed to be used in both damper and valve control applications. Typical applications include air handling units, unit ventilators, fan coil units, VAV terminals, control dampers, inlet guide vanes, and linked valve assemblies.

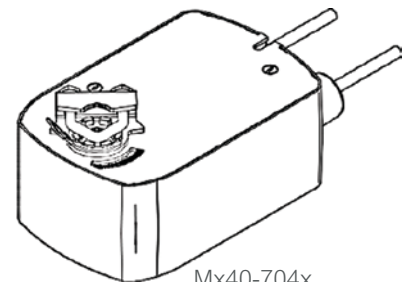
Use the following guide to select actuators for damper applications. Refer to the Applicable Literature table for valve literature.



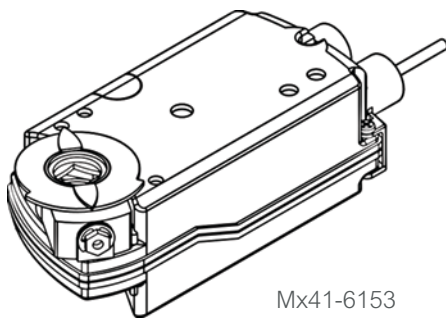
Mx41-6043
Mx41-6083



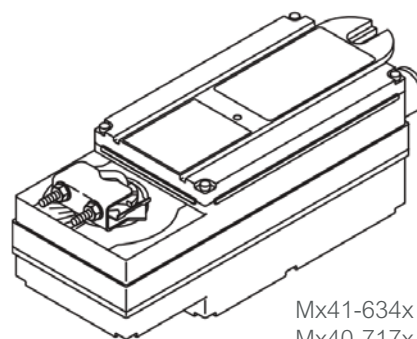
Mx41-707x
Mx41-715x



Mx40-704x



Mx41-6153



Mx41-634x
Mx40-717x

Life Is On

Schneider
Electric

Applicable Literature

| F-Number | Description | Audience Sales Personnel Application Engineers. Other details: | Purpose All documents describe actuator features, specifications, possible applications, and step-by-step mounting instructions. Other details: | |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| F-27211 | MF41-6043/MS41-6043 Series, MF41-6083/ MS41-6083 Series Non-Spring Return Direct Coupled Actuator Installation Instructions | Installers Service Personnel Start-up Technicians | | |
| F-27212 | MF41-6153, MS41-6153 Non-Spring Return Direct Coupled Actuator Installation Instructions | | | |
| F-27213 | MF41-6043/MF41-6083 Series Non-Spring Return Rotary 24 Vac Three-Position Control Electronic Damper Actuators General Instructions | | | |
| F-27214 | MS41-6043/MS41-6083 Series Non-Spring Return Rotary 24 Vac Modulating Control 0...10 Vdc Electronic Damper Actuators General Instructions | | | |
| F-27215 | MF41-6153/MS41-6153 Series Non-Spring Return Rotary Electronic Damper Actuators General Instructions | | | |
| F-26744 | MF41-6343 SmartX Series Non-Spring Return Direct Coupled Actuator General Instructions | | | |
| F-26745 | MS41-634x SmartX Series Non-Spring Return Direct Coupled Actuator General Instructions | | | |
| F-26742 | MA40-717x SmartX Series Spring Return Direct Coupled Actuator General Instructions | | | |
| F-26748 | MS40-717x SmartX Series Spring Return Direct Coupled Actuator General Instructions | | | |
| F-26749 | MF40-7173 SmartX Series Spring Return Direct Coupled Actuator General instructions | | | |
| F-26644 | MF4x-7xx3, MF4x-7xx3-50x Schneider Electric SmartX Series Spring Return Direct Coupled Actuator General Instructions | | | |
| F-26642 | MA4x-7xx3, MA4x-7xx3-50x, MA4x-7xxx, MA4x-7xxx-50x SmartX Series Spring Return Direct Coupled Actuator General Instructions | | | |
| F-26645 | MS4x-7xx3, MS4x-7xx3-50x SmartX Series Spring Return Direct Coupled Actuator General Instructions | | | |
| F-27160 | Mx4x-6xxx-220/-230 and Mx4x-7xxx-220 Actuator/Linkage Assemblies for 2-1/2"...6" Globe Valves General Instructions | | | Also provides checkout instructions. |
| F-26750 | MA4x-xxxx-2xx, MF4x-xxxx-2xx, MS4x-xxxx-2xx Series Actuator/Linkage Assemblies for 1/2"...2" Globe Valves General Instructions | | | Globe Valves |
| F-27087 | Vx-2x13-5xx-9-xx Series, VB-2x13-500-9-xx Series Ball Valve Assemblies and Ball Valve Body/Linkage Assemblies Installation Instructions | Ball valves | | |
| F-26752 | Vx-7000 and Vx-9000 Series, Mx4x-6xxx and Mx4x-7xxx Series, Linked Globe Valve Assemblies and Actuator/Linkage Assemblies with SmartX Actuators Selection Guide | Linked Globe Valve assemblies with SmartX actuators. | | |
| F-27086 | Vx-2x13-5xx-9-xx Series Ball Valve Assemblies and VB-2x13-500-9-xx Series Ball Valve Body/Linkage Assemblies Selection Guide. | Linked Ball Valve assemblies with SmartX actuators. | | |
| F-11080 | Valve Selection Chart Water | Installers Service Personnel Start-up Technicians | Provides charts, equations, and diagrams to assist in the configuration of valve system applications. TOOL-150, valve sizing slide rule may be purchased separately. | |
| F-11366 | Valve Selection Chart Steam (two-way valves only) | | | |
| F-13755 | CA-28 Control Valve Sizing | | | |
| F-26080 | EN-205 Water System Guidelines | | | Describes Schneider Electric approved water treatment practices. |

Actuator Part Numbering System

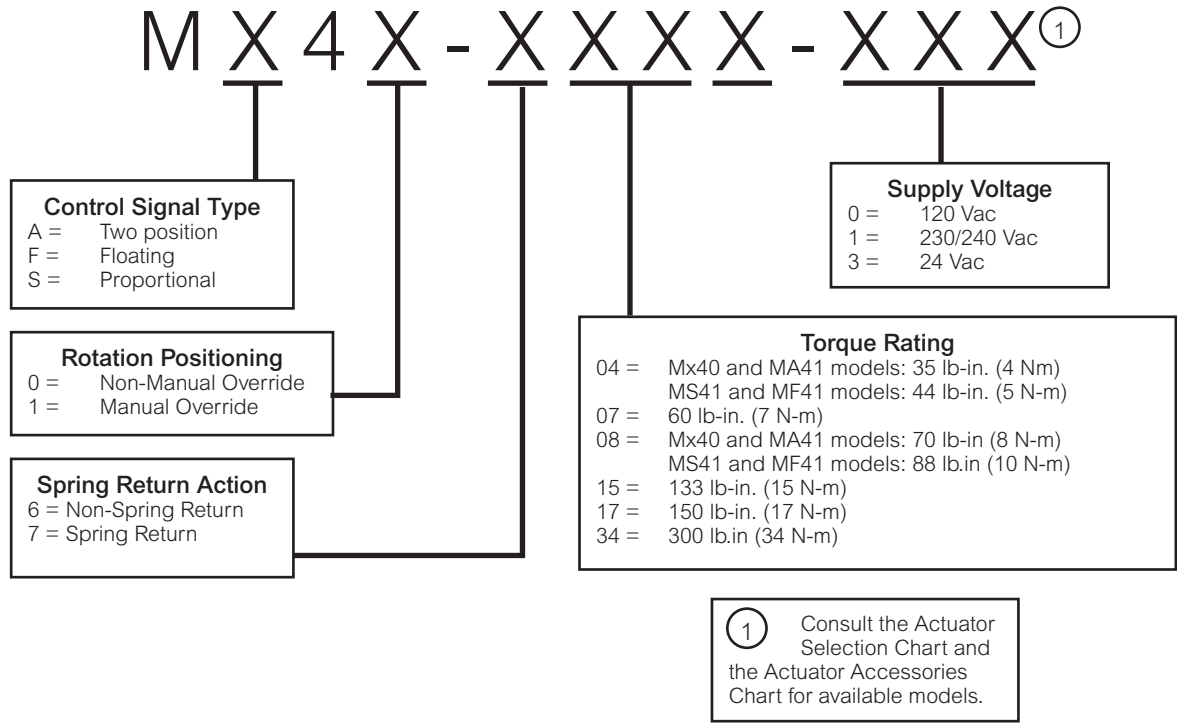


Table 1. Mx40-704x, Mx4x-707x, and Mx4x-715x

| Actuator Type | Part Numbers | Power Input | | | | | | | | SPDT Auxiliary Switches | Approx. Timing (sec.) @ 70 °F (21 °C) with No Load | | Output Torque Rating lb.-in. (N-m) | |
|---------------|----------------------------|-----------------------------|---------|-----|-------|-----|---------|-------|---------|-------------------------|----------------------------------------------------|------|------------------------------------|----------|
| | | Voltage | Running | | | | Holding | | Powered | | Spring Return | Min. | Max. Stall | |
| | | | 50 Hz | | 60 Hz | | DC Amps | 50 Hz | | | | | | 60 Hz |
| | | | VA | W | VA | W | | W | | | | | | W |
| Two-Position | MA40-7043 | 24 Vac ± 20% 22...30 Vdc | 4.4 | 2.9 | 4.4 | 2.9 | 0.11 | 0.8 | 0.8 | - | <50 | <26 | 35 (4) | 150 (17) |
| | MA40-7043-501 | | | | | | | | | 1 | | | | |
| | MA40-7040 | 120 Vac ± 10% | 6.4 | 3.8 | 4.3 | 3.4 | — | 1.6 | 1.2 | - | | | | |
| | MA40-7040-501 | | | | | | | | | 1 ^b | | | | |
| | MA40-7041 | 230 Vac ± 10% | 5.8 | 4.1 | 4.6 | 3.9 | — | 1.5 | 1.2 | - | | | | |
| MA40-7041-501 | 1 ^b | | | | | | | | | | | | | |
| Floating | MF40-7043 | 24 Vac ± 20% 22...30 Vdc | 5.9 | 4.4 | 5.9 | 4.4 | 0.17 | 2.9 | 2.9 | - | | | | |
| | MF40-7043-501 ^c | | | | | | | | | 1 ^b | | | | |
| Proportional | MS40-7043 ^c | 24 Vac ± 20% 22...30 Vdc | 5.6 | 4.2 | 5.6 | 4.2 | 0.15 | 2.4 | 2.4 | - | <130 | <25 | 60 (7) | 250 (28) |
| | MS40-7043-501 ^c | | | | | | | | | 1 ^b | | | | |
| | MS40-7043-MP | 24 Vac 22...30 Vdc | 6.6 | 5.0 | 6.6 | 5.0 | 0.17 | 3.2 | 3.2 | - | | | | |
| | MS40-7043-MP5 | | | | | | | | | 1 ^b | | | | |
| Two-Position | MA41-7073 | 24 Vac ± 20% 22...30 Vdc | 4.8 | 3.2 | 4.8 | 3.2 | 0.13 | 0.8 | 0.8 | - | <80 | <40 | 60 (7) | 250 (28) |
| | MA41-7073-502 ^d | | | | | | | | | 2 | | | | |
| | MA41-7070 ^d | 120 Vac ± 10% | 10.7 | 4.2 | 5.6 | 3.6 | — | 2.0 | 1.2 | - | | | | |
| | MA41-7070-502 ^d | | | | | | | | | 2 ^e | | | | |
| | MA41-7071 ^d | 230 Vac ± 10% | 17.0 | 5.1 | 8.0 | 4.0 | — | 2.7 | 1.4 | - | | | | |
| | MA41-7071-502 ^d | | | | | | | | | 2 ^e | | | | |
| Floating | MF41-7073 ^d | 24 Vac ± 20% 22...30 Vdc | 6.2 | 4.8 | 6.2 | 4.8 | 0.18 | 2.8 | 2.8 | - | <195 | <30 | 60 (7) | 250 (28) |
| | MF41-7073-502 ^d | | | | | | | | | 2 ^e | | | | |
| Proportional | MS41-7073 ^d | 24 Vac ± 20% 22...30 Vdc | 5.8 | 4.6 | 5.8 | 4.6 | 0.17 | 2.3 | 2.3 | - | <195 | <30 | 60 (7) | 250 (28) |
| | MS41-7073-502 ^d | | | | | | | | | 2 ^e | | | | |

| Actuator Type | Part Numbers | Power Input | | | | | | | | SPDT Auxiliary Switches | Approx. Timing (sec.) @ 70 °F (21 °C) with No Load | | Output Torque Rating lb.-in. (N-m) | |
|---------------|---------------------------------------------|-----------------------------|---------|-----|-------|-----|---------|-------|---------|-------------------------|----------------------------------------------------|------|------------------------------------|----------|
| | | Voltage | Running | | | | Holding | | Powered | | Spring Return | Min. | Max. Stall | |
| | | | 50 Hz | | 60 Hz | | DC Amps | 50 Hz | | | | | | 60 Hz |
| | | | VA | W | VA | W | | W | | | | | | W |
| Two-Position | MA40-7153 MA41-7153 ^d | 24 Vac ± 20% 22...30 Vdc | 9.8 | 7.5 | 9.7 | 7.5 | 0.29 | 2.8 | 2.8 | No | <190 | <30 | 133 (15) | 350 (40) |
| | MA40-7153-502 MA41-7153-502 ^d | | | | | | | | | Two ^e | | | | |
| | MA40-7150 MA41-7150 ^d | 120 Vac ± 10% | 11.7 | 8.8 | 10.0 | 8.4 | — | 3.6 | 5.0 | No | | | | |
| | MA40-7150-502 MA41-7150-502 ^d | | | | | | | | | Two ^e | | | | |
| | MA40-7151 MA41-7151 ^d | 230 Vac ± 10% | 15.5 | 9.5 | 10.6 | 8.5 | — | 4.6 | 3.3 | No | | | | |
| | MA40-7151-502 MA41-7151-502 ^d | | | | | | | | | Two ^e | | | | |
| Floating | MF40-7153 MF41-7153 ^d | 24 Vac ± 20% 22...30 Vdc | 9.8 | 7.7 | 9.7 | 7.7 | 0.30 | 3.3 | 3.3 | No | | | | |
| | MF40-7153-502 MF41-7153-502 ^d | | | | | | | | | Two ^e | | | | |
| Proportional | MS40-7153 MS41-7153 ^d | 24 Vac ± 20% 22...30 Vdc | 9.8 | 7.4 | 9.7 | 7.4 | 0.28 | 2.9 | 2.9 | No | | | | |
| | MS40-7153-502 MS41-7153-502 ^d | | | | | | | | | Two ^e | | | | |

a - De-rating required for spring return actuators at low temperatures.
 b - One adjustable from 15...95° rotation (MIN...1 scale).
 c - With plenum-rated cable.
 d - Equipped with manual override.
 e - One adjustable from 25°...85° rotation and one set to operate @ 5° fixed.

Table 2. Mx40-717x Series Spring-Return Actuators

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

| Part Numbers | Power Input @ 50/60 Hz | | | | SPDT Auxiliary Switches | Approx. Timing in Sec. @ 70 °F (21 °C) with No Load | | Output Torque Rating lb.-in. (N-m) | |
|--------------|------------------------|---------------|---------|---------|-------------------------|-----------------------------------------------------|---------------|------------------------------------|------------|
| | Voltage | Running Watts | VA | | | Powered | Spring Return | Min. | Max. Stall |
| | | | Running | Holding | | | | | |
| MA40-7173 | 24 Vac ± 20% | 5.3 | 7.4 | 5.1 | No | 162 | 72 | 150 (17) | 545 (61.8) |
| | 22...30 Vdc | 5.0 | 5.0 | 3.0 | | | | | |
| MA40-7170 | 120 Vac ± 10% | 6.2 | 8.4 | 6.6 | | | | | |
| MA40-7171 | 240 Vac ± 10% | 6.5 | 9.8 | 8.5 | | | | | |
| MF40-7173 | 24 Vac ± 20% | 5.8 | 8.1 | 5.3 | | | | | |
| | 22...30 Vdc | 5.7 | 5.7 | 3.6 | | | | | |
| MS40-7173 | 24 Vac ± 20% | 5.5 | 7.8 | 4.7 | | 147 | 65 | 150 (17) | 545 (61.8) |
| | 22...30 Vdc | 5.0 | 5.6 | 2.5 | | | | | |
| MS40-7170 | 120 Vac ± 10% | 6.4 | 8.5 | 5.2 | | | | | |
| MS40-7171 | 240 Vac ± 10% | 7.2 | 10.8 | 9.0 | | | | | |

Table 3. Non-Spring Return Actuators

| Part Numbers | Power Input @ 50/60 Hz | | | | SPDT Auxiliary Switches ^a | Approximate Timing in Seconds @ 70 °F (21 °C) with No Load | Actuator Output Torque Rating (Min. lb.-in. (N-m)) |
|-----------------------------|------------------------|-------|---------|---------|--------------------------------------|------------------------------------------------------------|----------------------------------------------------|
| | Voltage | Watts | VA | | | | |
| | | | Running | Holding | | | |
| MF41-6043 | 24 Vac +20/-15% | 2.0 | 2.3 | — | No | 90 @ 60 Hz 108 @ 50 Hz | 44 (5) |
| MF41-6043-502 ^b | | 2.0 | 2.3 | — | 2 | | |
| MF41-6043-510 ^b | | 2.0 | 2.3 | — | No | | |
| MS41-6043 ^p | | 3.0 | 3.3 | 1.2 | No | | |
| MS41-6043-502 ^{bc} | | 3.0 | 3.3 | 1.2 | 2 | | |
| MS41-6043-520 ^b | | 3.0 | 3.3 | 1.2 | No | | |
| MS41-6043-522 ^b | | 3.0 | 3.3 | 1.2 | 2 | | |
| MF41-6083 ^p | 24 Vac +20/-15% | 2.0 | 2.3 | — | No | 125 @ 60 Hz 150 @ 50 Hz | 88 (10) ^g |
| MF41-6083-502 ^{bc} | | 2.0 | 2.3 | — | 2 | | |
| MF41-6083-510 ^b | | 2.0 | 2.3 | — | No | | |
| MS41-6083 ^p | | 3.0 | 3.3 | 1.2 | No | | |
| MS41-6083-502 ^{bc} | | 3.0 | 3.3 | 1.2 | No | | |
| MS41-6083-520 ^{be} | | 3.0 | 3.3 | 1.2 | No | | |
| MS41-6083-522 ^{bf} | | 3.0 | 3.3 | 1.2 | 2 | | |
| MF41-6153 | 24 Vac +20/-15% | 3.0 | 3.0 | — | No | 162 | 133 (15) ^h |
| MS41-6153 | | 4.0 | 5.0 | 1.2 | No | | |
| MF41-6343 | 24 Vac ± 20% | 3.9 | 5.7 | 4.1 | No | 148 | 300 (34) |
| | 22...30 Vdc | 4.1 | 4.1 | 3.0 | | | |
| MS41-6343 | 24 Vac ± 20% | 3.6 | 5.6 | 4.0 | No | | |
| | 22...30 Vdc | 3.4 | 3.4 | 2.2 | | | |
| MS41-6340 | 120 Vac ±10% | 4.7 | 7.5 | 6.2 | | | |
| MS41-6341 | 240 Vac ±10% | 5.0 | 9.0 | 8.1 | | | |

b - Equipped with plenum-rated cable.

c - Equipped with two built-in auxiliary switches.

d - Equipped with 1k W feedback potentiometer.

e - Equipped with adjustable start/span.

f - Equipped with adjustable start/span and two auxiliary switches.

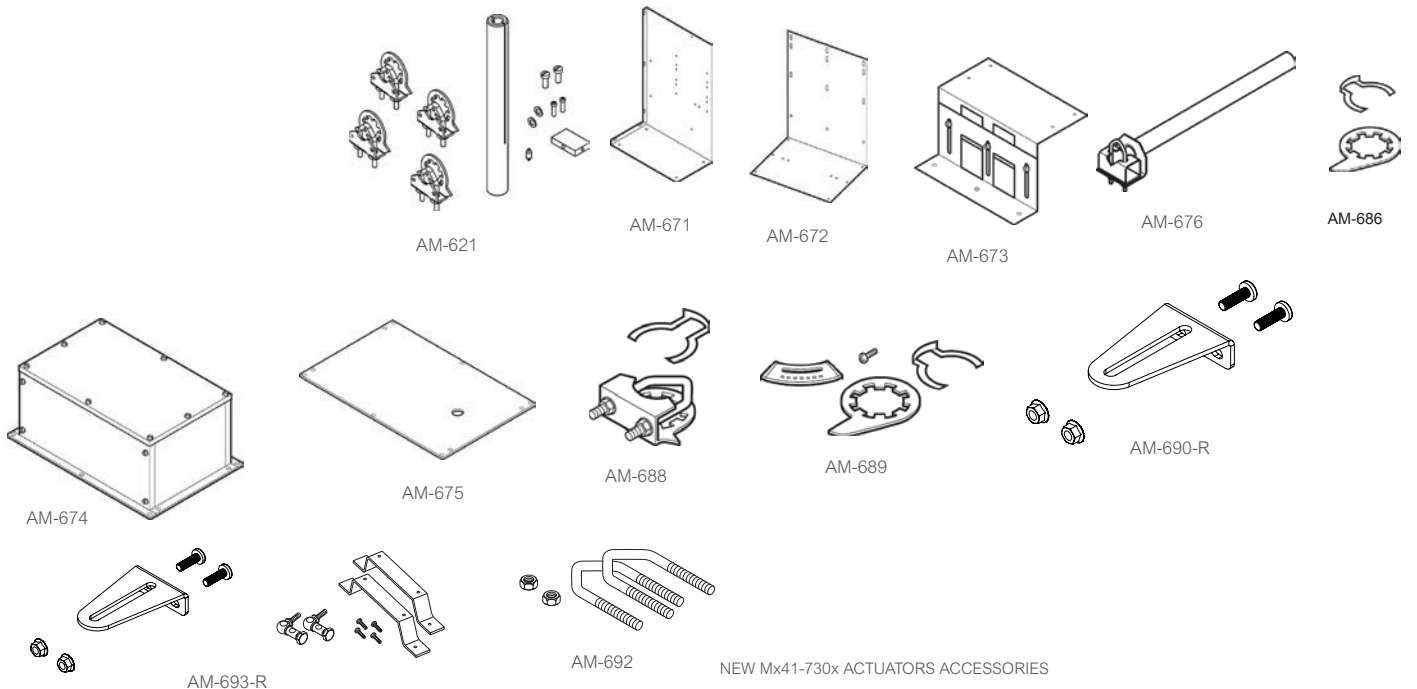
g - Minimum voltage at high temperatures: 24 Vac, +20%, -10% at 90...130 °F ambient.

h - Minimum voltage at high temperatures: 24 Vac, +20%, -5% (MF models) and 24 Vac, +20%, -10% (MS models) at 85...130 °F ambient.

a - Auxiliary switch ratings are as follows:

| | Auxiliary Switch Ratings | |
|-----------|--------------------------------------|--------------------------------------|
| | Mx41-6043, Mx41-6083 | Mx41-6153 |
| AC Rating | 24 Vac, 4 A resistive, 2 A inductive | 24 Vac, 6 A resistive, 2 A inductive |
| DC Rating | 12...30 Vdc, DC 2 A | |

Actuator Accessories



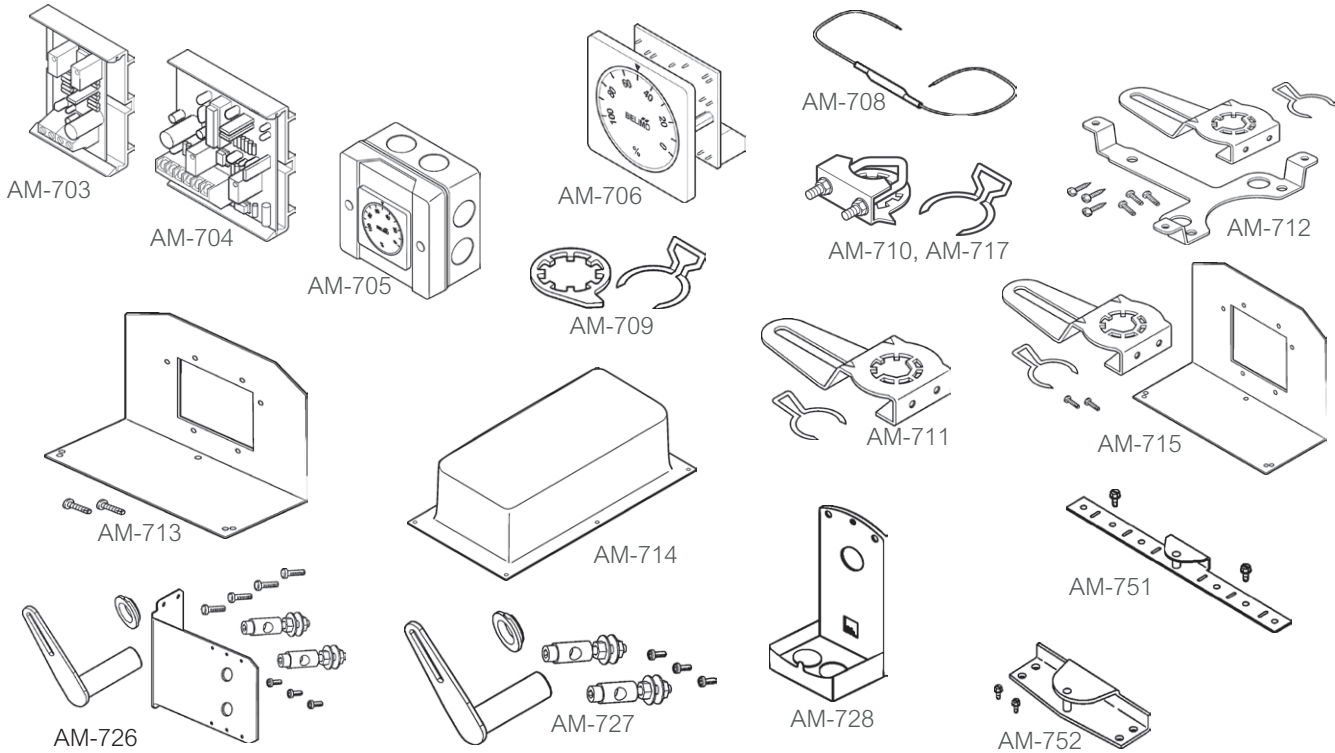
NEW Mx41-730x ACTUATORS ACCESSORIES

- AM-708 500 ohm resistor for connection to 4 to 20 mA input signals
- AM-801 Mx41-730x-xxx Actuator Crank Arm Kit
- AM-802 Mx41-730x-xxx Actuator Crank Arm Kit with Actuator Mounting Bracket and Two Ball Joints
- AM-803 9-3/4" damper Shaft Extension for 5/16" to 1" Diameter Round Shafts
- AM-804 Jackshaft Linkage (requires AM-805 Support Plate for Mx41-73xx Actuators)
- AM-805 Support Plate for Mx41-73xx Actuators
- BEL-ZTH US Handheld Interface Module for Field Programming of the MS41-7303-xxx Models

Actuator Accessories Table

| Part Numbers | Description | Spring Return Actuators (Series [x] or individuals) | | | | | | | | Non-Spring Return Actuators (Series [x] or individuals) | | | | | | | | Installation Instruction | | | | | |
|------------------------|-----------------------------|--------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------------------|-----------|-----------|-----------|-----------|--|
| | | MA40-704x | MF40-7043 | MS40-7043 | MA4x-707x | MF4x-7073 | MS4x-7073 | MA4x-715x | MF4x-7153 | MS4x-7153 | MA40-717x | MF40-7173 | MS40-717x | MF41-6043 | MS41-6043 | MF41-6083 | MS41-6083 | | MF41-6153 | MS41-6153 | MF41-6343 | MS41-634x | |
| AM-621 | Round Shaft Extension | | | | | | | X | X | X | X | X | | | | | | X | X | X | X | - | |
| AM-671 ^{abcd} | Mounting Bracket | X | X | X | X | X | X | X | X | | | | | | | | | | | | | F-25096 | |
| AM-672 ^{abcd} | | X | X | X | X | X | X | X | | | | | | | | | | | | | | | |
| AM-673 ^c | | X | X | X | X | X | X | X | | | | | | | | | | | | | | | |
| AM-674 | Weather Shield & Base | X | X | X | X | X | X | X | X | X | X | | | | | | | | | X | X | F-25097 | |
| AM-675 | | X | X | X | X | X | X | X | | | | | | | | | | | | | | | |
| AM-676 | Shaft Extension | X | X | X | X | X | X | X | X | X | X | | | | | | | | | X | X | F-25098 | |
| AM-686 | Position Indicator | | | | X | X | X | X | | | | | | | | | | | | | | | |
| AM-687 ^e | V-clamp | | | | X | X | X | X | | | | | | | | | | | | | | | |
| AM-688 | Replacement Universal Clamp | | | | X | X | X | X | | | | | | | | | | | | | | | |
| AM-689 | Rotation Limiter | | | | X | X | X | X | | | | | | | | | | | | | | | |
| AM-690-R ⁱ | Crank Arm Kit | | | | X | X | X | X | | | | | | | | | | | | | | | |
| AM-691 | | | | | X | X | X | X | | | | | | | | | | | | | | | |
| AM-692 ^f | V-bolt | | | | X | X | X | X | | | | | | | | | | | | | | | |
| AM-693-R ^{gh} | Crank Arm Kit | | | | X | X | X | X | | | | | | | | | | | | | | | |

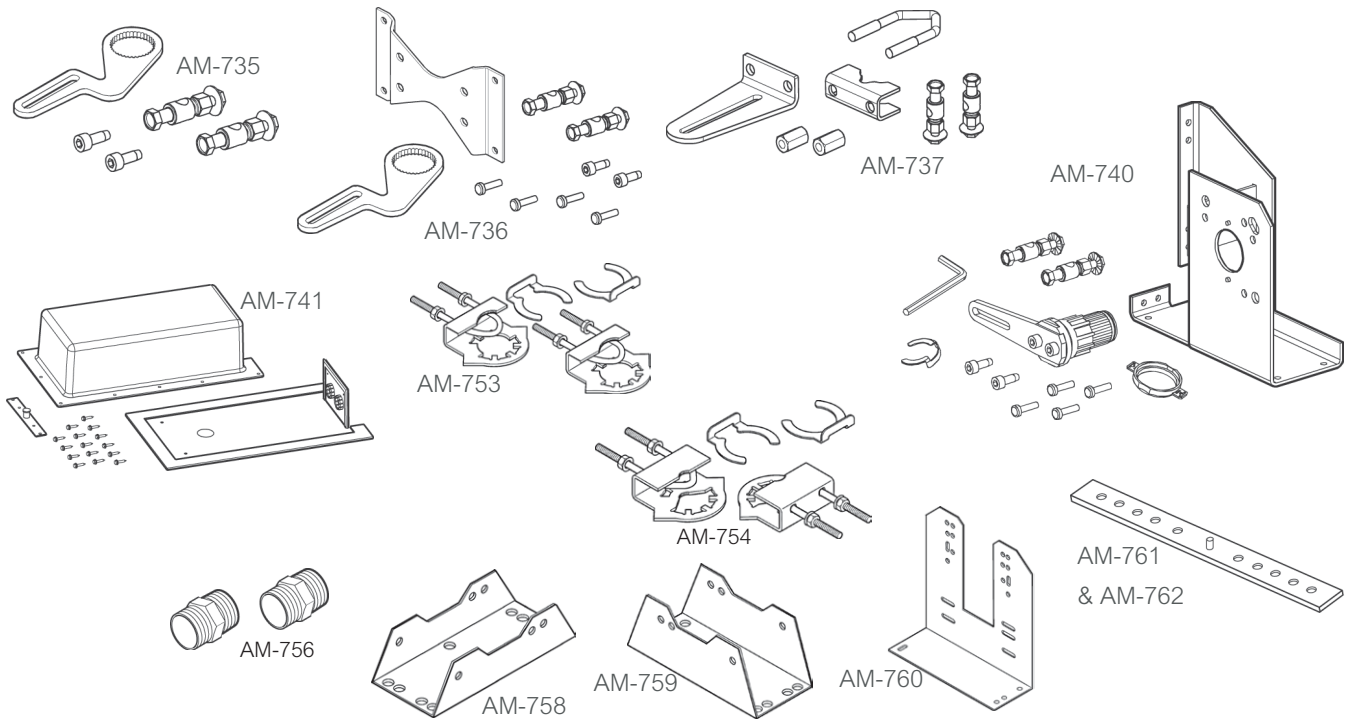
a - AM-693 crank arm kit required.
 b - Cannot be used with Mx41-634x or Mx40-717x series actuators.
 c - Drill appropriate mounting holes where needed.
 d - The large "C"-shaped clamps included in AM-693 crank arm kit are required for mounting the actuator. Drill appropriate mounting holes where needed.
 e - For shafts to 1.05" diameter or 5/8" square.
 f - For shafts to 3/4" and 1.05" diameter (with AM-690 and AM-691, respectively).
 g - Use the self-tapping screws and flat washers provided in kit to mount actuator.
 h - AM-692 V-bolt kit required. The AM-693-R damper linkage kit is used in conjunction with the AM-687 or AM-688 universal clamps to provide a mechanical linkage between the damper actuator and the damper shaft when a direct coupling is not possible.
 i - Used in conjunction with the AM-687 or AM-688 universal clamps for crankarm functionality in non-direct mounting applications.



Actuator Accessories Table

| Part Numbers | Description | Spring Return Actuators (Series [x] or individuals) | | | | | | | | | | | Non-Spring Return Actuators (Series [x] or individuals) | | | | | | Installation Instruction Document | | | |
|---------------------|-------------------------------------|--------------------------------------------------------|-----------|-----------|-----------|------------|------------|-----------|------------|------------|-----------|-----------|------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------------------------------------|-----------|-----------|-----------|
| | | MA40-704x | MF40-7043 | MS40-7043 | MA4x-707x | MF4x-7073x | MS4x-7073x | MA4x-715x | MF4x-7153x | MS4x-7153x | MA40-717x | MF40-7173 | MS40-7173 | MF41-6043 | MS41-6043 | MF41-6083 | MS41-6083 | MF41-6153 | | MS41-6153 | MF41-6343 | MS41-634x |
| AM-703 | Span Adjustment | | | X | | X | | | X | | | X | | | | | X | X | | X | | F-26895 |
| AM-704 | Modulation Interface | | | X | | X | | | X | | | X | | | | | X | X | | X | | F-26895 |
| AM-705 | Positioner | | | X | | X | | | X | | | X | | X | | | X | X | | X | | F-26895 |
| AM-706 | | | | X | | X | | | X | | | X | | X | | | X | X | | X | | F-26895 |
| AM-708 | 500 Ω Resistor | | | X | | X | | | X | | | | | X | | | X | X | | | | F-26895 |
| AM-709 | Position Indicator & Stroke Limiter | X | X | | | | | | | | | | | | | | | | | | | F-26896 |
| AM-710 ^a | V-clamp | X | X | | | | | | | | | | | | | | | | | | | F-26896 |
| AM-711 | Crank Arm Adaptor Kit | X | X | | | | | | | | | | | | | | | | | | | F-26896 |
| AM-712 | | | X | X | | | | | | | | | | | | | | | | | | |
| AM-713 | Bracket | X | X | | | | | | | | | | | | | | | | | | | F-26896 |
| AM-714 | Weather Shield | X | X | X | X | X | X | | | | | | | | | | | | | | | F-25097 |
| AM-715 | Crank Arm Adaptor Kit | X | X | | | | | | | | | | | | | | | | | | | F-26896 |
| AM-717 | Replacement Universal Clamp | X | X | | | | | | | | | | | | | | | | | | | F-26896 |
| AM-726 | Crank Arm Adaptor | | | | | | | | | | | | X | X | X | X | | | | | | F-26802 |
| AM-727 | | | | | | | | | | | | | X | X | X | X | | | | | | |
| AM-728 ^b | Conduit Adaptor | | | | | | | | | | | | X | X | X | X | | | | | | F-26898 |
| AM-751 | Anti-rotation Bracket | | | | | | | | | X | X | | | | | | | | | X | X | F-26898 |
| AM-752 | | | | | | | | | | | X | X | | | | | | | | X | X | F-26898 |

a - For shafts to 3/4" diameter round or up to 1/2" square.
 b - Cannot be used when creating a linked valve/actuator assembly.



Actuator Accessories Table

| Part Numbers | Description | Spring Return Actuators (Series [x] or individuals) | | | | | | | | | | Non-Spring Return Actuators (Series [x] or individuals) | | | | | | Installation Instruction Document | | | | |
|---------------------|----------------------------------|--------------------------------------------------------|-----------|-----------|-----------|------------|------------|-----------|------------|------------|-----------|------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------------------------------------|-----------|-----------|-----------|-----------|
| | | MA40-704x | MF40-7043 | MS40-7043 | MA4x-707x | MF4x-7073x | MS4x-7073x | MA4x-715x | MF4x-7153x | MS4x-7153x | MA40-717x | MF40-7173 | MS40-7173 | MF41-6043 | MS41-6043 | MF41-6083 | MS41-6083 | | MF41-6153 | MS41-6153 | MF41-6343 | MS41-634x |
| AM-735 | Crank Arm Kit | | | | | | | | | | | | | | | | X | X | | | F-27246 | |
| AM-736 | Crank Arm Kit with Bracket | | | | | | | | | | | | | | | | | X | X | | | F-27247 |
| AM-737 | Universal Crank Arm ^a | | | | | | | | | | | | | | | | | X | X | | | F-27248 |
| AM-740 | Replacement Kit | | | | | | | | | | | | | | | | | X | X | | | F-27249 |
| AM-741 | Weather Shield | | | | | | | | | | | X | X | X | X | X | | | | | | F-27250 |
| AM-753 ^b | Mounting Clamp | | | | | | | | | X | X | | | | | | | | | X | X | F-26898 |
| AM-754 ^c | | | | | | | | | | X | X | | | | | | | | | X | X | |
| AM-756 | Metric Conduit Adaptor | X | X | X | X | X | X | X | X | X | X | | | | | | | | | X | X | F-26899 |
| AM-758 | Short "U" Mounting Bracket | | | | X | X | X | X | | | | | | | | | | | | | | F-25096 |
| AM-759 | Tall "U" Mounting Bracket | | | | X | X | X | X | | | | | | | | | | | | | | |
| AM-760 | Slotted "L" Mounting Bracket | | | | X | X | X | X | | | | | | | | | | | | | | |
| AM-761 | 7-inch Anti-Rotation Bracket | X | X | | | | | | | | | | | | | | | | | | | F-26986 |
| AM-762 | 9-inch Anti-Rotation Bracket | X | X | X | X | X | X | X | X | X | | | | | | | | | | X | X | F-25098 |
| TF-711-02 | Sealtight Conduit Connector | | | | | | | | X | X | | | | | | | | | | X | X | — |
| TF-713-02 | | | | | | | | | | X | X | | | | | | | | | X | X | — |
| TF-5521 | Pipe Plug | | | | | | | | X | X | | | | | | | | | | X | X | — |

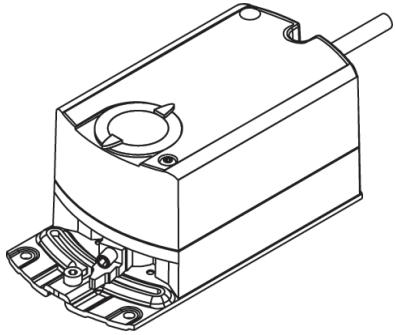
a - For Honeywell Floor Mount Mod Motor.
 b - For shafts 3/4" round and 5/8" square.
 c - For shafts 3/8"...1/2" round and square.
 d - Only used on Mx41-707x-xxx, Mx41-715x-xxx.

MF41-6043 and MS41-6043 Actuators

For non-spring return applications requiring floating or proportional modulation control of dampers and valves in HVAC systems.

Features:

- Direct mount to round, square, or hexagonal damper shaft
- Rated at 44 lb-in. (5 N-m) torque, minimum
- Does not require any limit switches
- Manual override allows positioning for installation and manual operation
- MF41-6043 provides floating point control (3-position)
- MS41-6043 provides proportional control compatible with 0...10 Vdc
- 5-year warranty



Actuator Specifications

| | |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inputs | |
| Control Signal | |
| MF41-6043 | Floating three-position control, 24 Vac. |
| MS41-6043 | Proportional, 0...10 Vdc; input resistance 100 kW. |
| Power Requirements (see table) | All 24 Vac circuits are Class 2. |
| Connections | 3 ft. (0.9 m) long, 18 AWG leads, plenum-rated. |
| Motor Type | Synchronous |
| Outputs | |
| Electrical | |
| AC Rating | 24 Vac, 4 A resistive, 2 A inductive |
| DC Rating | 12...30 Vdc, DC 2 A |
| Timing | 90 sec. at 60 Hz, 108 sec. at 50 Hz |
| Mechanical | |
| Output torque rating | 44 lb-in. (5 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. Set or 5° preload at the factory |
| Position indicator | Adjustable pointer is provided for position indication. See the Note in "Switch Range." |
| Output shaft setscrew tightening torque | 55...60 lb-in. (6.3...6.8 N-m) |

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

| | |
|------------------------|--------------------------------------------------------------------------------|
| Environment | |
| Temperature Limits | |
| Shipping and storage | -40...158 °F (-40...70 °C) ambient |
| Operating | -25...130 °F (-32...55 °C) ambient |
| Humidity | 5...95% RH, non-condensing |
| Enclosure Rating | NEMA Type 2 |
| Agency Listings | |
| UL | UL-873, Underwriters Laboratories. |
| European Community | EMC Directive (89/336/EEC). Emissions (EN50081-1). Immunity (EN50081-2). |
| cUL | Canadian Standards C22.2 No. 24-93. |

| | |
|--------------------|----------------------------|
| Accessories | |
| AM-726 | Rotary-to-Linear Bracket |
| AM-727 | Rotary-to-Linear Crank Arm |
| AM-728 | Conduit Adapter |
| AM-741 | Weather Shield Kit |

| Part Numbers | Power Input @ 50/60 Hz | | | |
|--------------|------------------------|------------|------------|-------|
| | Voltage | Running VA | Holding VA | Watts |
| MF41-6043 | 24 Vac +20/-15% | 2.3 | — | 2.0 |
| MS41-6043 | 24 Vac +20/-15% | 3.3 | 1.2 | 3.0 |

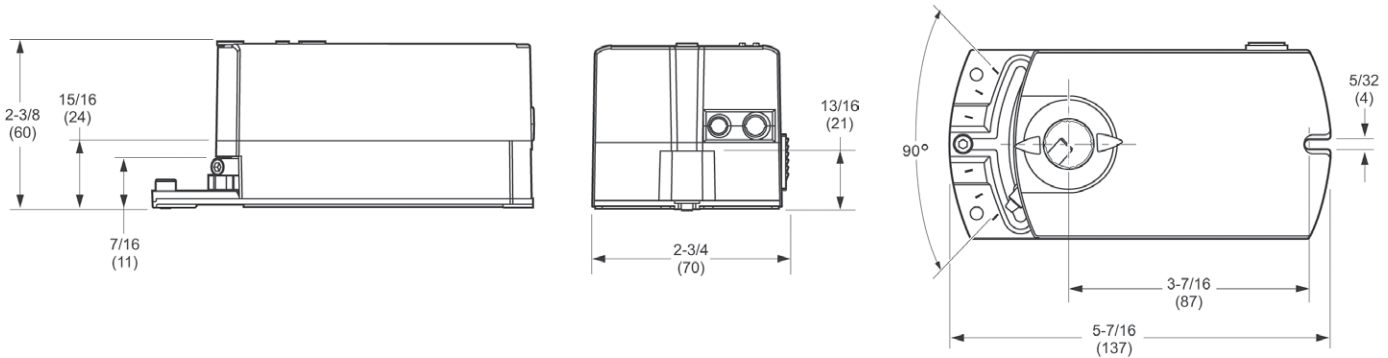


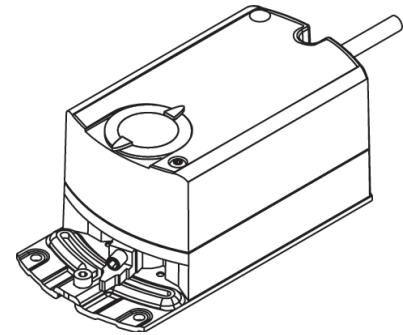
Figure-1 MF41-6043 and MS41-6043 Mounting Dimensions (mm)

MF41-6083 and MS41-6083 Actuators

For non-spring return applications requiring floating or proportional modulation control of dampers and valves in HVAC systems.

Features:

- Direct mount to round, square, or hexagonal damper shaft
- Rated at 88 lb-in. (10 N-m) torque, minimum
- Does not require any limit switches
- Manual override allows positioning for installation and manual operation
- MF41-6083 provides floating point control (3-position)
- MS41-6083 provides proportional control compatible with 0...10 Vdc
- Models available with: independently adjustable dual auxiliary switches; adjustable start point (offset) and span
- 5-year warranty



Actuator Specifications

| | |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Inputs | |
| Control Signal | Floating three-position control, 24 Vac |
| MF41-6083 | Floating three-position control, 24 Vac |
| MS41-6083 | Proportional, 0...10 Vdc; input resistance 100 kW. |
| Control signal adjustment available with MS41-6083-520 and MS41-6083-522 | |
| Start point (offset) | Between 0 and 5 Vdc (factory setting = 0 Vdc) |
| Span | 2...30 Vdc |
| Power Requirements (see table) | All 24 Vac circuits are Class 2 |
| Connections | 3 ft. (0.9 m) long, 18 AWG leads, plenum-rated. |
| Motor Type | Synchronous |
| Outputs | |
| Electrical | |
| Position output signal: Feedback potentiometer available with MF41-6083-510 | 0...1000W < 10 mA |
| Output voltage | 0...10 Vdc |
| Maximum output current | 1 mA |
| Dual auxiliary switches available with MF41-6083-502, MS41-6083-502, MF41-6083-522, and MS41-6083-522 | |
| AC Rating | 24 Vac, 4 A resistive, 2 A inductive |
| DC Rating | 12...30 Vdc, DC 2 A |
| Switching hysteresis | 2° |
| Switch Range | |
| Switch A | 0...90° range in 5° intervals |
| Recommended range usage | 0...45° |
| Factory setting | 5° |
| Switch B | 0...90° range in 5° intervals |
| Recommended range usage | 45...90° |
| Factory setting | 85° |
| Timing | 125 sec. at 60 Hz, 150 sec. at 50 Hz |

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mechanical | |
| Output torque rating | 88 lb-in. (10 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. Set for 5° preload at the factory |
| Position indicator | Adjustable pointer is provided for position indication. See the Note in "Switch Range." |
| Output shaft setscrew tightening torque | 55...60 lb-in. (6.3...6.8 N-m) |
| Nominal Damper Area | Actuator sizing should be done in accordance with damper manufacturer's specifications |
| Environment | |
| Temperature Limits | |
| Shipping and storage | -40...158 °F (-40...70 °C) ambient |
| Operating | -25...130 °F (-32...55 °C) ambient |
| Humidity | 5...95% RH, non-condensing |
| Enclosure Rating | NEMA Type 2 |
| Agency Listings | UL-873, Underwriters Laboratories |
| UL | EMC Directive (89/336/EEC) |
| European Community | Emissions (EN50081-1) Immunity (EN50081-2) |
| cUL | Canadian Standards C22.2 No. 24-93 |
| Accessories | |
| AM-726 | Rotary-to-Linear Bracket |
| AM-727 | Rotary-to-Linear Crank Arm |
| AM-728 | Conduit Adapter |
| AM-741 | Weather Shield Kit |

| Part Numbers | Power Input @ 50/60 Hz | | | |
|--------------|------------------------|------------|------------|-------|
| | Voltage | Running VA | Holding VA | Watts |
| MF41-6083 | 24 Vac +20/-15% | 2.3 | — | 2.0 |
| MS41-6083 | 24 Vac +20/-15% | 3.3 | 1.2 | 3.0 |

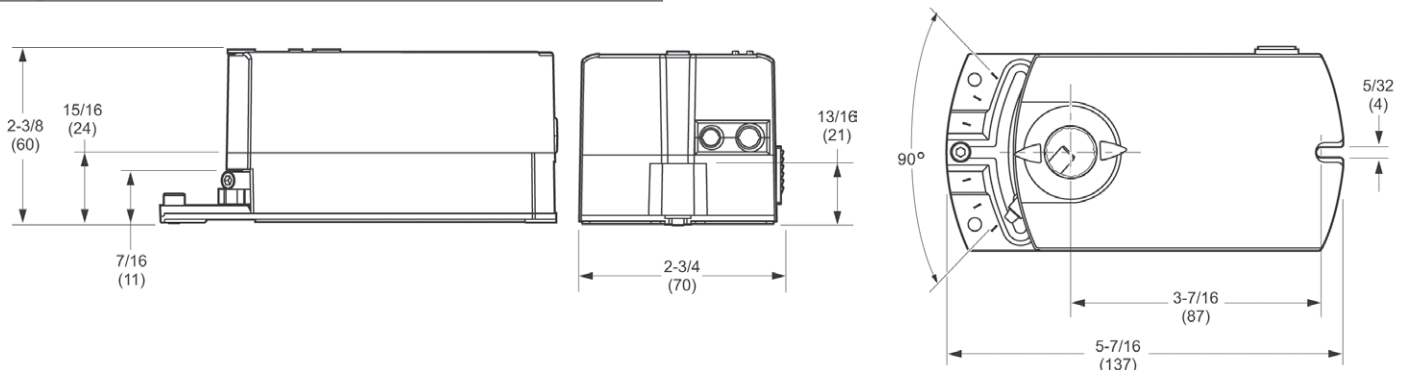


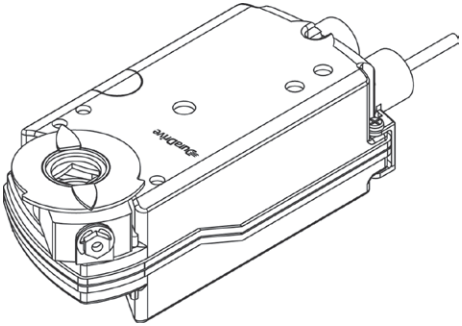
Figure 2. MF41-6083 and MS41-6083 Mounting Dimensions (mm)

MF41-6153 and MS41-6153 Actuators

For non-spring return applications requiring floating or proportional modulation control of dampers and valves in HVAC systems.

Features:

- Direct mount to round or square damper shaft
- 133 lb-in (15 N-m) torque rating
- Does not require any limit switches
- Manual override to allow positioning for installation and manual operation
- MF41-6153 provides floating point control (drive open-hold-drive closed)
- MS41-6153 provides proportional control compatible with 0...10 Vdc or 0...20 mA dc
- 5-year warranty



Actuator Specifications

| | |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inputs | |
| Control Signal | Three position |
| MF41-6153 | Proportional, 0...10 Vdc, input resistance 100 kW |
| MS41-6153 | |
| Power Requirements (see table) | All 24 Vac circuits are Class 2 |
| Connections | 3 ft. (91 cm) long plenum-rated cables, 18 AWG color coded leads |
| Motor Type | Synchronous |
| Outputs | |
| Electrical | |
| Timing | Approx. 125 sec. at 60 Hz; 150 sec. at 50 Hz |
| Dual Auxiliary Switch Ratings | |
| AC Rating | 24 Vac, AC 6A resistive, AC 2A inductive |
| DC Rating | 12...30 Vdc, DC 2A |
| Switch Ranges | |
| Switch A | 0°...90° with 5° intervals |
| Recommended Range Usage | 0°...45° |
| Factory Setting 5° | |
| Switch B | 0°...90° with 5° intervals. |
| Recommended Range Usage | 45°...90° |
| Factory Setting | 85° |
| Switch Hysteresis 2° | |
| Mechanical | |
| Output torque rating | 133 lb-in (15 N-m) |
| Stroke | Angle of rotation is limited to a nominal 90° (maximum 95°), field adjustable to limit travel on either end of stroke. Set for 5° preload at the factory |
| Position indicator | Adjustable pointer is provided for position indication |
| Damper Shaft Clamp | Direct coupled using a through hole output hub |
| Shaft Sizes | 1/4" to 3/4" (6.4...20.5 mm) diameter round 1/4"...1/2" (6.4...13 mm) square |
| Minimum Shaft Length | 3/4" (20 mm) |
| Nominal Damper Area | Actuator sizing should be done in accordance with damper manufacturer's specifications |
| Weight | 2.2 lb (1 kg) |
| Environmental | |
| Temperature Limits | |
| Shipping and storage | -40...158 °F (-40...70 °C) ambient |
| Operating | -25...130 °F (32...55 °C) |
| Humidity | 5...95% RH, non-condensing |
| Locations | NEMA 1 (IEC IP54) |

| | |
|-----------------------------------|-------------------------------------------------------------------------------|
| Agency Listings (Actuator) | |
| UL | UL-873, Underwriters Laboratories |
| European Community | EMC Directive (89/336/EEC) Immunity (EN61000-6-2) Emission (EN 50081-1) |
| cUL | Canadian Standards C22.2 No. 24-93 |
| Accessories | |
| AM-735 | Crank Arm Kit |
| AM-736 | Crank Arm Kit with Bracket |
| AM-737 | Universal Crank Arm for Honeywell Floor Mount Mod Motor |
| AM-740 | Replacement Kit |
| AM-741 | Weather Shield Kit |

| Part Numbers | Power Input @ 50/60 Hz | | | |
|--------------|------------------------|------------|------------|-------|
| | Voltage | Running VA | Holding VA | Watts |
| MF41-6153 | 24 Vac +20/-15% | 3.0 | — | 3.0 |
| MS41-6153 | 24 Vac +20/-15% | 5.0 | 1.2 | 4.0 |

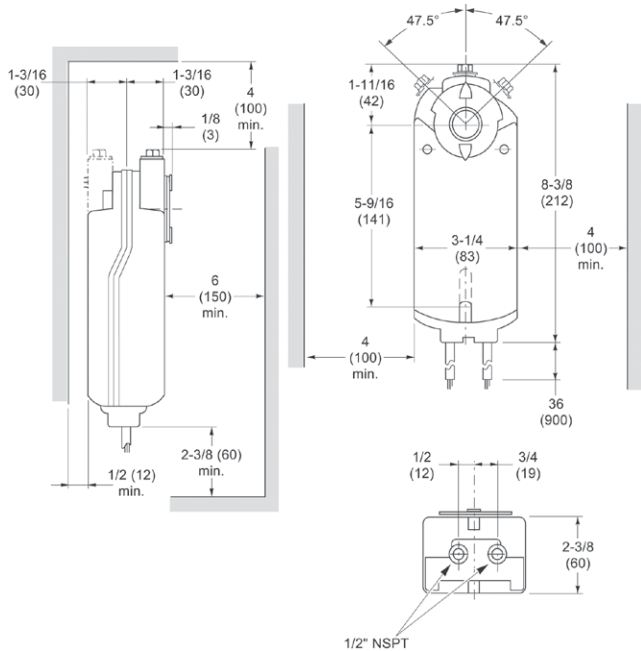


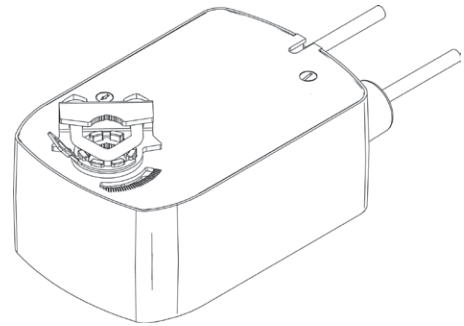
Figure 3. MF41-6153 and MS41-6153 Mounting Dimensions (mm)

MA40-704x, MF40-7043, and MS40-7043 Series Actuators

For spring return applications requiring floating, two-position, or proportional modulation control of dampers and valves in HVAC systems.

Features:

- Direct mount to round or square damper shaft
- 35 lb-in (4 N-m) torque rating
- Overload protection throughout rotation
- Optional built-in auxiliary switches
- True mechanical clockwise or counterclockwise spring return operation for reliable, 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 for NEMA 2/IP54 rating
- 5-year warranty



Actuator Specifications

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Inputs | |
| Control Signal | |
| MA40-704x and MA40-704x-501 | On-off. SPST control contacts or Triacs (500 mA rated) |
| MF40-7043 and MF40-7043-501 | Floating point control, 24 Vac |
| MS40-7043 and MS40-7043-501 | Spring return, proportional, 2...10 Vdc or 4 to 20 mA dc with a 500 W resistor |
| Power Requirements (see table) | |
| | All 24 Vac circuits are Class 2 |
| | All circuits 30 Vac and above are Class 1 |
| Connections | |
| MA40-704x and MA40-704x-501 | 3 ft. (91 cm) long, appliance cables, 1/2 in. conduit connector. For M20 Metric conduit, use AM-756 adaptor. |
| MF40-7043 and MF40-7043-501, MS40-7043 and MS40-7043-501 | 3 ft. (91 cm) long, plenum-rated cables, 1/2 in. conduit connector. For M20 Metric conduit, use AM-756 adaptor. |
| Motor Type | |
| Brush | MA40-704x |
| Brushless DC | MF40-7043, MS40-7043 |
| Outputs | |
| Electrical | |
| Control Mode | Switch provided for selection of direct acting or reverse acting control mode on proportional models |
| Timing | |
| | Approximate timing for MA40-704x series is 50 seconds. Approximate timing for MF40-7043 series or M40-7043 series is 130 seconds |
| One auxiliary switch available with Mx40-7043-501 and MS40-7043-MP5, SPDT 6A resistive @ 24 Vac, adjustable 0...95° (0...1 scale). Switch meets VDE requirements for 6 (1.5)A, 24 Vac. | |
| One auxiliary switch available with MA40-7040-501 or MA40-7041-501, SPDT 6A resistive @ 250 Vac, adjustable 15...95° (MIN...1 scale). Switch meets VDE requirements for 6 (1.5)A, 250 Vac. | |
| Position Feedback Voltage "AO" | 2...10 Vdc (maximum 0.5 mA) output signal for position feedback or operation of up to four slave actuators. |
| Mechanical | |
| Output Torque Rating | 35 lb-in. (4 N-m) minimum, 150 lb-in. (17 N-m) maximum |

| | |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stroke | Rotation is limited to 95° ± 5° maximum, adjustable from 40...95° with a mechanical stop |
| Position Indicator | Visual indicator, 0...1 (0 is the 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 |
| Damper Shaft Size | Up to 5/8" in diameter and 1/2" square. With AM-710, up to 3/4" in diameter and 1/2" square |
| Nominal Damper Area | Actuator sizing should be done in accordance with damper manufacturer's specifications |
| Environment | |
| Temperature Limits | |
| Shipping and storage | -40...160 °F (-40...71 °C) ambient. |
| Operating | -22...140 °F (-30...60 °C) |
| Humidity | 5...95% RH, non-condensing |
| Enclosure Rating | NEMA 2 (IEC IP54) |
| Agency Listings | |
| UL | UL 873, Underwriters Laboratories (File #9429 Category Temperature-Indicating and Regulating Equipment) |
| cUL | Canadian Standards C22.2 No. 24 |
| European Community | EMC Directive (89/336/EEC) Low Voltage Directive (72/23/EEC) |
| Australia | This product meets requirements to bear the RSM Mark according to the terms specified by the Communications Authority under the Radiocommunications Act 1992 |

| Part Numbers | Voltage 50/60 Hz | Running (Hz) | | | | | Holding (Hz) | |
|-----------------------------|--------------------------|--------------|-----|-----|-----|---------|--------------|-----|
| | | 50 | | 60 | | DC Amps | 50 | 60 |
| | | VA | W | VA | W | | W | W |
| MA40-7043 and MA40-7043-501 | 24 Vac ± 20% 22...30 Vdc | 4.4 | 2.9 | 4.4 | 2.9 | 0.11 | 0.8 | 0.8 |
| MS40-7043 and MS40-7043-501 | 24 Vac ± 20% 22...30 Vdc | 5.6 | 4.2 | 5.6 | 4.2 | 0.15 | 2.4 | 2.4 |
| MS40-7043-MP MS40-7043-MP5 | 24 Vac ± 20% 22...30 Vdc | 6.6 | 5.0 | 6.6 | 5.0 | 0.17 | 3.2 | 3.2 |
| MF40-7043 and MF40-7043-501 | 24 Vac ± 20% 22...30 Vdc | 5.9 | 4.4 | 5.9 | 4.4 | 0.17 | 2.9 | 2.9 |
| MA40-7040 and MA40-7040-501 | 120 Vac ± 10% | 6.4 | 3.8 | 4.3 | 3.4 | — | 1.6 | 1.2 |
| MA40-7041 and MA40-7041-501 | 230 Vac ± 10% | 5.8 | 4.1 | 4.6 | 3.9 | — | 1.5 | 1.2 |

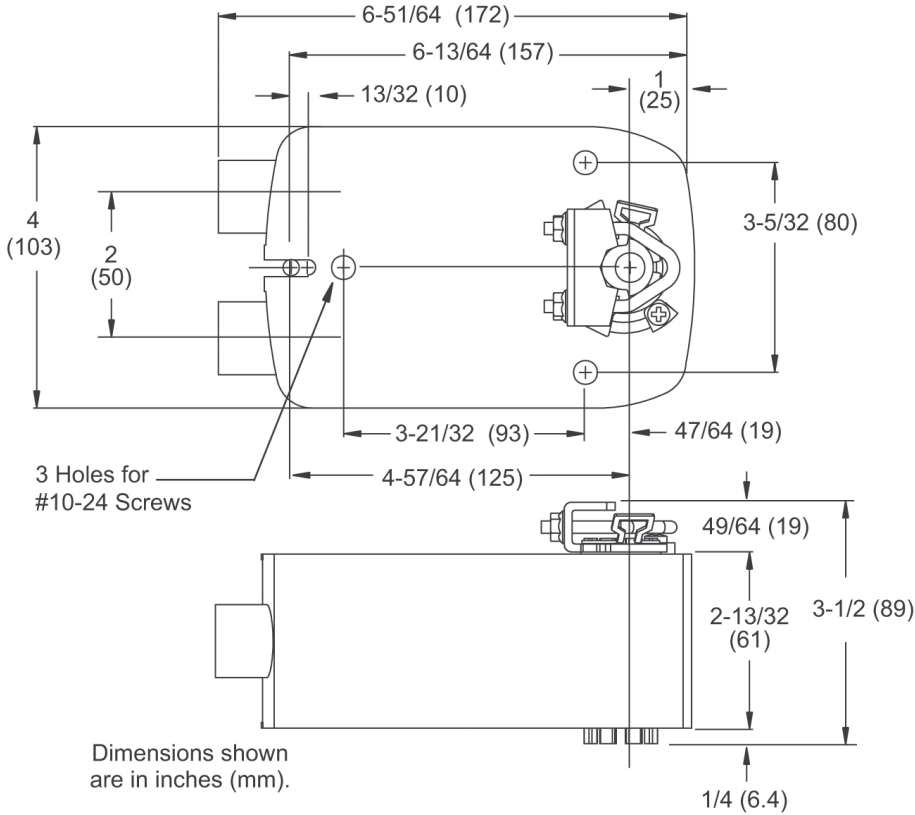


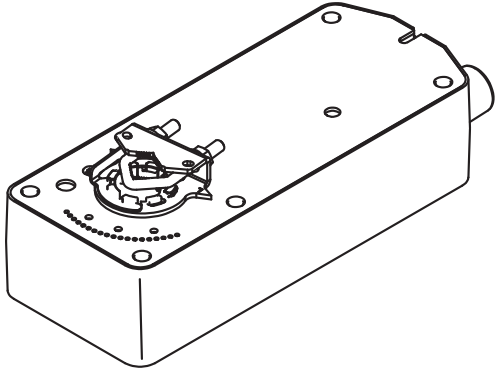
Figure 4. Mx40-704x Series Mounting Dimensions (mm)

MA41-707X, MF41-7073, and MS41-7073 Series Actuators

For spring return applications requiring floating, two-position, or proportional modulation control of dampers and valves in HVAC systems.

Features:

- Direct mount to round or square damper shaft
- 60 lb-in (7 N-m) torque rating
- Overload protection throughout rotation
- Optional built-in auxiliary switches
- Provides true mechanical clockwise or counterclockwise spring return operation for reliable positive close-off in airtight applications
- Visual position indication
- Direct acting or reverse acting control mode available on proportional models
- Rotation limiting available
- Rugged die-cast housing for NEMA 2/IP54 rating
- Manual override
- 5-year warranty



Actuator Specifications

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Inputs | |
| Control Signal MA41-707x and MA41-707x-502 | On-off. SPST control contacts or Triacs (500 mA rated) |
| MF41-7073 and MF41-7073-502 | Floating point control, 24 Vac |
| MS41-7073 and MS41-7073-502 | Spring return, proportional, 2...10 Vdc or 4...20 mA dc with a 500 W resistor |
| Power Requirements (see table). | All 24 Vac circuits are Class 2. All circuits 30 Vac and above are Class 1 |
| Connections | 3 ft. (91 cm) long, appliance cables, 1/2 in. conduit connectors For M20 Metric conduit, use AM-756 adaptor |
| Motor Type | |
| Brush | MA41-707x |
| Brushless DC | MF41-7073, MS41-7073 |
| Outputs | |
| Electrical Control Mode | Switch provided for selection of direct acting or reverse acting control mode on proportional models |
| Timing: | Approximate timing for MA41-707x series is 80 seconds. Approximate timing for MF41-7073 series or MS41-7073 series is 195 seconds. |
| Two auxiliary switches available with Mx41-7071-502 or Mx41-7070-502, SPDT 7A resistive @ 250 Vac, one fixed @ 5° and one adjustable 25...85°. Switch meets VDE requirements for 7 (2.5)A, 250 Vac. | |
| Two auxiliary switches available with Mx41-7073-502, SPDT 7A resistive @ 24 Vac, one fixed @ 5° and one adjustable 25 to 85°. Switches meet VDE requirements for 6 (1.5)A, 24 Vac. | |
| Position Feedback Voltage "AO" | 2...10 Vdc (maximum 0.5 mA) output signal for position feedback or operation of up to four slave actuators. |
| Mechanical | |
| Output Torque Rating | 60 lb-in. (7 N-m) minimum, 250 lb-in. (28 N-m) maximum |
| Stroke | Rotation is limited to 95° ± 5° maximum, adjustable from 30...95° with AM-689 rotation limiter |
| Position Indicator | Pointer and (-5...90°) scale are provided for position indication (-5° is the 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 |
| Damper Shaft Size | Up to 3/4" in diameter and 1/2" square. With AM-687, up to 1.05" in diameter and 5/8" square |
| Nominal Damper Area | Actuator sizing should be done in accordance with damper manufacturer's specifications |
| Manual Override | For Mx41-707x manual override rotation is adjustable from -5°...85° by using manual override crank |
| Environmental | |
| Temperature Limits | |
| Shipping and storage | -40...160 °F (-40...71 °C) ambient |
| Operating | -22...140 °F (-30...60 °C) |
| Humidity | 5...95% RH, non-condensing |

| | |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enclosure Rating | NEMA 1 NEMA 2 (IEC IP54) with conduit connector in the down position |
| Agency Listings | UL 873, Underwriters Laboratories (File #9429 Category Temperature-Indicating and Regulating Equipment) |
| cUL | Canadian Standards C22.2 No. 24 |
| European Community | EMC Directive (89/336/EEC) Low Voltage Directive (72/23/EEC) |
| Australia | This product meets requirements to bear the RSM Mark according to the terms specified by the Communications Authority under the Radiocommunications Act 1992 |

| Part Numbers | Voltage 50/60 Hz | Running (Hz) | | | | DC Amps | Holding (Hz) | |
|-----------------------------|-----------------------------|--------------|-----|-----|-----|------------|--------------|-----|
| | | 50 | | 60 | | | 50 | 60 |
| | | VA | W | VA | W | | W | W |
| MA41-7073 and MA41-7073-502 | 24 Vac ± 20% 22...30 Vdc | 4.8 | 3.2 | 4.8 | 3.2 | 0.13 | 0.8 | 0.8 |
| MS41-7073 and MS41-7073-502 | 24 Vac ± 20% 22...30 Vdc | 5.8 | 4.6 | 5.8 | 4.6 | 0.17 | 2.3 | 2.3 |
| MF41-7073 and MF41-7073-502 | 24 Vac ± 20% 22...30 Vdc | 6.2 | 4.8 | 6.2 | 4.8 | 0.18 | 2.8 | 2.8 |
| MA41-7070 and MA41-7070-502 | 120 Vac ± 10% | 10.7 | 4.2 | 5.6 | 3.6 | — | 2.0 | 1.2 |
| MA41-7071 and MA41-7071-502 | 230 Vac ± 10% | 17.0 | 5.1 | 8.0 | 4.0 | — | 2.7 | 1.4 |

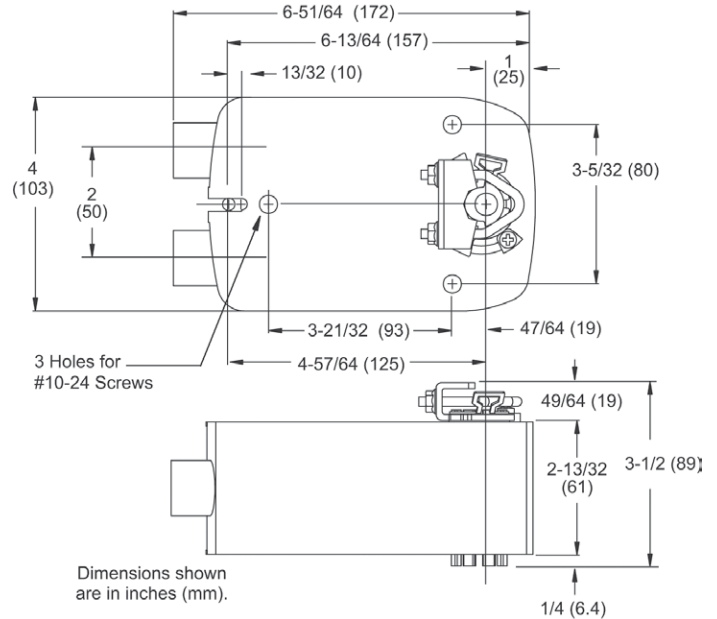


Figure 5. Mx41-707x Series Mounting Dimensions (mm)

MA41-715X, MF41-7153, and MS41-7153 Series Actuators

For spring return applications requiring floating, two-position, or proportional modulation control of dampers and valves in HVAC systems.

Features:

- Direct mount to round or square damper shaft
- 133 lb-in (15 N-m) torque rating
- Overload protection throughout rotation
- Optional built-in auxiliary switches
- True mechanical clockwise or counterclockwise spring return operation for reliable 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 housings for NEMA 2/IP54
- Manual override
- 5-year warranty

Actuator Specifications

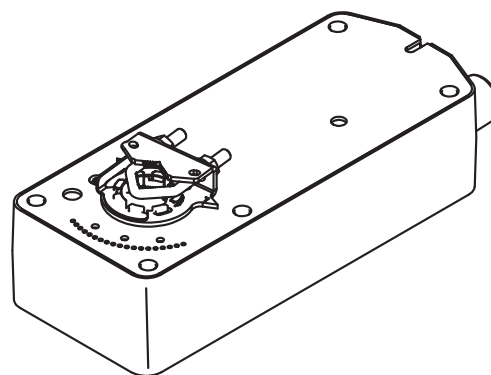
| | |
|-----------------------------|------------------------------------------------------------------------------------------------------|
| Inputs | |
| Control Signal | |
| MA41-715x and MA41-715x-502 | On-off, SPST control contacts or Triacs (500 mA rated) |
| MF41-7153 and MF41-7153-502 | Floating point control 24 Vac |
| MS41-7153 and MS41-7153-502 | Proportional, 2...10 Vdc or 4 to 20 mA dc with a 500 W resistor. |
| Power Requirements | |
| | All 24 Vac circuits are Class 2 |
| | All circuits 30 Vac and above are Class 1 |
| Connections | |
| | 3 ft. (91 cm) long, appliance cable, 1/2 in. conduit connectors |
| | For M20 Metric conduit, use AM-756 adaptor |
| Motor Type | |
| Brushless DC | MA41-715x, MF41-7153, MS41-7153 |
| Outputs | |
| Electrical | |
| Control Mode | Switch provided for selection of direct acting or reverse acting control mode on proportional models |
| Timing | |
| | Approximate timing is 190 seconds |

Two auxiliary switches available with MA41-7151-502 or MF41-7150-502, SPDT 7A resistive @ 250 Vac, one fixed @ 5° and one adjustable 25...85°. Switch meets VDE requirements for 7 (2.5)A, 250 Vac.

Two auxiliary switches available with Mx41-7153-502, SPDT 7A resistive @ 24 Vac, one fixed @ 5° and one adjustable 25...85°. Switches meet VDE requirements for 6 (1.5)A, 24 Vac.

Position Feedback Voltage 2...10 Vdc (maximum 0.5 mA) output signal for position feedback or operation of up to four slave actuators

| | |
|-----------------------|-------------------------------------------------------------------------------------------------------------------|
| Mechanical | |
| Output Torque Rating | 133 lb-in(15 N-m) minimum, 350 lb-in. (40 N-m) maximum |
| Stroke | Rotation is limited to 95° ± 5° maximum, adjustable from 30...95° with AM-689 rotation limiter |
| Position Indicator | Pointer and (-5...90°) scale are provided for position indication (-5° is the 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. |
| Damper Shaft Size | Up to 3/4" in diameter and 1/2" square. With AM-687, up to 1.05" in diameter and 5/8" square |
| Nominal Damper Area | Actuator sizing should be done in accordance with damper manufacturer's specifications. |
| Manual Override | For Mx41-715x rotation is adjustable from -5°...85° by using manual override crank |
| Environmental | |
| Temperature Limits | |
| Shipping and storage | -40...160 °F (-40...71 °C) ambient |
| Operating | -22...140 °F (-30...60 °C) |
| Humidity | 5...95% RH, non-condensing |
| Enclosure Rating | NEMA 1, NEMA 2 (IEC IP54) with conduit connector in the down position. |
| Agency Listings | |
| UL | UL 873, Underwriters Laboratories (File #9429 Category Temperature-Indicating and Regulating Equipment) |
| cUL | Canadian Standards C22.2 No. 24 |
| European Community | EMC Directive (89/336/EEC) Low Voltage Directive (72/23/EEC) |
| Australia | This product meets requirements to bear the RSM Mark according to the terms specified by the Communications Authority under the Radiocommunications Act 1992. |

| Part Numbers | Voltage 50/60 Hz | Running (Hz) | | | | | Holding (Hz) | |
|-----------------------------|-----------------------------|--------------|-----|------|-----|---------|--------------|-----|
| | | 50 | | 60 | | DC Amps | 50 | 60 |
| | | VA | W | VA | W | | | |
| MA41-7153 and MA41-7153-502 | 24 Vac ± 20% 22...30 Vdc | 9.8 | 7.5 | 9.7 | 7.5 | 0.29 | 2.8 | 2.8 |
| MS41-7153 and MS41-7153-502 | 24 Vac ± 20% 22...30 Vdc | 9.8 | 7.4 | 9.7 | 7.4 | 0.28 | 2.9 | 2.9 |
| MF41-7153 and MF41-7153-502 | 24 Vac ± 20% 22...30 Vdc | 9.8 | 7.7 | 9.7 | 7.7 | 0.30 | 3.3 | 3.3 |
| MA41-7150 and MA41-7150-502 | 120 Vac ± 10% | 11.7 | 8.8 | 10.0 | 8.4 | — | 3.6 | 5.0 |
| MA41-7151 and MA41-7151-502 | 230 Vac ± 10% | 15.5 | 9.5 | 10.6 | 8.5 | — | 4.6 | 3.3 |

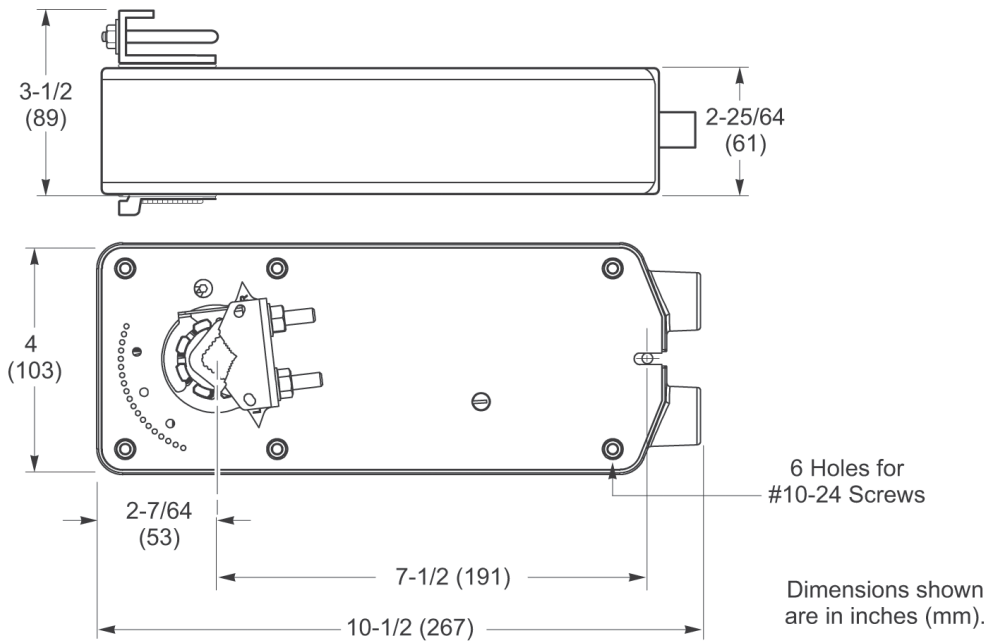


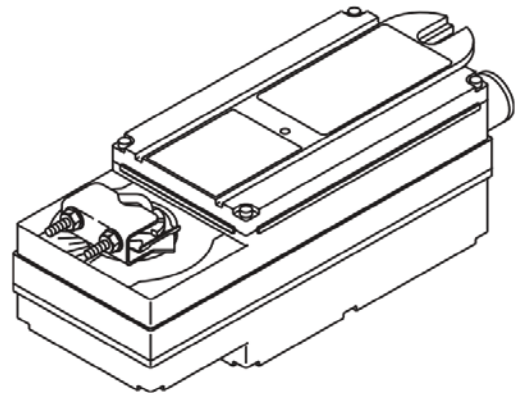
Figure 6. Mx41-715x Series Mounting Dimensions (mm)

MA40-717X, MF40-7173, and MS40-717x Series Actuators

For spring return applications requiring floating, two-position, or proportional modulation control of dampers and valves in HVAC systems.

Features:

- Direct mount to round or square damper shaft
- 150 lb-in (17 N-m) torque rating
- Overload protection throughout rotation
- Oil immersed gear train provides continuous lubrication
- NEMA 4 housing (IEC IP56)
- Automatic current sensing motor control provides extended reliability and repeatable timing
- Provides true mechanical clockwise or counterclockwise spring return operation for reliable positive close-off in airtight applications
- MA40-717x models provide on-off control
- MF40-7173 models provide floating point control (drive open-hold-drive closed)
- MS40-717x models provide proportional control compatible with 2...10 Vdc or 4...20 mA dc with the addition of a 500 ohm resistor (not included)
- 5-year warranty
- Can be double mounted (gang mounting) to accommodate high torque application requirements (2 to 4 actuators)
- MS40-717x models provide position feedback signal



Actuator Specifications

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Inputs | |
| Control Signal MA40-717x MF40-7173 | Two wire, SPST or Triacs SPDT floating control output, Triacs (500 mA rated), or 2 SPST contacts |
| MS40-717x | proportional, 2...10 Vdc or 4...20 mA dc with the addition of a 500 ohm resistor (not included). |
| Power Requirements (see table) | All 24 Vac and 22...30 Vdc circuits are Class 2. All circuits 30 Vac and above are Class 1 |
| Impedance | 2...10 Vdc, 121KW. 4...20 mA dc, 500W (user supplied) (MS40-717x models only) |
| Connections | |
| Class 1: | |
| Class 2 Power and Control: | 24 inch (61 cm) long appliance cables, 18 AWG color coded leads. 1/2 in. conduit connector. For M20 Metric conduit, use AM-756 adaptor. |
| 36 inch (91 cm) Long, 22 AWG color coded appliance cable pigtail leads. 1/2 in. conduit connector. For M20 Metric conduit, use AM-756 adaptor. | |
| Motor Type | Brushless DC |
| Outputs | |
| Electrical | |
| Stroke | Electronically limited to 92° ±1° (MS) MF-MA Mechanically limited To 101° ±1° |
| Timing | Approximate timing is 147 sec. (MS); 162 sec. for MF and MA models |
| Mechanical | |
| Output Torque Rating | 150 lb-in. (17 N-m) minimum, 545 lb-in. (61.8 N-m) maximum |
| Position Indicator | Pointer and scale are provided for position indication (0° is the 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. |
| Damper Shaft Size | Up to 3/4" in diameter, 1/2" square. With AM-687, up to 1.05" in diameter and 5/8" square |

| | |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal Damper Area | Actuator sizing should be done in accordance with damper manufacturer's specifications |
| Environmental | |
| Temperature Limits | |
| Shipping and storage | -40...160 °F (-40...71 °C) ambient |
| Operating | -25...140 °F (-32...60 °C) |
| Humidity | 5...95% RH, non-condensing |
| Locations | NEMA 1 (IEC IP10) NEMA 4 (IEC IP 56) with customer supplied water tight conduit connectors |
| Agency Listings | |
| UL | UL 873, Underwriters Laboratories (File #9429 Category Temperature-Indicating and Regulating Equipment). |
| European Community | EMC Directive (2004/108/EC) Low Voltage Directive (72/23/EEC) |
| cUL | Canadian Standards C22.2 No. 24-93 |
| Australia | This product meets requirements to bear the RSM Mark according to the terms specified by the Communications Authority under the Radiocommunications Act 1992 |

| Part Numbers | Power Input @ 50/60 Hz | | | |
|--------------|------------------------|------------|------------|-------|
| | Voltage | Running VA | Holding VA | Watts |
| MA40-7173 | 24 Vac ±20% | 7.4 | 5.1 | 5.3 |
| | 22...30 Vdc | 5.0 | 3.0 | 5.0 |
| MS40-7173 | 24 Vac ±20% | 7.8 | 4.7 | 5.5 |
| | 22...30 Vdc | 5.6 | 2.5 | 5.0 |
| MF40-7173 | 24 Vac ±20% | 8.1 | 5.3 | 5.8 |
| | 22...30 Vdc | 5.7 | 3.6 | 5.7 |
| MA40-7170 | 120 Vac ±10% | 8.4 | 6.6 | 6.2 |
| MS40-7170 | 120 Vac ±10% | 8.5 | 5.2 | 6.4 |
| MA40-7171 | 240 Vac ±10% | 9.8 | 8.5 | 6.5 |
| MS40-7171 | 240 Vac ±10% | 10.8 | 9.0 | 7.2 |

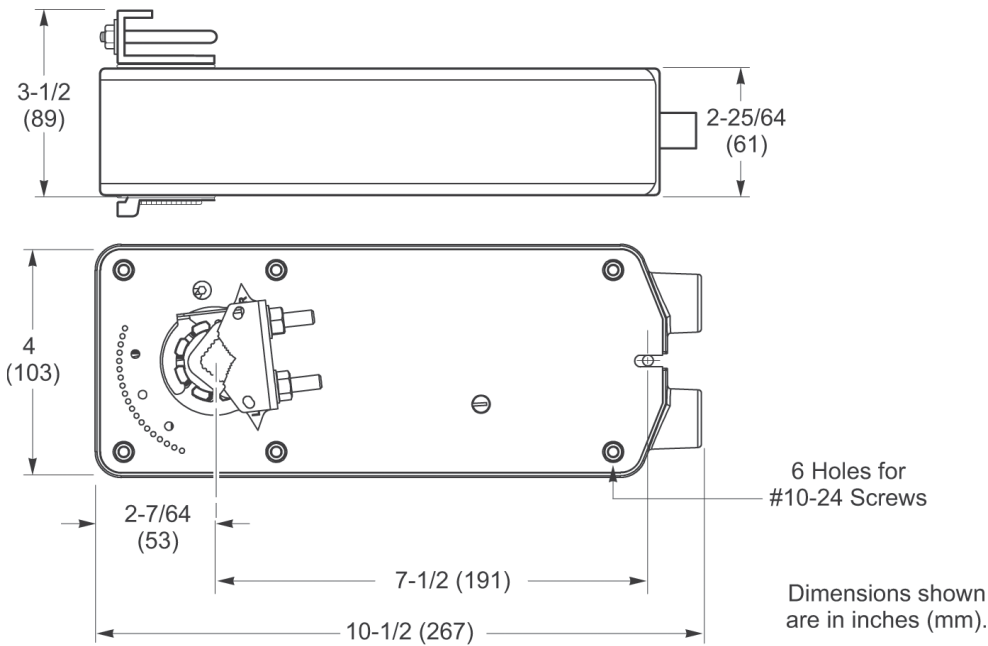


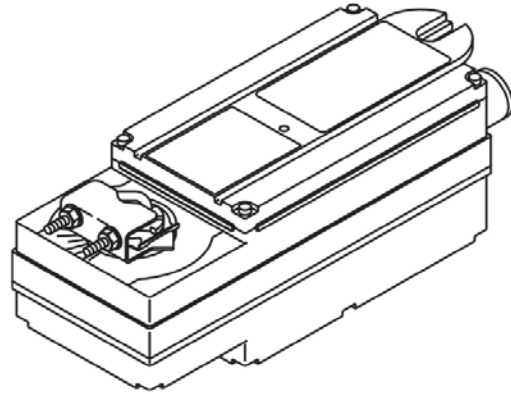
Figure 7. Mx40-717x Series Mounting Dimensions (mm)

MF41-6343 and MS41-634x Series Actuators

For non-spring return applications requiring floating or proportional modulation control of dampers and valves in HVAC systems.

Features:

- Direct mount to round or square damper shaft
- 300 lb-in (34 N-m) torque rating
- Overload protection throughout rotation
- Oil immersed gear train provides continuous lubrication
- NEMA 4 housing (IEC IP56)
- Manual override to allow positioning for installation and manual operation
- Automatic current sensing motor control provides extended reliability and repeatable timing
- MF41-6343 models provide floating point control (drive open-hold-drive closed)
- MS41-634x models provide proportional control compatible with 2...10 Vdc or 4...20 mA dc with the addition of a 500 ohm resistor (not included)
- 5-year warranty
- Can be double-mounted (gang mounted) to accommodate high torque application requirements (2 to 4 actuators)
- MS41-634x models provide position feedback signal



Actuator Specifications

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Inputs | |
| Control Signal | |
| MF41-6343 | SPDT floating control output, Triacs (500 mA rated), or 2 SPST contacts |
| MS41-634x | proportional, 2...10 Vdc or 4...20 mA dc with the addition of a 500 ohm resistor (not included). |
| Power Requirements (see table) | |
| All 24 Vac and 22...30 Vdc circuits are Class 2. | |
| All circuits 30 Vac and above are Class 1. | |
| Connections | |
| Class 1 | |
| Class 2 Power and Control | 24 inch (61 cm) long appliance cables, 1/2 in. conduit connector. |
| For M20 Metric conduit, use AM-756 adaptor | |
| 36 inch (91 cm) long, 22 AWG color coded appliance cable pigtail leads. 1/2 in. conduit connector. For M20 Metric conduit, use AM-756 adaptor. | |
| Motor Type | Brushless DC |
| Outputs | |
| Electrical | |
| Stroke | Electronically limited to 92° ±1° (MS) MF Mechanically limited To 101° ±1° |
| Timing | Approximate timing is 148 sec. (MS) and 162 sec. for MF models. |
| Mechanical | |
| Output torque rating | 300 lb-in. (34 N-m) minimum, 650 lb-in. (73.7 N-m) maximum |
| Position indicator | Pointer and scale are provided for position indication) |
| Direction of rotation | CW or CCW rotation is available through reversible mounting |
| Damper Shaft Clamp | Direct coupled using a through hole output hub |
| Damper Shaft Size | 3/8" ... 1/2" round and 3/8" ... 1/2" square With AM-754, up to 1.05" in diameter and 5/8" square |

| | |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal Damper Area | Actuator sizing should be done in accordance with damper manufacturer's specifications. |
| Manual Override | Activated by the manual override crank |
| Environmental | |
| Temperature Limits | |
| Shipping and storage | -40...160 °F (-40...71 °C) ambient. |
| Operating | -25...140 °F (-32...60 °C) |
| Humidity | 5...95% RH, non-condensing |
| Enclosure Ratings | NEMA 1 (IEC IP10). NEMA 4 (IEC IP56) with customer supplied water tight conduit connectors. |
| Agency Listings | |
| UL | UL 873, Underwriters Laboratories (File #9429 Category Temperature-Indicating and Regulating Equipment) |
| European Community | EMC Directive (2004/108/EC) Low Voltage Directive (72/23/EEC) Canadian Standards C22.2 No. 24-93 |
| cUL | |
| Australia | This product meets requirements to bear the RSM Mark according to the terms specified by the Communications Authority under the Radiocommunications Act 1992. |

| Part Numbers | Power Input @ 50/60 Hz | | | |
|--------------|------------------------|------------|------------|-------|
| | Voltage | Running VA | Holding VA | Watts |
| MS41-6343 | 24 Vac ±20% | 5.6 | 4.0 | 3.6 |
| | 22...30 Vdc | 3.4 | 2.2 | 3.4 |
| MS41-6340 | 120 Vac ±10% | 7.5 | 6.2 | 4.7 |
| MS41-6341 | 240 Vac ±10% | 9.0 | 8.1 | 5.0 |
| MF41-6343 | 24 Vac ±20% | 5.7 | 4.1 | 3.9 |
| | 22...30 Vdc | 4.1 | 3.0 | 4.1 |

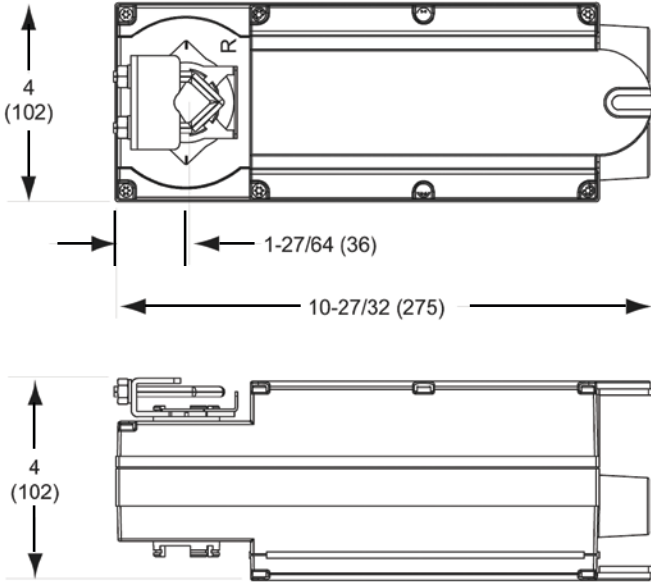


Figure 8. MX41-634X Series Mounting Dimensions

Damper Actuator Cross Reference

The cross reference tables list Direct-Coupled Actuators which may replace obsolete SEC and Belimo devices, as well as older TAC devices. The tables list two-position, floating, and proportional actuators. The devices to be replaced are listed alphanumerically in the left-hand column, with the suggested replacement in the center column. The replacement actuators in this list represent what we believe are equivalent units.

SEC to Current Actuators

| SEC P/N | Current P/N | Description | 2 | F | P |
|-------------|---------------|-----------------------------------------------------------------------------------------|----------------------------------------|---|---|
| — | MA40-7041 | 230 Vac 35 lb-in. (4 N-m) (2-position) | X | | |
| | MA40-7041-501 | 230 Vac 35 lb-in. (4 N-m) w/aux switch (2-position) | X | | |
| | MA41-7071 | 230 Vac 60 lb-in. (7 N-m) (2-position) w/manual override | X | | |
| | MA41-7071-502 | 230 Vac 60 lb-in. (7 N-m) w/aux switch (2-position) w/manual override | X | | |
| | MA40-7170 | 120 Vac 150 lb-in. (17 N-m) (2-position) | X | | |
| | MA40-7171 | 240 Vac 150 lb-in. (17 N-m) (2-position) | X | | |
| | MA40-7173 | 24 Vac or 22...30 Vdc 150 lb-in. (17 N-m) (2-position) | X | | |
| | MF41-7073 | 24 Vac or 22...30 Vdc 60 lb-in. (7 N-m) (floating) w/manual override | | X | |
| | MF41-7073-502 | 24 Vac or 22...30 Vdc 60 lb-in. (7 N-m) w/aux switch (floating) w/manual override | | X | |
| | MF41-7153 | 24 Vac or 22...30 Vdc 133 lb-in. (15 N-m) (floating) w/manual override | | X | |
| | MF41-7153-502 | 24 Vac or 22...30 Vdc 133 lb-in. (15 N-m) w/aux switch (floating) w/manual override | | X | |
| | MF40-7173 | 24 Vac or 22...30 Vdc 150 lb-in. (17 N-m) (floating) | | X | |
| | MS41-7073-502 | 24 Vac or 22...30 Vdc 60 lb-in. (7 N-m) w/aux switch (proportional) w/manual override | | | X |
| | MS41-7153-502 | 24 Vac or 22...30 Vdc 133 lb-in. (15 N-m) w/aux switch (proportional) w/manual override | | | X |
| | MS40-7170 | 120 Vac 150 lb-in. (17 N-m) (proportional) | | | X |
| | MS40-7171 | 240 Vac 150 lb-in. (17 N-m) (proportional) | | | X |
| | MS40-7173 | 24 Vac or 22...30 Vdc 150 lb-in. (17 N-m) (proportional) | | | X |
| | MS41-6340 | 120 Vac 300 lb-in. (34 N-m) NSR (proportional) | | | X |
| | MS41-6341 | 240 Vac 300 lb-in. (34 N-m) NSR (proportional) | | | X |
| | MA-7101 | MA40-7040 | 120 Vac 35 lb-in. (4 N-m) (2-position) | X | |
| MA-7101-500 | MA40-7040-501 | 120 Vac 35 lb-in. (4 N-m) w/aux switch (2-position) | X | | |
| MA-7103 | MA40-7043 | 24 Vac or 22...30 Vdc 35 lb-in. (4 N-m) (2-position) | X | | |
| MA-7103-500 | MA40-7043-501 | 24 Vac or 22...30 Vdc 35 lb-in. (4 N-m) w/aux switch (2-position) | X | | |
| MA-7201 | MA41-7070 | 120 Vac 60 lb-in. (7 N-m) (2-position) w/manual override | X | | |
| MA-7201-500 | MA41-7070-502 | 120 Vac 60 lb-in. (7 N-m) w/aux switch (2-position) w/manual override | X | | |
| MA-7203 | MA41-7073 | 24 Vac or 22...30 Vdc 60 lb-in. (7 N-m) (2-position) w/manual override | X | | |
| MA-7203-500 | MA41-7073-502 | 24 Vac or 22...30 Vdc 60 lb-in. (7 N-m) w/aux switch (2-position) w/manual override | X | | |

Selection Guide

| SEC P/N | Current P/N | Description | 2 | F | P |
|-------------|---------------|-----------------------------------------------------------------------------------------------------------|---|---|---|
| MA-7501 | MA41-7150 | 120 Vac 133 lb-in. (15 N-m) (2-position) w/manual override | X | | |
| MA-7501-502 | MA41-7150-502 | 120 Vac 133 lb-in. (15 N-m) w/aux switch (2-position) w/manual override | X | | |
| MA-7503 | MA41-7153 | 24 Vac or 22...30 Vdc 133 lb-in. (15 N-m) (2-position) w/manual override | X | | |
| MA-7503-502 | MA41-7153-502 | 24 Vac or 22...30 Vdc 133 lb-in. (15 N-m) w/aux switch (2-position) w/manual override | X | | |
| MA-7505 | MA41-7151 | 230 Vac 133 lb-in. (15 N-m) (2-position) w/manual override | X | | |
| MA-7505-502 | MA41-7151-502 | 230 Vac 133 lb-in. (15 N-m) w/aux switch (2-position) w/manual override | X | | |
| MF-6103 | MF41-6043 | 24 Vac 35 lb-in. (4 N-m) NSR (floating) | | X | |
| | MF41-6043-502 | 24 Vac 35 lb-in. (4 N-m) NSR (floating), w/two aux switches | | X | |
| | MF41-6043-510 | 24 Vac 35 lb-in. (4 N-m) NSR (floating), feedback potentiometer | | X | |
| MF-6203 | MF41-6083 | 24 Vac 70 lb-in. (8 N-m) spdt NSR (floating) | | X | |
| | MF41-6083-502 | 24 Vac 70 lb-in. (8 N-m) NSR (floating), w/two aux switches | | X | |
| | MF41-6083-510 | 24 Vac 70 lb-in. (8 N-m) NSR (floating), feedback potentiometer | | X | |
| MF-6633 | MF41-6153 | 24 Vac 133 lb-in. (15 N-m) spdt NSR (floating) | | X | |
| MF-6733 | MF41-6343 | 24 Vac or 33-30 Vdc 300 lb-in. (34 N-m) spdt NSR (floating) | | X | |
| MF-7103 | MF40-7043 | 24 Vac or 22...30 Vdc 35 lb-in. (4 N-m) (floating) | | X | |
| MF-7103-500 | MF40-7043-501 | 24 Vac or 22...30 Vdc 35 lb-in. (4 N-m) w/aux switch (floating) | | X | |
| MS-6103 | MS41-6043 | 24 Vac 35 lb-in. (4 N-m) NSR (proportional) | | | X |
| | MS41-6043-502 | 24 Vac 35 lb-in. (4 N-m) NSR (proportional), w/two aux switches | | | X |
| | MS41-6043-520 | 24 Vac 35 lb-in. (4 N-m) NSR (proportional), adjustable start point (offset) and span | | | X |
| | MS41-6043-522 | 24 Vac 35 lb-in. (4 N-m) NSR (proportional), w/two aux switches, adjustable start point (offset) and span | | | X |
| MS-6233 | MS41-6083 | 24 Vac 70 lb-in. (8 N-m) 2-10 Vdc/4-20 mA dc NSR (proportional) | | | X |
| | MS41-6083-502 | 24 Vac 70 lb-in. (8 N-m) NSR (proportional), w/two aux switches | | | X |
| | MS41-6083-520 | 24 Vac 70 lb-in. (8 N-m) NSR (proportional), adjustable start point (offset) and span | | | X |
| | MS41-6083-522 | 24 Vac 70 lb-in. (8 N-m) NSR (proportional), w/two aux switches, adjustable start point (offset) and span | | | X |
| MS-6633 | MS41-6153 | 24 Vac 133 lb-in. (15 N-m) 2-10 Vdc/4-20 mA dc NSR (proportional) | | | X |
| | MS41-6153-502 | 24 Vac 133 lb-in. (15 N-m) NSR (proportional), w/two aux switches | | | X |
| MS-6733 | MS41-6343 | 24 Vac or 22...30 Vdc 300 lb-in. (34 N-m) 2-10 Vdc/4-20 mA dc NSR (proportional) | | | X |
| MS-7103 | MS40-7043 | 24 Vac or 22...30 Vdc 35 lb-in. (4 N-m) (proportional) | | | X |
| MS-7103-500 | MS40-7043-501 | 24 Vac or 22...30 Vdc 35 lb-in. (4 N-m) w/aux switch (proportional) | | | X |
| MS-7203 | MS41-7073 | 24 Vac or 22...30 Vdc 60 lb-in. (7 N-m) (proportional) w/manual override | | | X |
| MS-7433 | MS41-7153 | 24 Vac or 22...30 Vdc 133 lb-in. (15 N-m) (proportional) w/manual override | | | X |

TAC Old to Current Actuators

| TAC Old | Current | Description | 2 | F | P |
|---------------|---------------|-----------------------------------------------------------------------------------------------------------|---|---|---|
| MF40-6043 | MF41-6043 | 24 Vac 35 lb-in. (4 N-m) NSR (floating) | | X | |
| MF40-6043-510 | MF41-6043-510 | 24 Vac 35 lb-in. (4 N-m) NSR (floating), feedback potentiometer | | X | |
| MF40-6043-520 | MF41-6043-520 | 24 Vac 35 lb-in. (4 N-m) NSR (floating), adjustable start point (offset) and span | | X | |
| MF40-6043-522 | MF41-6043-522 | 24 Vac 35 lb-in. (4 N-m) NSR (floating), w/ two aux. switches, adjustable start point (offset) & span | | X | |
| MF40-6083 | MF41-6083 | 24 Vac 70 lb-in. (8 N-m) NSR (floating) | | X | |
| MF40-6153 | MF41-6153 | 24 Vac 133 lb-in. (15 N-m) NSR (floating) | | X | |
| MF40-6343 | MF41-6343 | 24 Vac or 22...30 Vdc 300 lb-in. (34 N-m) NSR (floating) | | X | |
| MS40-6043 | MS41-6043 | 24 Vac 35 lb-in. (4 N-m) NSR (proportional) | | | X |
| MS40-6043-510 | MS41-6043-510 | 24 Vac 35 lb-in. (4 N-m) NSR (proportional), feedback potentiometer | | | X |
| MS40-6043-520 | MS41-6043-520 | 24 Vac 35 lb-in. (4 N-m) NSR (proportional), adjustable start point (offset) and span | | | X |
| MS40-6043-522 | MS41-6043-522 | 24 Vac 35 lb-in. (4 N-m) NSR (proportional), w/ two aux. switches, adjustable start point (offset) & span | | | X |
| MS40-6083 | MS41-6083 | 24 Vac 70 lb-in. (8 N-m) NSR (proportional) | | | X |
| MS40-6153 | MS41-6153 | 24 Vac 133 lb-in. (15 N-m) NSR (proportional) | | | X |
| MS40-6343 | MS41-6343 | 24 Vac or 22...30 Vdc 300 lb-in. (34 N-m) NSR (proportional) | | | X |

Belimo to Current Actuators

| Belimo P/N | Current P/N | Description | 2 | F | P |
|------------|---------------|-----------------------------------------------------------------------------------|---|---|---|
| — | MA40-7170 | 120 Vac 150 lb-in. (17 N-m) (2-position) | X | | |
| — | MA40-7171 | 240 Vac 150 lb-in. (17 N-m) (2-position) | X | | |
| — | MA40-7173 | 24 Vac or 22...30 Vdc 150 lb-in. (17 N-m) (2-position) | X | | |
| — | MF40-7073 | 24 Vac or 22...30 Vdc 60 lb-in. (7 N-m) (floating) | | X | |
| — | MF41-7073 | 24 Vac or 22...30 Vdc 60 lb-in. (7 N-m) (floating) w/manual override | | X | |
| — | MF40-7073-502 | 24 Vac or 22...30 Vdc 60 lb-in. (7 N-m) w/aux switch (floating) | | X | |
| — | MF41-7073-502 | 24 Vac or 22...30 Vdc 60 lb-in. (7 N-m) w/aux switch (floating) w/manual override | | X | |
| — | MF40-7173 | 24 Vac or 22...30 Vdc 150 lb-in. (17 N-m) (floating) | | X | |

| Belimo P/N | Current P/N | Description | 2 | F | P | |
|------------|---------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---|---|---|
| — | MS41-7073-502 | 24 Vac or 22...30 Vdc 60 lb-in. (7 N-m) w/aux switch (proportional) w/manual override | | | X | |
| — | MS40-7170 | 120 Vac 150 lb-in. (17 N-m) (proportional) | | | X | |
| — | MS40-7171 | 240 Vac 150 lb-in. (17 N-m) (proportional) | | | X | |
| — | MS40-7173 | 24 Vac or 22...30 Vdc 150 lb-in. (17 N-m) (proportional) | | | X | |
| — | MS41-6340 | 120 Vac 300 lb-in. (34 N-m) NSR (proportional) | | | X | |
| — | MS41-6341 | 240 Vac 300 lb-in. (34 N-m) NSR (proportional) | | | X | |
| AF120 | MA41-7150 | 120 Vac 133 lb-in. (15 N-m) (2-position) w/manual override | X | | | |
| AF120-S | MA41-7150-502 | 120 Vac 133 lb-in. (15 N-m) w/aux switch (2-position) w/manual override | X | | | |
| AF230 | MA41-7151 | 230 Vac 133 lb-in. (15 N-m) (2-position) w/manual override | X | | | |
| AF230-S | MA41-7151-502 | 230 Vac 133 lb-in. (15 N-m) w/aux switch (2-position) w/manual override | X | | | |
| AF24 | MA41-7153 | 24 Vac or 22...30 Vdc 133 lb-in. (15 N-m) (2-position) w/manual override | X | | | |
| AF24-3 | MF41-7153 | 24 Vac or 22...30 Vdc 133 lb-in. (15 N-m) (floating) w/manual override | | X | | |
| AF24-S | MA41-7153-502 | 24 Vac or 22...30 Vdc 133 lb-in. (15 N-m) w/aux switch (2-position) w/manual override | X | | | |
| AF24-3-S | MF41-7153-502 | 24 Vac or 22...30 Vdc 133 lb-in. (15 N-m) w/aux switch (floating) w/manual override | | X | | |
| AF24-SR | MS41-7153 | 24 Vac or 22...30 Vdc 133 lb-in. (15 N-m) (proportional) w/manual override | | | X | |
| AF24-SR-S | MS41-7153-502 | 24 Vac or 22...30 Vdc, 133 lb-in. (15 N-m) w/aux switch (proportional) w/manual override | | | X | |
| AFR24-SR | — | 24 Vdc or 22...30 Vdc, 133 lb-in. (15 N-m) (proportional) | | | X | |
| AFR24-3 | | 24 Vdc or 22...30 Vdc, 133 lb-in. (15 N-m) (floating) | | X | | |
| AFR24-3-S | | 24 Vdc or 22...30 Vdc, 133 lb-in. (15 N-m) (floating) | | X | | |
| AFR120 | | 120 Vac, 133 lb-in. (15 N-m) (2-position) | X | | | |
| AFR120-S | | 120 Vac, 133 lb-in. (15 N-m) (2-position), w/aux switch | X | | | |
| AFR24 | | 24 Vac or 22...30 Vdc, 133 lb-in. (15 N-m) (2-position) | X | | | |
| AFR24-S | | 24 Vac or 22...30 Vdc, 133 lb-in. (15 N-m) (2-position), w/aux switch | X | | | |
| GM24 | | MF41-6343 | 24 Vac or 22...30 Vdc 300 lb-in. (34 N-m) spdt NSR (floating) | | X | |
| GM24-SR | | MS41-6343 | 24 Vac or 22...30 Vdc 300 lb-in. (34 N-m) 2...10 Vdc/4...20 mA dc NSR (proportional) | | | X |
| LF120 | MA40-7040 | 120 Vac 35 lb-in. (4 N-m) (2-position) | X | | | |
| LF120-S | MA40-7040-501 | 120 Vac 35 lb-in. (4 N-m) w/aux switch (2-position) | X | | | |
| LF230 | MA40-7041 | 230 Vac 35 lb-in. (4 N-m) (2-position) | X | | | |
| LF230-S | MA40-7041-501 | 230 Vac 35 lb-in. (4 N-m) w/aux switch (2-position) | X | | | |
| LF24 | MA40-7043 | 24 Vac or 22...30 Vdc 35 lb-in. (4 N-m) (2-position) | X | | | |
| LF24-3 | MF40-7043 | 24 Vac or 22...30 Vdc 35 lb-in. (4 N-m) (floating) | | X | | |
| LF24-S | MA40-7043-501 | 24 Vac or 22...30 Vdc 35 lb-in. (4 N-m) w/aux switch (2-position) | X | | | |
| LF24-3-S | MF40-7043-501 | 24 Vac or 22...30 Vdc 35 lb-in. (4 N-m) w/aux switch (floating) | | X | | |
| LF24-SR | MS40-7043 | 24 Vac or 22...30 Vdc 35 lb-in. (4 N-m) (proportional) | | | X | |
| LF24-SR-S | MS40-7043-501 | 24 Vac or 22...30 Vdc 35 lb-in. (4 N-m) w/aux switch (proportional) | | | X | |
| LM24 | MF41-6043 | 24 Vac 35 lb-in. (4 N-m) NSR (floating) | | X | | |
| LM24-10P | MF41-6043-510 | 24 Vac 35 lb-in. (4 N-m) NSR (floating), feedback potentiometer | | X | | |
| LM24-S | MF41-6043-502 | 24 Vac 35 lb-in. (4 N-m) NSR (floating), w/two aux switches | | X | | |
| LM24-SR | MS41-6043 | 24 Vac 35 lb-in. (4 N-m) NSR (proportional) | | | X | |
| — | MS41-6043-520 | 24 Vac 35 lb-in. (4 N-m) NSR (proportional), adjustable start point (offset) and span | | | X | |
| | MS41-6043-522 | 24 Vac 35 lb-in. (4 N-m) NSR (proportional), w/two aux switches, adjustable start point (offset) and span | | | X | |
| | MS41-6043-502 | 24 Vac 35 lb-in. (4 N-m) NSR (proportional), w/two aux switches | | | X | |
| NF120 | — | 120 Vac 60 lb-in. (7 N-m) (2-position) | X | | | |
| NF120-S | | 120 Vac 60 lb-in. (7 N-m) w/aux switch (2-position) | X | | | |
| NF230 | | 230 Vac 60 lb-in. (7 N-m) (2-position) | X | | | |
| NF230-S | | 230 Vac 60 lb-in. (7 N-m) w/aux switch (2-position) | X | | | |
| NF24 | | 24 Vac or 22...30 Vdc 60 lb-in. (7 N-m) (2-position) | X | | | |
| NF24-S | | 24 Vac or 22...30 Vdc 60 lb-in. (7 N-m) w/aux switch (2-position) | X | | | |
| NF24-SR | | 24 Vac or 22...30 Vdc 60 lb-in. (7 N-m) (proportional) | | | X | |
| NM24 | MF41-6083 | 24 Vac 70 lb-in. (8 N-m) spdt NSR (floating) | | X | | |
| | MF41-6083-502 | 24 Vac 70 lb-in. (8 N-m) NSR (floating), w/two aux switches | | X | | |
| | MF41-6083-510 | 24 Vac 70 lb-in. (8 N-m) NSR (floating), feedback potentiometer | | X | | |
| NM24-SR | MS41-6083 | 24 Vac 70 lb-in. (8 N-m) 2...10 Vdc/4...20 mA dc NSR (proportional) | | | X | |
| | MS41-6083-502 | 24 Vac 70 lb-in. (8 N-m) NSR (proportional), w/two aux switches | | | X | |
| | MS41-6083-520 | 24 Vac 70 lb-in. (8 N-m) NSR (proportional), adjustable start point (offset) and span | | | X | |
| | MS41-6083-522 | 24 Vac 70 lb-in. (8 N-m) NSR (proportional), w/two aux switches, adjustable start point (offset) and span | | | X | |
| SM24 | MF41-6153 | 24 Vac 133 lb-in. (15 N-m) spdt NSR (floating) | | X | | |
| SM24-SR | MS41-6153 | 24 Vac 133 lb-in. (15 N-m) 2...10 Vdc/4...20 mA dc NSR (proportional) | | | X | |
| | MS41-6153-502 | 24 Vac 133 lb-in. (15 N-m) NSR (proportional), w/two aux switches | | | X | |