Honeywell



# 3 Nm, 5 Nm Series Spring Return Direct Coupled Actuators

## MS3103, MS3105, MS4103, MS4105, MS7403, MS7405, MS7503, MS7505, MS8103, MS8105

*MS3103, MS3105, MS4103, MS4105, MS7403, MS7405, MS7503, MS7505, MS8103, MS8105 Spring Return Direct Coupled Actuators (DCA) are used within heating, ventilating, and air-conditioning (HVAC) systems. They can drive a variety of quarter-turn, final control elements requiring spring return fail-safe operation.*

## APPLICATIONS

- **Volume control dampers, mounted directly to the drive shaft or remotely (with the use of accessory hardware).**
- **Quarter-turn rotary valves, such as ball or butterfly valves mounted directly to the drive shaft.**
- **Linear stroke globe or cage valves mounted with linkages to provide linear actuation.**
- **Available with cable on select models.**

**SPECIFICATION DATA**

## SPECIFICATIONS

**Models:**
❑ See Table 1.

**Device Weight:**
❑ 3.5 lbs (1.60 kg)

**Ambient Operating Temperature:**
❑ -40° to 150°F (-40° to 65°C)
❑ -22° to 150°F (-30° to 65°C) (Two position only)

**Shipping and Storage Temperature:**
❑ -40° to +150°F (-40° to +65°C)

**Humidity Ratings:**
❑ 5% to 95% R.H., Non-Condensing

**Table 1. Models.**

| Model Number | Model Number (including 3 ft. whip) | Torque | Power Supply | | Time | Control Input/Output Description | SPDT Aux Switch |
|---|---|---|---|---|---|---|---|
| | | | Voltage | VA Driving[1] | Drive (sec) | | |
| MS3103J1030 | | 27 lb-in (3 Nm) | 24 Vac/dc @50/60 Hz +/ -20% 24Vdc+/-10% | 6/3 | 90 | Sylk-enabled | 0 |
| MS7403A2030 | | | | | | Floating, Modulating[2], Three-Position, Feedback | 0 |
| MS7503A2030 | | | | | | Floating, Modulating[3], and Feedback | 0 |
| MS7503A2130 | | | | | | | 1 |
| MS8103A1030 | | | | | 45 | Two-Position (SPST) | 0 |
| MS8103A1130 | | | | | | | 1 |
| MS4103A1030 | | | 100-250 Vac @50/60Hz | 6/9 | 45 | Two-Position (SPST) | 0 |
| MS4103A1130 | | | | | | | 1 |
| MS3105J3030 | | 44 lb-in (5 Nm) | 24 Vac/dc @50/60 Hz +/ -20% 24Vdc+/-10% | 6/3 | 90 | Sylk-enabled (5 addresses) | 0 |
| MS3105J3130 | | | | | | | 1 |
| MS7405A2030 | | | | | | Floating, Modulating[2], Three-Position, Feedback | 0 |
| MS7505A2030 | MS7505W2030 | | | | | Floating, Modulating[3], and Feedback | 0 |
| MS7505A2130 | MS7505W2130 | | | | | | 1 |
| MS8105A1030 | MS8105W1030 | | | | 45 | Two-Position (SPST) | 0 |
| MS8105A1130 | MS8105W1130 | | | | | | 1 |
| MS4105A1030 | | | 100-250 Vac @50/60Hz | 6/9 | 45 | Two-Position (SPST) | 0 |
| MS4105A1130 | | | | | | | 1 |

[1] Number represents range
[2] 2-10 Vdc
[3] 0/2-10 Vdc

By using this Honeywell literature, you agree that Honeywell will have no liability for any damages arising out of your use or modification to, the literature. You will defend and indemnify Honeywell, its affiliates and subsidiaries, from and against any liability, cost, or damages, including attorneys' fees, arising out of, or resulting from, any modification to the literature by you.

**Electrical Connections:**
- ❑ Field wiring 18 AWG (0.5 mm) to 14 AWG (1.5 mm) conductors (stranded or solid) and up to 2 - 14 AWG (1.5 mm) conductors (stranded) to screw terminals, located under the removable access cover.

**Auxiliary Switch (One SPDT):**
- ❑ Switch adjustable from 0-95°
- ❑ 500 uA Resistive at 5 Vdc (minimum)
- ❑ 250 Vac, 8 A resistive, 3 A inductive

**Mounting: Self-centering shaft adapter (shaft coupling):**
- ❑ Round damper shafts: 3/8 to 5/8 in. (9 to 16 mm)
- ❑ Square damper shafts: 1/4 to 1/2 in. (6 to 13 mm)

**Minimum Damper Shaft Length:**
- ❑ 1 in. (25 mm); 3 in.(76 mm) recommended.

**Torque Ratings:**
Typical Holding, Driving, Spring Return:
- ❑ MSXX03: 27 lb-in. (3 Nm)
- ❑ MSXX05: 44 lb-in. (5 Nm)

Stall Maximum (fully open at 75°F):
- ❑ MSXX03: 71 lb-in. (8 Nm)
- ❑ MSXX05: 106 lb-in. (12 Nm)

**Spring Return Timing (at rated load):**
- ❑ < 25 seconds @ -4°F to 130°F (-20°C to 55°C)
  < 60 seconds @ -22°F (-30°C)

**Cable Specification:**
- ❑ 300 V, 75° C, Plenum Rated, 3 ft length from end of access cover, 18 AWG

**Sylk™ Bus**
- ❑ Sylk is a two-wire, polarity insensitive bus that provides communications between a Sylk-enabled Zelix and a Sylk-enabled controller. For wiring, the Zelix Sylk-enabled actuator may be mounted up to 200 ft. (61 m) from the controller; twisted pair wire is recommended for wire runs longer than 100 ft. (30.5 m). Using Sylk-enabled actuators saves I/O on the controller and is faster and cheaper to install since the bus is polarity insensitive.

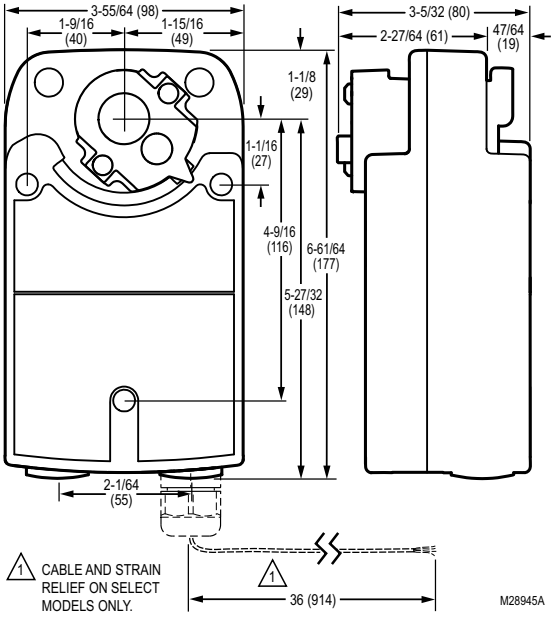



**Fig. 1. Dimensional drawing of actuator in in. (mm)**

**Stroke:** 95° ±3°, mechanically limited.

**Approvals:**
- ❑ UL873
- ❑ IEC 60730-1 and Part 2–14
- ❑ UL1097 for Double Insulation
- ❑ CE Certification Low Voltage Directive 2006/95/EC
- ❑ CE EMC 2004/108/EC
- ❑ C-Tick N314

**Design Life (at Rated Voltage):**
- ❑ 60,000 full stroke cycles; 1,500,000 repositions; 60,000 full stroke spring returns.

**Enclosure Ratings:**
- ❑ IP54
- ❑ NEMA 2
- ❑ Flame Resistance UL94-5VA

**Input Impedance:**
- ❑ 95 kOhms minimum.

**Feedback Signal:**
- ❑ 0(2)-10 Vdc, 3 mA minimum.

**Analog Output Signal:**
- ❑ 0(2)-10Vdc, Not supported with current Sylk tool.

**Noise Rating at 1m (Maximum):**
- ❑ Driving
  - ❑ Floating/Modulating/Econ/Sylk-enabled: < 40 dB(A)
  - ❑ 2-Position: < 50 dB(A)
- ❑ Spring Return: < 60 dB(A)

**Accessories:**
- ❑ 27518 Balljoint (5/16 in.)
- ❑ 103598 Balljoint (1/4 in.)
- ❑ 27520B, C, E, G, H, K, L, Q Pushrod (5/16 in. diameter)
- ❑ STRN-STRNRLF Water-tight Cable Gland/Strain-relief Fitting (10 pack)
- ❑ STRN-WMK-01 Wall Mount Kit
- ❑ STRN-ECONO-01 Economizer Retrofit Kit
- ❑ STRN-CRK-01 Crank Arm Kit
- ❑ STRN-SCSA Self Centering Shaft Adapter
- ❑ STRN-CA-01 Crank Arm (Non-Self-Centering)
- ❑ STRN-CA-02 Crank Arm (Self-Centering)
- ❑ STRN-BRKT Anti-Rotation Bracket

# TYPICAL SPECIFICATION

**Spring return actuators shall be direct coupled type requiring neither crankarm nor linkage and be capable of direct mounting to a jackshaft of up to 5/8 in. diameter. The actuator shall connect to the shaft using a removable output hub with a self-centering shaft coupling. This coupling shall provide concentric mounting and include an integral adjustable range-stop mechanism.**
**The actuator shall provide two-position, floating, proportional, or Sylk bus control. Proportional control refers to direct acceptance of 0-10 Vdc, 2-10 Vdc, or (with addition of a 500 ohm resistor) a 4-20 mA input signal. Proportional and floating control models shall provide a feedback signal. Sylk-enabled models provide control and feedback via communication between the actuator and Sylk-enabled controller. Actuators shall provide wiring terminals located within an integral access cover with conduit connections. Proportional and floating actuators shall have a rotation direction control switch accessible on the cover.**
**All spring return actuators must be designed for either clockwise or counterclockwise fail-safe operation with a continuously engaged mechanical spring. This spring must return the valve or actuator to a fail-safe position within 25 seconds of power loss.**
**All actuators shall be designed for a minimum of 60,000 fullstroke cycles at rated torque and temperature, 60,000 springreturn cycles and 1,500,000 repositions. Run time shall be constant and independent of: load, temperature, and supply voltage (within specifications). All actuators shall be UL60730 and cUL (CSA22.2) listed, have a five year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Honeywell.**

**Automation and Control Solutions**
Honeywell International Inc.
1985 Douglas Drive North
Golden Valley, MN 55422
customer.honeywell.com

® U.S. Registered Trademark
© 2026 Honeywell International Inc.
63-1336—06 M.S. Rev. 10-26
Printed in United States

Honeywell