3 Nm, 5 Nm Series Spring Return Direct Coupled Actuators
MS3103, MS3105, MS4103, MS4105, MS7403, MS7405, MS7503, MS7505, MS8103, MS8105

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.

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.

<table>
<thead>
<tr>
<th>Model Number (including 3 ft. whip)</th>
<th>Model Number</th>
<th>Torque</th>
<th>Power Supply</th>
<th>Time</th>
<th>Control Input/Output Description</th>
<th>SPDT Aux Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS3103J1030</td>
<td></td>
<td>27 lb-in (3 Nm)</td>
<td>24 Vac/dc @ 50/60 Hz +/-20% 24Vdc +/-10%</td>
<td>6/3</td>
<td>90</td>
<td>Sylk-enabled</td>
</tr>
<tr>
<td>MS7403A2030</td>
<td></td>
<td>44 lb-in (5 Nm)</td>
<td>24 Vac/dc @ 50/60 Hz +/-20% 24Vdc +/-10%</td>
<td>6/3</td>
<td>90</td>
<td>Sylk-enabled</td>
</tr>
<tr>
<td>MS7503A2030</td>
<td></td>
<td>27 lb-in (3 Nm)</td>
<td>100-250 Vac @ 50/60Hz</td>
<td>6/9</td>
<td>45</td>
<td>Two-Position (SPST)</td>
</tr>
<tr>
<td>MS4103A1030</td>
<td>MS4103A1130</td>
<td>40 lb-in (5 Nm)</td>
<td>100-250 Vac @ 50/60Hz</td>
<td>6/9</td>
<td>45</td>
<td>Two-Position (SPST)</td>
</tr>
</tbody>
</table>

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

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3 NM, 5 NM SERIES SPRING RETURN DIRECT COUPLED ACTUATORS

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 μA 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)

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.

Noise Rating at 1m (Maximum):
- Driving: < 100 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 crank-narm 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 counter-clockwise 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 full-stroke cycles at rated torque and temperature, 60,000 spring return 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.