

## N05 Series Non-Spring Return Direct Coupled Actuators MN6105, MN7505

MN6105, MN7505 Non-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.

### Applications include:

- 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.

## SPECIFICATIONS

### Torque Ratings:

- 44 lb-in. (5 Nm).

### Electrical Ratings:

- See Table 1.

### Electrical Connections:

- Field wiring 14 to 22 AWG (2.0 to 0.344 mm sq) to screw terminals, located under the removable access cover.

### Stroke:

- 95° ±3°.

### Controller Type:

- See Models.
- Input Impedance: 95K ohms minimum for MN7505.
- Feedback Signal: 0 or 2-10 Vdc for MN7505.
- Driving Current: 3 mA minimum for MN7505.

### Timing (At Rated Torque and Voltage):

- Drive Open (typical): 90 seconds.

### Temperature Ratings:

- Ambient: -5°F to 140°F (-20°C to 60°C).
- Shipping and Storage: -22°F to 176°F (-30°C to 80°C).

### Humidity Ratings:

- 5% to 95% RH noncondensing.

### Design Life (at Rated Voltage):

- 60,000 full stroke cycles; 1,500,000 repositions.

### End Switches (Two SPDT):

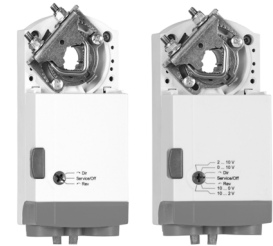
- Settings (fixed): 5° nominal stroke, 85° nominal stroke.
- Class II circuits only.

### Dimensions:

- See Fig. 1.

### Device Weight:

- 1 lb (0.45 kg).



## SPECIFICATION DATA

## FEATURES

- Access cover to facilitate connectivity.
- Declutch for manual adjustment.
- Mechanical end limits.
- Field-installable auxiliary switches.
- Rotation direction selectable by switch.
- Mountable in any orientation.
- UL listed.

### 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).
- Actuator can be mounted with shaft in any position.

### Minimum Damper Shaft Length:

- 1-5/8 in. (41 mm); 3 in. (76 mm) recommended.

### Noise Rating at 1m (Maximum):

- 35 dB(A) max at 1 m.

### Environmental Protection Ratings:

- NEMA2 IP54.

### Models

M	Electrical Motor
N	Fail Safe Function (Non-Spring Return)
61	24 Vac Floating, Two-Position Control; Reversible Mount
75	24 Vac Modulating
05	44 lb-in. (5 Nm)
A	Standard U.S. Model
1	No Feedback
2	Voltage Feedback Signal
0	No End Switches
2	Two End Switches
XX	System Controlled Numbers

M N 61 05 A 1 0 XX

### Approvals:

- UL/cUL.
- UL873 Plenum Rating, File No. E4436; Guide No. XAPX.
- CE.



**Accessories:**

- 27518 Balljoint (5/16 in.).
- 103598 Balljoint (1/4 in.).
- 205860 Electronic Minimum Position Potentiometer.
- 27520A-E,G,H-L,Q Pushrod (5/16 in. diameter).
- 32000085-001 Water-tight Cable Gland/Strain-relief Fitting (10 pack).
- 32003036-001 Weather Enclosure.
- See also Form 62-0203.

**TYPICAL SPECIFICATION**

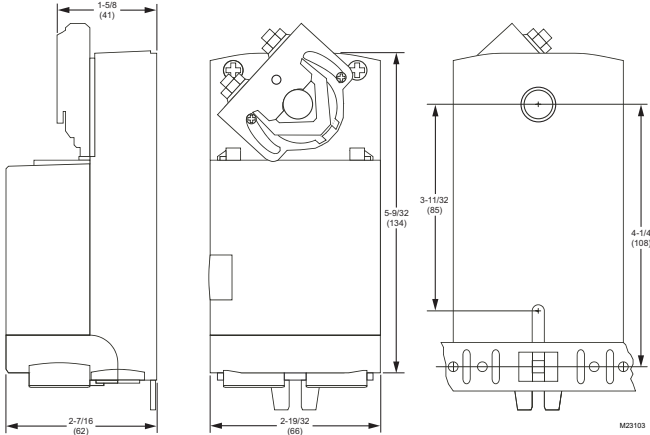


Fig. 1. Dimensional drawing of actuator in in. (mm).

Table 1. Electrical Ratings.

Model(s)	Power Input		Power Consumption (VA)
	Voltage	Frequency	Driving
MN7505 Modulating	24 Vac/dc, -15%, +20%	50/60 Hz.	5
MN6105 Floating	24 Vac/dc, -15%, +20%	50/60 Hz.	5

Non-spring return actuators shall be direct coupled type requiring neither crankarm nor linkage and be capable of direct mounting to a damper shaft of up to 1/2 in. diameter. The actuator shall connect directly to the damper shaft using a removable output hub coupling. This coupling shall provide concentric mounting and include an integral adjustable range-stop mechanism.

The actuator shall provide two-position, floating, or proportional control. Proportional control refers to direct acceptance of 0-10 Vdc, 2-10 Vdc, or 4-20 mA (with the use of a 500 ohm shunting resistor) input signal. Proportional control models provide a 0-10 Vdc or 2-10 Vdc feedback signal. Actuators shall provide wiring terminals located within an integral access cover with conduit connections. Actuators shall have a rotation direction control switch accessible on the cover. Actuator shall have electronically controlled overload protection at all angles of rotation providing an absolute limit to the output torque.

Actuators shall be designed for use in either clockwise or counterclockwise operation with minimum performance of 60,000 full-stroke powered cycles at actuator rated torque and temperature, and 1,500,000 repositions as documented in the product literature. Run time shall be constant and independent of: load, temperature, and supply voltage (within specifications).

All actuators shall be UL873 and cUL (CSA22.2) listed, have a five year warranty, and be manufactured under ISO 9001 International Quality Control Standards.

Actuators shall be manufactured by Honeywell.

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