

Thermo-Magnetic Rotary Actuators

Rotate and Hold Design

MODEL TMR0902625



PATENT PENDING

FEATURES

- **Less than 5 Watts of Power Used During Holding State**
- **Long Life — Design Target of 250,000+ Cycles**
- **Lightweight and Compact, measuring 2" (50mm) x 4" (100mm) x 2" (50mm) and weighing only ~10 oz. (.3 Kg)**
- **Enclosure Protection Class: IP-68**

DESCRIPTION

Thermotion Corporation introduces it's new Thermo-Magnetic Rotary Actuator. This rotate and hold actuator design combines the strong, smooth, silent force of our Thermal Actuators with a holding magnet to create a unique, efficient actuator.

Thermotion's Thermo-Magnetic Rotary Actuators are capable of delivering reliable, long-lasting actuation.

Applications:

- Flue and vent damper controls, valve actuation, duct and louver actuators, flap and dispenser actuators.
- Serving Transportation, HVAC, Appliance, and Aerospace Industries worldwide.

THERMOTION™

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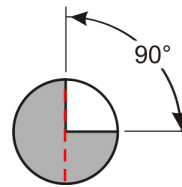
Mechanical Specifications (@ room temperature) for ROTARY Actuator	
Housing	Hi-Temperature Glass Filled ThermoPlastic
Output Force	Up to 8 in-Lbs. Gross (1 n-m)
Holding Force	Up to 4 in-Lbs. (.5 n-m)
Output	Up to 90° Rotation
Spring Return Time	Immediate upon release*
Operating Temperature	-40°F to 180°F (-40°C to 82°C)
Duty Cycle Capability	Up to 100% Continuous Duty
Weight	~ 10 oz. (283g)
Electrical Specifications:	
Initial Inrush Actuation	Voltage Dependant
Sustained Power	Less Than 5 Watts (Typical)
Available Voltages	12VDC, 24VDC/VAC, 110VAC

All specifications are subject to change without notice

* Subject to ambient temperatures and on-time.

What it Does

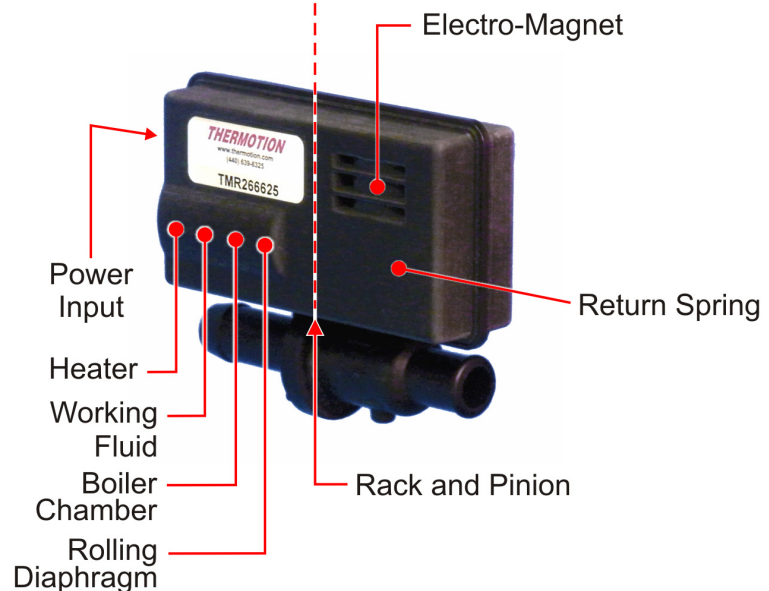
Thermotion's Thermo-Magnetic Actuator delivers a smooth, strong, and silent 90° shaft rotation — Use it to open and close valves, dampers, louvers, and other devices requiring rotary actuation.



Rotary Action from Rack and Pinion
(bottom view - enlarged)

How it Works

- Apply **Power** to **Input**
- **Heater** creates vapor pressure from a special **Working Fluid** within the **Boiler Chamber**
- Expanding vapor pushes a **Rolling Diaphragm** against the **Rack and Pinion**
- Shaft turns your intended device by 90° and latches via a unique **Electro-Magnet** design
- Once in this position, power consumption drops to a very efficient 5 watts or less
- Reversing this 90° rotation simply requires powering off, allowing the **Return Spring** to restore the **Rack and Pinion** to its original position
- Fails "Open" on power loss



ISO 9001: 2008
WITH DESIGN

A Certified
Quality
Management
System



THERMOTION LLC
CERT. # 02.009.1

THERMOTION™

Thermotion Corporation
9330 Progress Parkway
Mentor, Ohio 44060
(440) 639-8325 • www.thermotion.com
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