HQ-006 ¼ Turn Actuator

Installation & Maintenance Manual
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1.0 General

HQ series electric actuators are designed to provide reliable and efficient operation of 90 degree quarter turn valves, dampers, etc.

Warning: Use caution when working in, with, or around valves and actuators. High pressures, forces, voltages and flammable media can be present

Warning: Failure to follow instructions for proper electrical wiring, storage, set-up and maintenance may cause serious injury, damage equipment, or void warranty.
2.0 Actuator Mounting

The actuator may be mounted in any position. The HQ-006 Actuator is supplied with a female output drive and adaptor bushings. ISO5211 FO3/FO5 and FO7 Bolt patterns are provided for actuator mounting.

3.0 External Construction
4.0 Standard Wiring Diagram

5.0 Manual Override

The HQ-006 actuator comes standard with a manual override nut. This is located on the bottom of the unit, and can be easily operated with a 5M wrench.
6.0 Electrical Connection

- Move valve to mid-position by override nut. This will allow sufficient time to stop actuator in case of improper hook-up
- Identify means of removing power during hook-up
- Be sure no erroneous remote control signals can be received causing actuator to energize
- Electrically operate the valve in the open direction. If the valve closes, actuator must be stopped and checked for improper field wiring
- Set all field conduit entries in accordance with National Electric Code Requirements

7.0 Limit Switch Setting Instructions

- Operate the actuator manually to closed position
- Using a hex wrench, loosen the cam adjustment screw in the CLS limit switch cam
- Rotate the CLS cam towards limit switch lever until the switch ‘clicks’
- Tighten set screw with hex wrench
- Operate the actuator manually to open position
- Using a hex wrench, loosen the cam adjustment screw in the OLS limit switch cam
- Rotate the OLS cam towards limit switch lever until the switch ‘clicks’
- Tighten set screw with hex wrench
- Repeat for AOLS and ACLS

8.0 Lubrication

The HQ series actuators are totally enclosed units with a permanently lubricated gear trains (Moly EP Grease). Once installed lubrication should not be required. However, periodic preventative maintenance will extend the operating life of the actuator.

9.0 MDPI Settings

- Manually rotate actuator to fully closed position
- Remove actuator cover
- Loosen indicator screw
- Adjust indicator to correct orientation
- Tighten indicator screw
- Replace cover
- Check indicator alignment
10.0 Maintenance and Storage

At least once a year a check should be made of your EIM HQ Series Actuator

- Disconnect all power to actuator.
- Open Electrical Enclosure. Inspect and tighten all electrical connections
- Visually inspect for any electrical or mechanical damage. Replace worn or damaged components.
- Check lubrication consistency and levels. Fill or replace if required.

Actuators must be stored in a clean, cool and dry area. The unit shall be stored with the cover installed and the conduit openings sealed. Storage must be off the floor, covered with a sealed dust protector.

11.0 Trouble Shooting

The following instructions are offered for the most common difficulties encounter during installation and start-up.

<table>
<thead>
<tr>
<th>SYMPTOM</th>
<th>PROBABLE CAUSE</th>
<th>CORRECTIVE ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor will not Run</td>
<td>Open in control circuit</td>
<td>Refer to appropriate wiring diagram and check for continuity</td>
</tr>
<tr>
<td></td>
<td>Insulation resistance breakdown in motor</td>
<td>Perform Megger Test</td>
</tr>
<tr>
<td>No power available to actuator</td>
<td>Tripped circuit breaker</td>
<td>Reset circuit breaker</td>
</tr>
<tr>
<td>Manual Override Nut hard to turn</td>
<td>Valve stem improperly lubricated</td>
<td>Lubricate with grease</td>
</tr>
<tr>
<td></td>
<td>Actuator lubrication has broken down</td>
<td>Clean out old grease and replace with recommended lubricant</td>
</tr>
<tr>
<td></td>
<td>Valve packing gland too tight</td>
<td>Loosen packing gland nuts as necessary</td>
</tr>
<tr>
<td></td>
<td>Jammed valve</td>
<td>Refer to valve maintenance</td>
</tr>
<tr>
<td>Valve only opens or closes partially with motor</td>
<td>Limit switch improperly set</td>
<td>Check setting and reset if necessary</td>
</tr>
<tr>
<td>Manual Override Nut will not Operate valve</td>
<td>Stripped gearing</td>
<td>Replace as necessary</td>
</tr>
<tr>
<td></td>
<td>Broken handwheel shaft</td>
<td>Replace as necessary</td>
</tr>
<tr>
<td></td>
<td>Broken valve stem</td>
<td>Repair or replace as necessary</td>
</tr>
<tr>
<td>Motor runs but will not operate valve</td>
<td>Stripped gearing</td>
<td>Replace as necessary</td>
</tr>
</tbody>
</table>
12.0 **HQ Standard Features**

- Enclosure Rated: Weatherproof IP67
- Enclosure: High grade aluminium alloy, corrosion coated
- Power Supply: 110/220 VAC, 1 PH, 50/60Hz
- Motor: Reversible Motor
- Limit Switches: 4 x open/close SPDT, 250VAC 3A rating
- Stall Protection: Built-in thermal protection
- Indicator: MDPI (Mechanical Dial Position Indicator)
- Manual Override: Manual Override Nut
- Space Heater: 2W Anti-condensation
- Conduit Entries: (2) x PG13.5
- Lubrication: Grease moly EP
- Ambient Temperature: -20 deg C ~ + 70 deg C
- External Coating: Dry powder polyester

13.0 **EIM Office Locations**

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EIM Controls, Inc.  
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