PROXIMITY CONTROLS
A DIVISION OF DWYER INSTRUMENTS, INC.
P.O. BOX 373 • MICHIGAN CITY, INDIANA 46360, U.S.A.

Proximity Series QV Quick-View® Rotary Position Indicators/Switches are produced with up to four individual mechanical or proximity switches. Instructions below include installation, as well as adjustment procedures for direct drive and lever drive models.

INSTALLATION
1. Mounting kits, when provided include couplers, lever arms and screws for mounting the position indicator to a valve or actuator. A position indicator is mounted using direct drive hardware for quarter turn applications (rotational) and lever drive hardware for converting linear motion to rotary. Tubular spacers are also provided for some installations.

2. For direct drive models, attach appropriate drive yoke or solid block onto the two pins, using a #6-32 X 1/4˝ screw provided. Do not attempt to fabricate your own yokes since this a special spring-tempered material. For direct drives, with the actuator shaft rotated to its counterclockwise position, spread the driving yoke and slip it down onto the square (or rectangular) shaft of the actuator. Attach bracket with two hex cap screws. Before tightening screws, operate control slowly with a wrench or power, and observe that drive shaft and drive yoke are concentric and perpendicular throughout the complete stroke. Adjust position as required and tighten all mounting screws. Check concentricity and perpendicularity.

3. For lever drive models, attach the appropriate driving lever onto the shaft. Do not tighten. Attach switch and bracket to actuator, making sure that the lever is free to rotate over the entire range of the actuator stroke. Attach the driving pin or bolt through the lever arm if slotted, or on the driving side of the lever. (It may be necessary to loosen or remove the bracket mounting to accomplish this connection on some actuators.) Operate the actuator very slowly and observe movement of all pins and levers to be sure there are no interferences. Slide lever up or down on switch shaft to the most desirable position. When all motions are made and clearances are adequate, tighten clamp screw on lever that was left loose above. Now tighten all the mounting screws. Re-check the travel of all levers and pins for proper clearance throughout the complete stroke of the actuator.

4. Push cover down, then turn it counterclockwise and lift straight up to remove. Remove inner cover window. Remove the indicator drum.

5. Switches are set at the factory in the counterclockwise position listed below:
   - 2 Switch Unit: #1 Open, #2 Closed
   - 4 Switch Unit: #1, 3 Open, #2, 4 Closed
   - 90° rotational travel will reverse all of the above positions.

### Specifications - Installation and Operating Instructions

**SPECIFICATIONS**

- **Minimum Rotation Travel** – Switches only: 5°
- **Maximum Rotation Travel** – Switches only: 360°

- **Temperature Limits**: -40 to 180°F (-40 to 82°C)

- **Switch Type**: SPDT

- **Electrical SPDT Switch Ratings**:
  - QV-X1XXXX: 10A @ 125/250 VAC; 0.5A 125 VDC; 10A @ 24 VDC mechanical switch.
  - QV-X2XXXX: 0.1A @ 125 VAC; 0.1A @ 24 VDC mechanical switch.
  - QV-X3XXXX: 2A @ 125 VAC; 2A @ 30 VDC proximity switch.
  - QV-X4XXXX: 5-25 VDC NAMUR sensor.
  - QV-X5XXXX: 10-30 VDC inductive sensor.
  - QV-X6XXXX: 10A @ 125/250 VAC mechanical switch.

- **Lighting Supply Voltage**: 24-28 VDC

- **Enclosure Material**: Polycarbonate housing and conduit.

- **Conduit Entrance**: One 3/4˝ NPT

- **Enclosure Rating**: NEMA 4, 4X. Optional explosion-proof, rated: Class I, Groups A, B, C, D; Class II, Groups F & G; Div. 2.

- **Maximum Altitude**: 2000 m (6560 ft.)

- **Agency Approvals**: CE, CSA, cUL, UL.

**QUICKVIEW® COMPLETE MODEL CHART**

<table>
<thead>
<tr>
<th>Model Number Prefix</th>
<th>1st Code (1st X)</th>
<th>2nd Code (2nd X)</th>
<th>3rd Code (3rd X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>None</td>
<td>No Switches</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>One Switch+</td>
<td>10A Mechanical Snap Switch</td>
<td>28 VDC Lights</td>
</tr>
<tr>
<td>2</td>
<td>Two Switches+</td>
<td>0.1A Mechanical Gold Contacts</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Three Switches+</td>
<td>2A Proximity Reed Switch+</td>
<td>1 Standard (Open Closed)+</td>
</tr>
<tr>
<td>4</td>
<td>Four Switches+</td>
<td>5-25 VDC NAMUR Sensor</td>
<td>2 Upside Down (Open Closed)+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4th Code (4th X)</th>
<th>5th Code (5th X)</th>
<th>6th Code (6th X)</th>
<th>7th Code (7th X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Drive+</td>
<td>Class I, Div. II, Groups A, B, C &amp; D.</td>
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<td>None</td>
</tr>
<tr>
<td>Lever Drive+</td>
<td>Class II, Div. II Groups F &amp; G.</td>
<td>1 Standard (Open Closed)+</td>
<td>None</td>
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<tr>
<td>Namur Drive+</td>
<td></td>
<td></td>
<td>2 Upside Down (Open Closed)+</td>
</tr>
</tbody>
</table>

**Note**: The 1st, 2nd, 3rd and 6th codes can not all be zero.

**+ EX, Explosion-proof option available.**
**ADJUSTMENT PROCEDURE**

1. Using wrench or power, rotate the actuator shaft to extreme clockwise position for direct drive applications. For linear applications, operate actuator to full closed position. All switches should change to their appropriate functions.

2. The cam can be relocated and repositioned by loosening the set screw. To adjust manual cams grasp cam on knurled segment of cam surface. Rotate cam clockwise or counterclockwise to obtain correct actuation point. Feeling or sound of clicks indicates incremental adjustments. Applying pressure on cam in direction of actuation segment of cam surface, and rotating, eliminates incremental adjustments. Stop rotating and release pressure on the cam when it is at proper actuation point; this allows engagement of cam to spline. Check circuit to verify contact at proper point. Rotate the shaft counterclockwise. Repeat all steps above as necessary. Lock cam on spline with set screw provided for additional security.

3. Operate actuator to extreme opposite position to verify correct operation of switch(es). Readjust as required.

4. Replace OPEN/CLOSED indicator drum making sure incoming wires are tucked in so as not to rub against the drum. Replace cover window making sure it lines up correctly with indicator to display the proper indication of valve position. Replace snap-on cover.

**WIRING**

Complete all electrical wiring in accordance with Local and National Codes. Tighten all screws. (Sealed leads are provided from the factory on request).

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**CAUTION** Disconnect supply circuit before opening. Keep unit tightly closed while circuits are alive.

**MAINTENANCE**

The Series QV Rotary Position Indicator/Switch is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.