



Series QV Quick-View® Rotary Position Indicator/Switch

Specifications - Installation and Operating Instructions



U. S. Patent No. 5,357,067, U. K. Patent No. GB2278181B

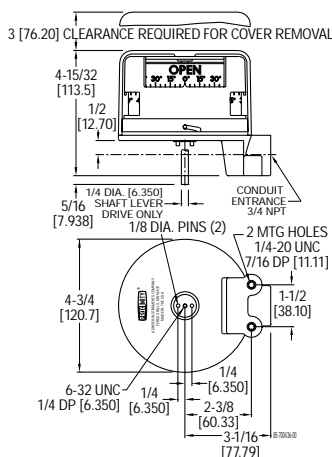
Proximity Series QV Quick-View® Rotary Position Indicators/Switches are produced with up to four individual mechanical or proximity switches. Instructions below include installation, as well as adjustment procedures for direct drive and lever drive models.

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 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.



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 mech. switch.
- QV-X2XXXX: 1A @ 125 VAC; 1A @ 24 VDC mech. switch.
- QV-X3XXXX: 2A @ 125 VAC; 2A @ 30 VDC prox. switch.
- QV-X4XXXX: 5-25 VDC NAMUR sensor.
- QV-X5XXXX: 10-30 VDC INDUCTIVE sensor.
- QV-X6XXXX: 10A 125/250 VAC mech. 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).

QUICK-VIEW® COMPLETE MODEL CHART

| | | | | | | | |
|----|-------------------------------------|--|---|---|---|---|--------------------------------|
| QV | Model Number Prefix | | | | | | |
| | 1st Code (1st X) Number of Switches | | | | | | |
| | 0 | None+ | | | | | |
| | 1 | One Switch+ | | | | | |
| | 2 | Two Switches+ | | | | | |
| | 3 | Three Switches+ | | | | | |
| | 4 | Four Switches+ | | | | | |
| | | 2nd Code (2nd X) Switch Type | | | | | |
| | 0 | No Switches+ | | | | | |
| | 1 | 10A Mechanical Snap Switch | | | | | |
| | 2 | 0.1A Mechanical Gold Contacts | | | | | |
| | 3 | 2A Proximity Reed Switch+ | | | | | |
| | 4 | 5-25 VDC Namur Sensor | | | | | |
| | 5 | 10-30 VDC Inductive Sensor | | | | | |
| | 6 | 10A Mechanical Snap Switch | | | | | |
| | | 3rd Code (3rd X) | | | | | |
| | 0 | | | | | | |
| | | 4th Code (4th X) Driving Style | | | | | |
| | 1 | Direct Drive+ | | | | | |
| | 2 | Lever Drive+ | | | | | |
| | 3 | Namur Drive+ | | | | | |
| | | 5th Code (5th X) Lighting Option | | | | | |
| | 0 | None+ | | | | | |
| | 1 | 28 VDC Lights | | | | | |
| | | 6th Code (6th X) Visual Indication | | | | | |
| | 0 | None | | | | | |
| | 1 | Standard (Open Closed)+ | | | | | |
| | 2 | Upside Down (Open Closed)+ | | | | | |
| | | 7th Code (7th X) Additional Options | | | | | |
| | EX | Class I, Div. II, Groups A, B, C & D. Class II, Div. II Groups F & G. | | | | | |
| QV | 2 | 1 | 0 | 1 | 0 | 1 | - Example Popular Model Number |

+ EX, Explosion-proof option available.

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

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.

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. 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 spine 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).



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.

