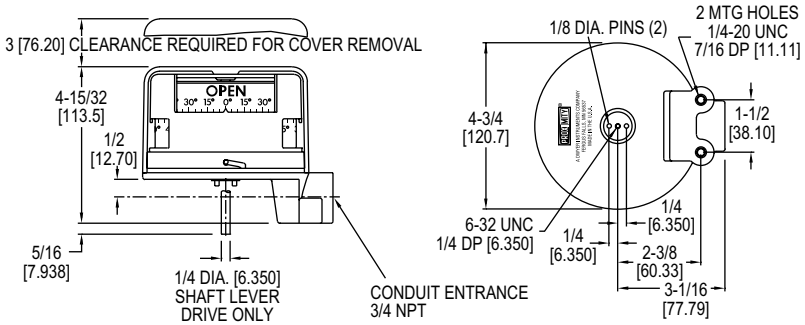
Series QV Quick-View® Rotary Position Indicator/Switch

Specifications - Installation and Operating Instructions



Proximity **Series QV Quick-View® Rotary Position Indicator/Switch** is 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

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: 0.1A @ 125 VAC; 0.1A @ 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.
Max. Altitude: 2000 m (6560 ft).
Agency Approvals: CE, CSA, cULus.

MODEL CHART

Example	QV	-2	1	01	0	1		QV-210101
Series	QV							Quick-View® valve position indicator/switch
Number of Switches		0 1 2 3 4						None* One* Two* Three* Four*
Switch Type			0 1 2 3 4 5 6					No switches* 10A mechanical snap switch 1A mechanical gold contacts 2A Proximity reed switch* 5-25 VDC namur sensor 10-30 VDC inductive sensor 10A mechanical snap switch
Driving Style				01 02 03				Direct* Lever* Namur*
Lighting Option					0 1			None* 24-28 VDC bright white LED's
Visual Indication						0 1 2		None Standard (open closed)* Upside down (open closed)*
Additional Options							EX	Class I, Div. II, Groups A, B, C & D; Class II, Div. II Groups F & G.

*EX, Explosion-proof option available.
Note: The 1st, 2nd, 3rd and 6th codes can not all be zero.

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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 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).

⚠ WARNING **HAZARDOUS LOCATIONS**

- Keep cover tightly closed when in operation.
- De-energize supply circuit before opening.
- To prevent ignition of hazardous locations, replace cover before energizing the electrical circuits.

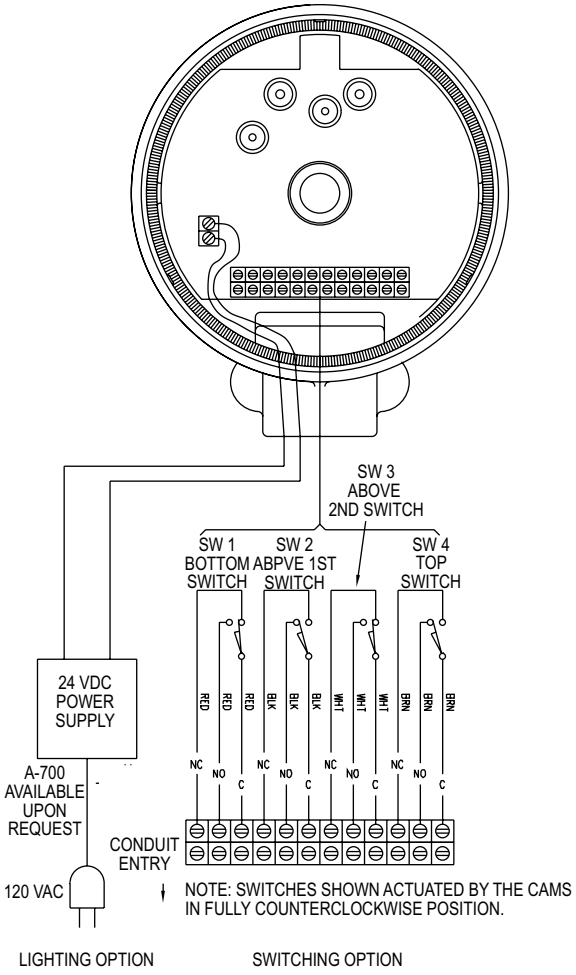
⚠ AVERTISSEMENT **ZONES DANGEREUSES**

- Laisser le couvercle bien fermé lorsque l'unité est en service.
- Couper le circuit d'alimentation avant d'ouvrir.
- Afin d'empêcher toute ignition dans des zones dangereuses, replacer le couvercle avant de mettre les circuits électriques sous tension.

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

This symbol indicates waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.



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