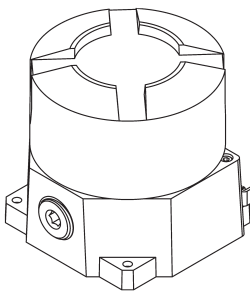


3479/E3479 SERIES EXPLOSION PROOF/FLAMEPROOF NEC/CEC/ATEX AND IECEx CERTIFIED INSTALLATION AND OPERATING INSTRUCTIONS

Installation and operating instructions for Westlock 3479/E3479 series valve position (AccuTrak) and control (Quantum) monitors with proximity switches

AccuTrak 3479 position monitor



CE 2809 Ex II 2 GD

IECEx ETL 17.0010X
ITS 10 ATEX 17081X
Ex db IIC T* Gb Tamb -60°C to +*°C
Ex tb IIIC T*°C Db IP6X Tamb -60°C to +*°C
-60°C to +85°C (T4); -60°C to +75°C (T5);
-60°C to +60°C (T6)
Environmental parameters: 80 kPa (0.8 bar)
to 110 kPa (1.1 bar). Air with normal oxygen
content, typically 21%.

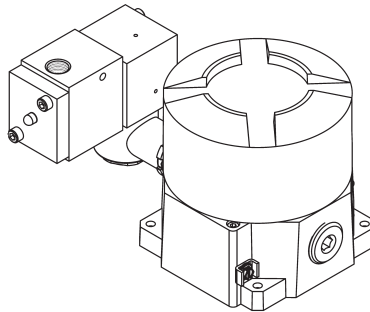
1 PRODUCT DESCRIPTION

The 3479/E3479 series valve position or control monitor provides end of travel indication by the means proximity switch mounted through the wall of the enclosure which are activated by means of a trigger system comprising of two adjustable magnets.

The 3479/E3479 series enclosure is available in two materials, cast aluminum or stainless steel and the construction comprises a housing with a screwed cover.

The housing has the options of up to two proximity switches and up to four cable entries, dependant on model ordered, for connection to an external power source via appropriate certified cable glands. The conduits sizes are M25 x 1.5p, or 3/4"-14 NPT.

Quantum E3479 control monitor



3479: CLASS I GROUPS B, C, D
CLASS II GROUPS E, F & G
CLASS I DIVISION 2; A, B, C & D

E3479: CLASS I GROUPS C & D
CLASS II GROUPS E, F & G

T3C WITH COIL
T6 WITHOUT COIL
TYPE 4



NOTE

Before installation of this product, please ensure that the product and its certification is suitable for the intended application. This product uses medium Nitrile O-rings.

If the equipment is likely to come into contact with aggressive substances, then it is the responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection provided by the equipment is not compromised.

Installation of any cable entry devices, conduit entry devices or blanking devices shall not compromise the degree of ingress protection level IP6X for use in the presence of combustible dusts.

The unit has an ingress protection of IP66/67 and therefore any conduit device fitted must maintain this.



NOTE

These products have been certified with a cable entry temperature rise of 4°C. Ensure that this is taken into consideration when selecting suitable cabling for the ambient temperature in which the product is to be used.



NOTE

These products are not intended to be assembled directly to process pipe work etc that is heated or cooled to temperatures outside of the range as indicated above.



WARNING

Do not open when energized or when an explosive atmosphere is present.



WARNING

Electrostatic hazard, clean only with damp cloth.

3479/E3479 SERIES EXPLOSION PROOF/FLAMEPROOF NEC/CEC/ATEX AND IECEX CERTIFIED INSTALLATION AND OPERATING INSTRUCTIONS

2 MOUNTING INSTRUCTIONS

- 2.1 The 3479/E3479 series linear product can be mounted to many manufacturers of linear actuators with many of them varying in mounting design.
- 2.2 Follow the installation instructions that are supplied with the correct mounting kit to ensure that the 3479/E3479 series enclosure is correctly orientated in relation to the trigger system.



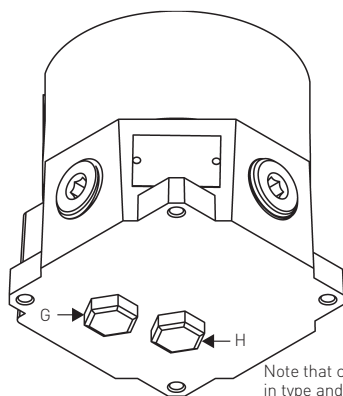
WARNING

Before stroking the actuator to either end position during any part of this mounting procedure, please ensure that the process is safe to do so and that all hands are kept away from moving components.

3 TRIGGER SETTING INSTRUCTIONS

- 3.1 To set the positions of the triggering magnets follow the instructions which are supplied with the mounting kit. This will detail the correct assembly configuration of the trigger system.
- 3.2 When the actuator has been stroked to the desired position, loosen the corresponding magnet retaining set screw. Position the magnet when the proximity switch has changed contact.
- 3.3 Stroke the actuator from one end of stroke to the other several times to check the switch operation. If the trigger magnets require adjustment, repeat steps 3.2 to 3.3.

FIGURE 1
Two switches G and H



Note that cover lock device may vary in type and position for stainless steel or aluminum products

4 FIELD WIRING AND INSTALLATION



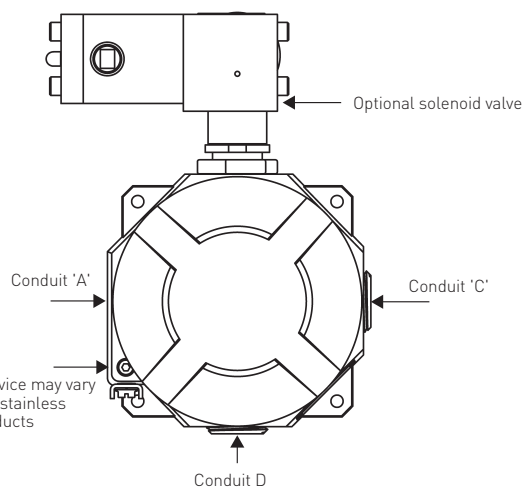
WARNING

The 3479/E3479 series should always be handled with care when the cover is removed and wired to electrical power source. Always engage cover lock again after replacing the unit cover.

Note: before electrical installation, please read and follow the wiring diagram located inside the cover. The electrical ratings can be found on the product identification label.

- 4.1 To release the cover, firstly, loosen the M4 socket head cap screw or remove the bracket, securing screws and washer and keep safe. Finally, unscrew the cover and keep safe. See Figure 2.
- 4.2 Field wiring must be carried out in accordance with site, local and national electrical codes / requirements. This includes special attention to earth bond to the metal enclosure using the internal and external earth points provided.
- 4.3 Installation of this product shall be carried out by competent personnel in accordance with the applicable code of practice such as EN 60079-14 or IEC 60079-14.
- 4.4 The 3479/E3479 unit housing can offer up to three of the following conduit entries: M25 x 1.5p or 3/4" -14 NPT. These entries are detailed on the product identification label found on the product housing. Please see Figure 2 for conduit positions.

FIGURE 2



3479/E3479 SERIES EXPLOSION PROOF/FLAMEPROOF NEC/CEC/ATEX AND IECEX CERTIFIED INSTALLATION AND OPERATING INSTRUCTIONS

- 4.5** The certification applies to equipment without cable glands. When mounting the flameproof enclosure in the hazardous area, only suitably rated IP66/67/68 certified flameproof glands must be used.
- 4.6** All unused cable entries must be plugged with a suitably rated IP66/67/68 ATEX and IECEX certified blanking devices.
IPX8 - 3 bar for 24 hours.
- 4.7** The tables below detail the applicable ambient ranges (Figure 3) and electrical rating for the proximity switch (Figure 4).
- 4.8** Before replacing the enclosure cover, ensure that both of the housing and cover threads are clean and undamaged. Tighten the cover so that the cover and housing are metal to metal. To ensure that the cover position is maintained, re-assemble the cover locking bracket that was removed in step 4.1. For units fitted with locking jackscrew, engage head of jackscrew with cover by backing screw out slightly after tightening cover on.

- 5.3** The certification of this product has been approved based on the material of construction as per the drawings listed in the schedule within this certificate. Any replacement parts that are not made in accordance to the listed drawing will invalidate the approval / certification.
- 5.4** Replacement parts must be purchased through Westlock Controls or via an approved Westlock Controls distributor.

6 OPERATING AND MAINTENANCE INSTRUCTIONS FOR FALCON SOLENOID VALVES (QUANTUM CONTROL MONITORS ONLY)

6.1 General description

6.1.1 The Falcon V solenoid valve incorporates elastomer static seals through which a shaped spool moves and are manufactured for 3 or 5 way operation. 3 way is normally used for pilot control of the other relay valves or for the operation of single acting cylinders. 5 way is normally used to control the action of double acting cylinders. The seal spacer assembly forms individual annular chambers opposite each valve port and the grooved spool either closes or allows flow between adjacent chambers, hence the position of the spool determines which ports are open or closed.

The spool is moved by way of a manually or mechanically operated mechanism normally against a return spring. Operation may be by application or removal of a pilot air supply acting as a pilot piston. This form of control is utilized for electrical actuation where integral solenoid valves control the pilot air supply.

5 PRODUCT REPAIR AND SERVICE

- 5.1** Inspection of this product shall be carried out by suitably trained personnel in accordance with the applicable code of practice such as EN 60079-17 or IEC 60079-17.
- 5.2** In the event of any repairs that may be required such tasks must be carried out by suitably trained / competent personnel in accordance with the applicable code of practice such as EN 60079-19 or IEC 60079-19.

FIGURE 3

Series code	T class	Ambient range
3479/E3479	T6 (80°C)	-60°C to +60°C
3479/E3479	T5 (95°C)	-60°C to +75°C
3479/E3479	T4 (130°C)	-60°C to +85°C

FIGURE 4

Switch designation	Electrical rating
M06	Proximity switch ratings: 3A/120 VAC, 1.5A/240 VAC or 2A/24 VDC

FIGURE 5

Coil electrical ratings
24 VDC 1.8 Watt
120 VAC 1.8 Watt

NOTE

The series code signifies the maximum electrical rating of the product, suitable overloading protection must be provided to prevent these values being exceeded.

3479/E3479 SERIES EXPLOSION PROOF/FLAMEPROOF NEC/CEC/ATEX AND IECE_x CERTIFIED INSTALLATION AND OPERATING INSTRUCTIONS

6.1.2.1 *Optional features - Falcon V*

External Pilot

Connect the 1/8" NPT external pilot port of valve to a separate auxiliary pressure line that is set to supply a pressure signal above the minimum pilot pressure rating. Valve will shift upon energizing solenoid with external pilot signal present. This feature should be used when the controlled pressure supplied to inlet port 1 is below the minimum operating pressure.

See Figure 6A.

6.1.2.2 *Manual locking override*

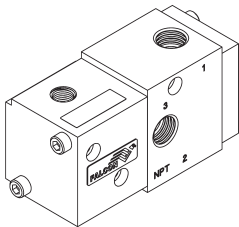
Manually depress palm button and rotate clockwise for maintained condition, must manually disengage to return to original position. See Figure 6B.

6.1.2.3 *Momentary override*

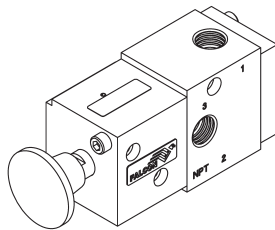
Spring return momentary push type, must hold in to actuate. See Figure 6C

FIGURE 6

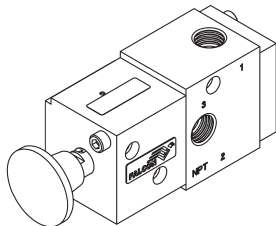
A



B



C



3479/E3479 SERIES EXPLOSION PROOF/FLAMEPROOF NEC/CEC/ATEX AND IECE_x CERTIFIED INSTALLATION AND OPERATING INSTRUCTIONS

6.1.3 Specifications

Operating pressure: 30-120 psig/2.1 - 8.3 bar
 Operating media: Non lubricated filtered air to 20 microns

6.1.4 Field wiring

Complete the electrical wiring in accordance with national and local electrical requirements. The ground wire should be secure under the green screw. Check all screws for tightness.

6.1.5 (Air line) installation considerations

Air mains and lines should be large enough to avoid excessive pressure loss under conditions of maximum flow. Air lines should be installed with as few restrictions as possible if the cost of compressed air is to be kept to a minimum. Sharp turns in piping should be avoided for more efficient air flow and economical air power. It is advisable to pitch the mains in the direction of air flow so that both gravity and air flow will carry the water to traps or water legs located at frequent intervals.

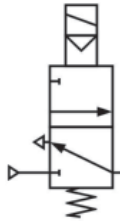
To help in preventing condensed moisture from reaching the point of usage, down pipes should never be taken directly from the bottom of air pipes or mains. Connection should be made at the top of the main and a long radius return bend used.

6.1.6 Air flow

Pipe sizes are normally determined on semi empirical lines, basis for selection being an acceptable pressure drop e.g. not more than 10% of the applied pressure. In sizing pipes, consideration should be given to likely future demands, as a system will be inefficient if the demand outgrows the supply. It is always better to over size mains as this will reduce air velocity and make water separation more effective.

FIGURE 6

Air line designation, 1/4" NPT or BSP air ports for inlet, outlet and exhaust on 1.4 C_v valves.

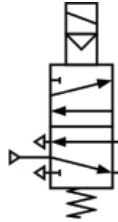


Spring return valve

Description of operation:

Solenoid de-energized - air flows from Outlet Port 2 to Exhaust Port 3.

Solenoid energized - air flows from Inlet Port 1 to Outlet Port 2.



Spring return valve

Description of operation:

Solenoid de-energized - air flows from Inlet Port 1 to Outlet Port 2 and exhausts from Port 4 to Port 5.

Solenoid energized - air flows from Inlet Port 1 to Outlet Port 4 and exhausts from Port 2 to Port 3.

3479/E3479 SERIES EXPLOSION PROOF/FLAMEPROOF NEC/CEC/ATEX AND IECE_x CERTIFIED INSTALLATION AND OPERATING INSTRUCTIONS

6.1.7 Air service equipment

The importance of proper filtration (20 micron) and lubrication of the air supply to pneumatic equipment can never be over-emphasized as a means of decreasing friction and preventing corrosion and wear due to moisture and abrasive solids being present in the air supply.

At higher pressures than recommended, pneumatic equipment can wear excessively with no significant increase in output and compressed air is consequently wasted. There is much to be gained, therefore, from providing pneumatic equipment with serviced air by including suitable air line filters, pressure regulators and lubricants in the installation.

6.1.8 Tubes and fittings

The use of copper, stainless steel, nylon or polyethylene tube is recommended for piping up air circuits and equipment. As a general rule, pipe threaded fittings should not be assembled to a specific torque because the torque required for a reliable joint varies with thread quality, port and fitting materials, sealant used, and other factors. The suggested method of assembling pipe threaded connections is to assemble them finger tight and then wrench tighten further to a specified number of turns from finger tight.

The assembly procedure given below is for reference only, the fitting should not be over tightened for this will lead to distortion and most likely, complete valve failure.

1. Inspect port and connectors to ensure that the threads on both are free of dirt, burrs and excessive nicks.
2. Apply sealant/lubricant or Teflon tape to the male pipe threads. With any sealant tape, the first one or two threads should be left uncovered to avoid system contamination.
3. Screw the connector into the port to the finger tight position.
4. Wrench tighten the connector approximately 1-2 turns (to seal) from finger tight. again this is only reference - the fitting should NOT be over tightened

Maintenance

Routine maintenance is usually confined to the periodic replenishment of Molykote 55 lubricant or equivalent to spool and spring.

Release Date
Initial release: 11/12/19

Translations

Where translated the copy is taken from the original English document TECH-548-EN-05082-EN as checked by the relevant notified certification body and therefore the original English document will prevail. No rights or liability can be derived from any translation.

Crane Co., and its subsidiaries cannot accept responsibility for possible errors in catalogues, brochures, other printed materials, and website information. Crane Co. reserves the right to alter its products without notice, including products already on order provided that such alteration can be made without changes being necessary in specifications already agreed. All trademarks in this material are the property of the Crane Co. or its subsidiaries. The Crane and Crane brands logotype (WESTLOCK CONTROLS®) are registered trademarks of Crane Co. All rights reserved.

WESTLOCK CONTROLS

Head Office
280 N. Midland Avenue, Ste 258
Saddle Brook, NJ 07663
United States

USA Europe Asia
+1 201 794 7650 +44 (0)1892 516277 +65 6266 4535

westlockcontrols.com



WARNING

This symbol warns the user of possible danger. Failure to observe this warning may lead to personal injury or death and/or severe damage to equipment.



ATTENTION

This symbol identifies information about operating the equipment in a particular manner that may damage it or result in a system failure. Failure to observe this warning can lead to total failure of the equipment or any other connected equipment.



NOTE

This symbol draws attention to information that is essential for understanding the operation and/or features of the equipment.