



Supervisory Switch for Outside Screw and Yoke Valve

Installation Guide



Features

- All parts have corrosion resistant finishes
- -40°C to 60°C operating temperature range
- Two conduit entrances
- Adjustable length trip rod
- Three position switch detects tampering and valve closure
- Fine adjustment feature for fast, easy installation
- One or two SPDT contact models (-1,-2,-3)

Description

LIFECO Supervisory Switch is used to monitor the open position of an OS&Y (outside screw and yoke) type gate valve. These switches mount conveniently to most OS&Y valves ranging in size from 2" to 24" (50mm to 600mm). The cover is held in place by two tamper resistant screws that require a special tool to remove. The tool is furnished with each device.

Technical Specifications

Type	Supervisory Switch for Outside Screw and Yoke Valve
Weight	0.6 kg
Enclosure	- Cover: Die Cast Finish: Red Powder Coat - Base: Die Cast - All parts have corrosion resistant finishes
Cover Tamper	- Tamper Resistant Screws - Optional Cover Tamper Switch Available - 3Amps / 5 Amps at 125/250VAC - Cover tamper switch with two leads and Insulating Plate 5KV
Contact Ratings	- LF-SSOSY-1: One Set of SPDT - LF-SSOSY-2: Two Sets of SPDT - LF-SSOSY-3: Two Sets of SPDT and Cover Tamper Switch - 10 Amps at 125/250 VAC - 2.5 Amps at 30VDC Resistive
Environmental Limitations	- -40°C to 60°C - Indoor or Outdoor Use - IP:67
Conduit Entrances	One Knockouts and one hole for 1/2" conduit provided
Service Use	NFPA 13, 13D, 13R, 72

General Instructions

The operation of the Supervisory Switch and its associated protective monitoring system shall be inspected, tested, and maintained in accordance with all applicable local and national codes and standards and/or the Authority Having Jurisdiction (manufacturer recommends quarterly or more frequently). A minimum test shall consist of turning the valve wheel towards the closed position.

The Supervisory Switch shall operate within the first two revolutions of the wheel. Fully close the valve and ensure that the Supervisory Switch does not restore. Fully open the valve and ensure that the Supervisory Switch restores to normal only when the valve is fully opened.

Theory of Operation

The Supervisory Switch is a 3 position switch. The center position is the normal installation position. Normal is when the switch is installed on the OS&Y valve, the valve is fully open and the trip rod of the Supervisory Switch is in the groove of the valve stem. Closing the valve causes the trip rod to ride up out of the groove and activates the switches. Removing the Supervisory Switch from the valve causes the spring to pull the trip rod in the other direction and activates the switches.

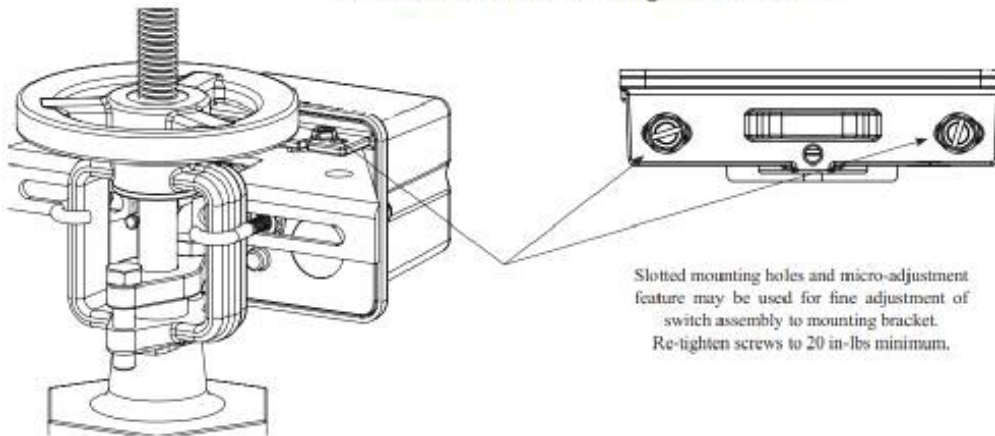
Installation

No. 1

a. With the valve in the FULL OPEN position, locate the Supervisory Switch across the valve yoke as far as possible from the valve gland so that the spring loaded trip rod of the Supervisory Switch is pulled against the non threaded portion of the valve stem. Position the Supervisory Switch with the bracket near the hand wheel as shown in Fig. 6 if possible to avoid creating a pinch point between the wheel and the Supervisory Switch.

b. Loosen the locking screw that holds the trip rod in place and adjust the rod length. When adjusted properly, the rod should extend past the valve screw, but not so far that it contacts the clamp bar. Tighten the locking screw to 5 in-lbs minimum to hold the trip rod in place and properly seal the enclosure.

Installation - 1/2" Through 2 1/2" Sizes



NOTE: If trip rod length is excessive, loosen the locking screw and remove the trip rod from the trip lever. Using pliers, break off the one (1) inch long notched section. Reinstall trip rod and repeat Step 3 procedure.

c. Mount the Supervisory Switch loosely with the carriage bolts and clamp bar supplied. On valves with limited clearance use J-hooks supplied instead of the carriage bolts and clamp bar to mount the Supervisory Switch.

Breaking Excessive Rod Length

d. Deburr and smooth the edges of the groove to prevent damage to the valve packing and to allow the trip rod to move easily in and out of the groove as the valve is operated.

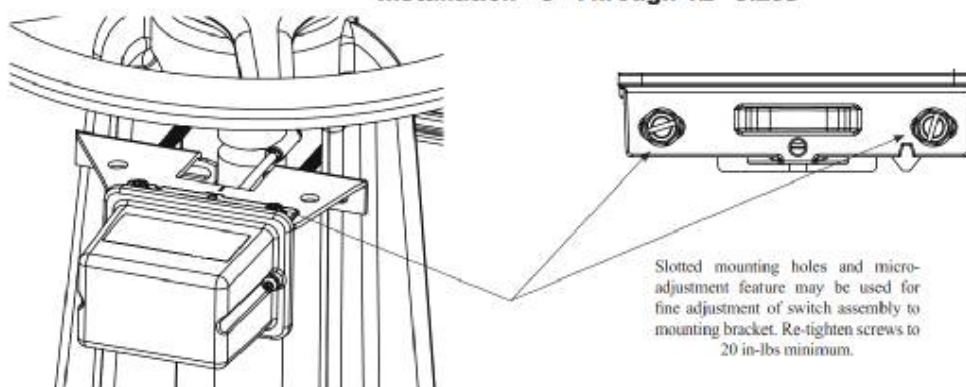


e. Final adjustment can be made by slightly loosening the two screws on the bracket and using the fine adjustment feature (see Fig. 5). The adjustment is correct when the plungers on the switches are depressed by the actuator and there is no continuity between the COM and NO terminals on the switches.

f. Tighten the adjustment screws and all mounting hardware securely (20 in-lbs minimum). Check to insure that the rod moves out of the groove easily and that the switches activate within two turns when the valve is operated from the FULL OPEN towards the CLOSED position.

g. Reinstall the cover and tighten the cover screws to 15 in-lbs minimum to properly seal the enclosure.

Installation - 3" Through 12" Sizes



No.2

a. With the valve in the FULL OPEN position, locate the Supervisory Switch across the valve yoke as far from the valve gland as possible so that the spring loaded trip rod of the Supervisory Switch is pulled against the non threaded portion of the valve stem. Position the Supervisory Switch with the bracket near the handwheel. if possible to avoid creating a pinch point between the wheel and the Supervisory Switch.

b. Mount the Supervisory Switch loosely with the carriage bolts and clamp bar supplied

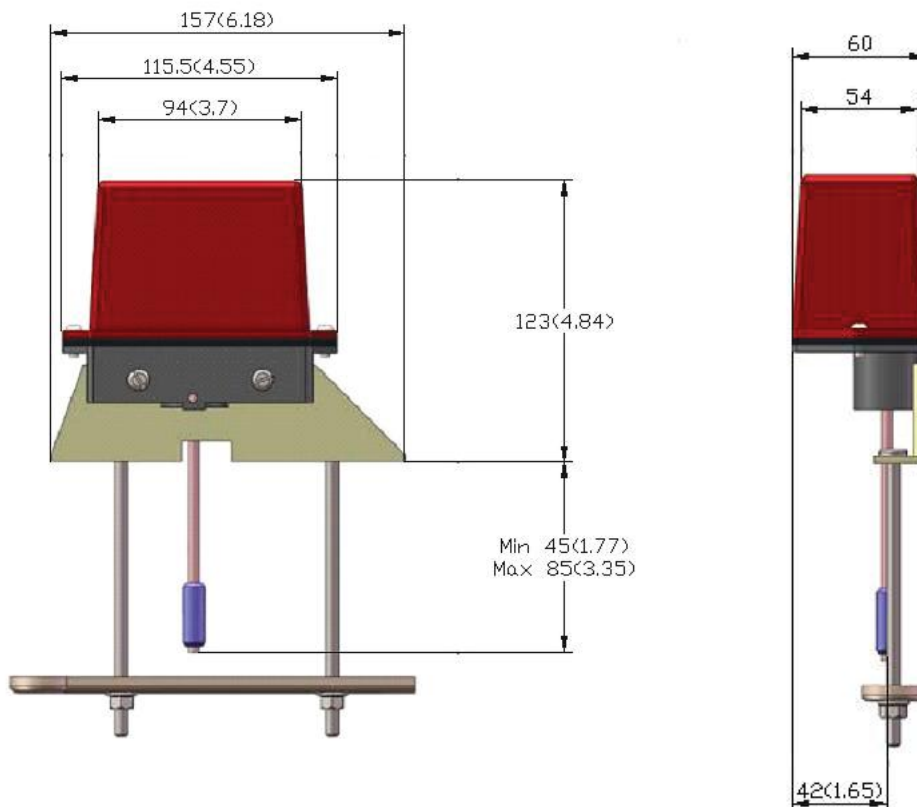
c. Loosen the locking screw that holds the trip rod in place and adjust the rod length. When adjusted properly, the rod should extend past the valve screw, but not so far that it contacts the clamp bar. Tighten the locking screw to 5 in-lbs minimum to hold the trip rod in place and properly seal the enclosure.

d. The remaining steps such as No.1.

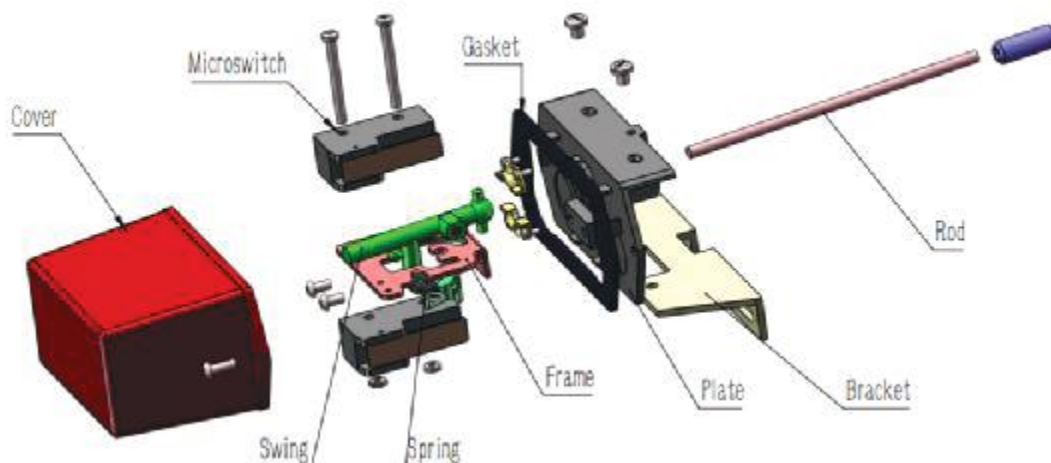
No.3

If installed in 14 "and above, Please indicate special when buy, we can customize according to the actual size in the attachment.

Dimensions

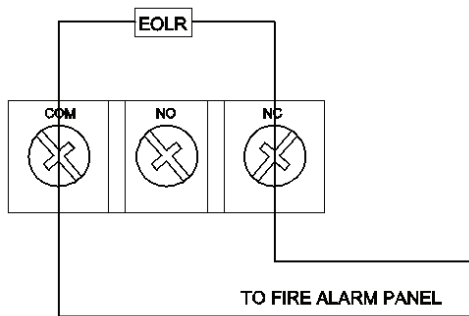


Structural Drawing



Typical Electrical Connections (see fig 1)

fig 1



*WHEN OS&Y GATE VALVE NORMALLY OPEN (see fig 2)

fig 2

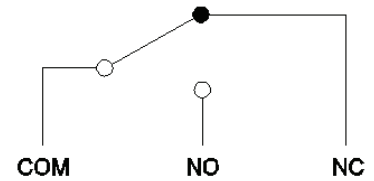
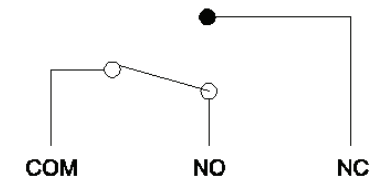


fig 3

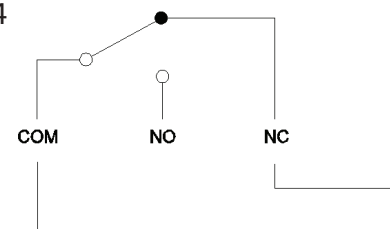


*WHEN OS&Y GATE VALVE CLOSE OR REMOVE THE SUPERVISORY SWITCH(see fig 3)

COVER TAMPER SWITCH

WHEN REMOVE THE COVER COM TO NC (see fig 4)

fig 4



Cover tamper switch with three leads.



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