

**BLAZE**

Supervisory Switch

Model : BT-OSY-1

Description:

The BT OSY-1 is a supervisory switch designed to monitor whether an OS&Y gate valve is open or closed. Mount the switch on the valve so that it does not block valve movement. The switch must trigger within two full turns of the handwheel, or before the stem moves one-fifth of its total travel distance. The unit features one SPDT contact and a cover secured by tamper-proof screws (special key included). It is FM approved for both indoor and outdoor installations.

Specifications :

Temperature Range	4 °C to 60 °C (40 °F to 140 °F)
Electrical Ratings	One set of SPDT (Form C) 10.1 Amps at 125/250 VAC 2.0 Amps at 24 VDC
Enclosure Rating	NEMA 4- suitable for indoor / outdoor use
Cover Material	Aluminum Die-casting.
Approvals	FM 3135 Approved
Weight	0.82 Kg



Installation:

The OSY-1 supervisory switch is suitable for OS&Y valves between 1/2" and 12" in diameter. If the switch is installed with the actuator pointing upwards, water may enter the housing. Therefore, do NOT install the OSY switch with its actuating lever pointing upwards. The OSY-1 supervisory switch features an internal earth screw near the conduit entry for applications requiring earthing. For narrow OS&Y valves, install the switch with the mounting bolts inside the yoke. If the yoke is too narrow for this arrangement, position the bolts on the outside of the yoke.

Limited Clearance Valves (J-Bolts Kit)

BT OSY-1 switch mounting bracket fits most OS&Y valves used in fire protection systems. However, some valves, especially those under 1-1/2" in diameter, have irregularly shaped yokes or limited clearance. In these cases, the standard clamping bar cannot be installed correctly, or it may cause the valve to bind. If this occurs, use J-bolts to attach the OSY switch to the valve. Order the OSYRK J-bolt kit separately.

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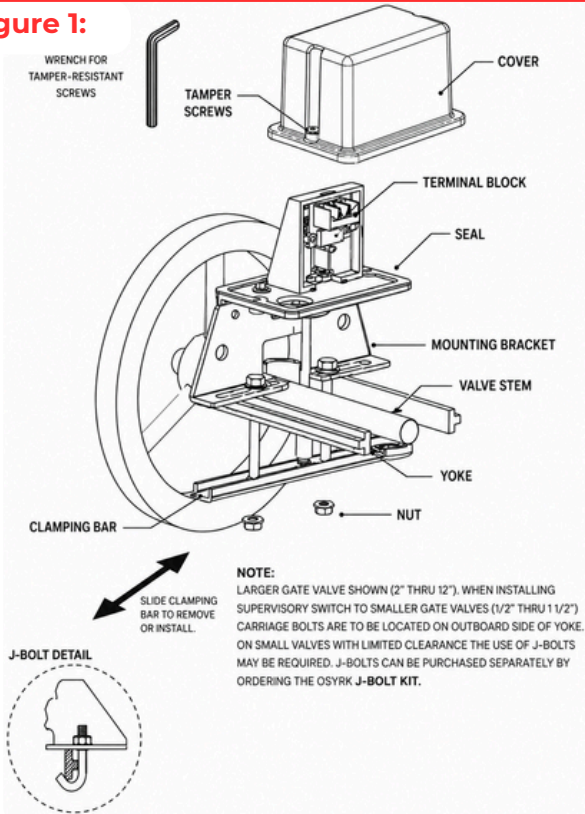
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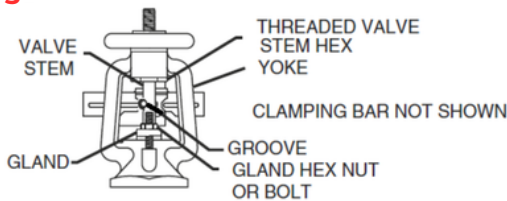
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Model : BT-OSY-1**Figure 1:**

Installation Instructions:

Perform step 1 only on valves 1-1/2" in diameter and smaller. If installing the switch on a valve larger than 1-1/2" in diameter, proceed directly to step 2.

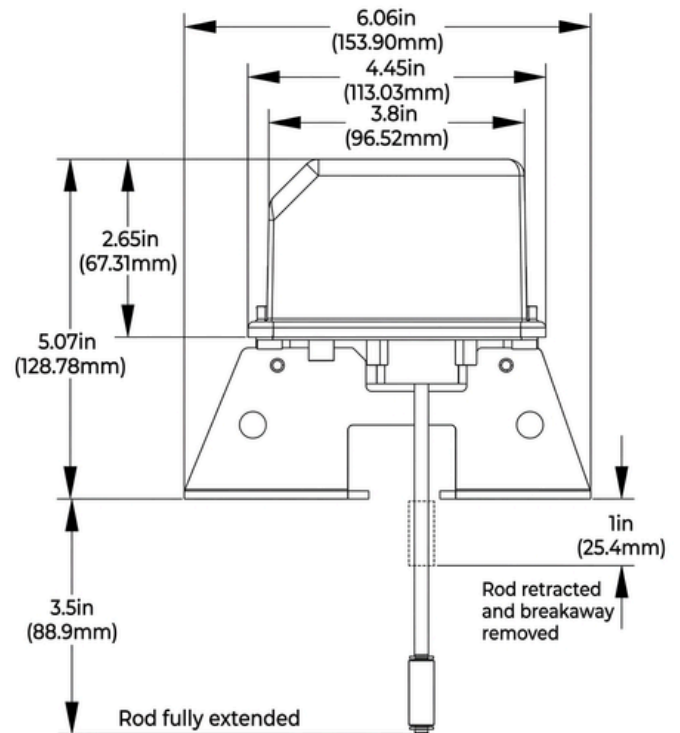
Figure 2:

Remove and discard the two C-clips and roller from the actuating lever.

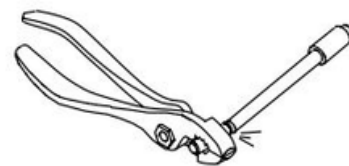
Fully open the valve. Remove the OSY-1 supervisory switch from the packaging and adjust the retaining nuts to ensure enough bolt length for the valve yoke thickness. Position the switch on the valve with the bolts on the inside (preferred) or outside of the yoke, depending on clearance. Position the OSY-1 as far as possible from the valve gland, ensuring the actuating lever contacts the unthreaded section of the valve stem. (If the valve stem is already grooved, proceed directly to step 6). Mount the OSY-1 loosely using the supplied carriage bolts and clamp bar.

3. Loosen the locking screw on the trip rod and adjust its length. Ensure the rod extends past the valve stem without contacting the clamp bar. Tighten the locking screw to hold the trip rod in place and seal the enclosure.

- **NOTE :** If the trip rod is too long, loosen the locking screw and remove the rod from the trip lever. Break off a 25 mm (one inch) section using pliers, as shown in Figure 3 and Figure 4. Reinstall the rod and repeat step 3.
4. Mark the contact point between the actuating lever and the valve stem.
5. Loosen the nuts, slide the clamping bar, and remove the OSY-1 from the valve.



Breaking Excessive Rod Length

Figure 4:

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- **(a) Valves 1-1/2" (40 mm) in diameter and smaller:** Use a 1/4" (6 mm) parallel round file to cut a groove at least 1/8" (3 mm) deep, centred on the mark on the valve stem. Deburr and smooth the edges of the groove to prevent damage to the valve packing and to ensure the trip rod moves smoothly.
 - **(b) Valves larger than 1-1/2" (40 mm) in diameter:** Use a 3/8" (10 mm) or 1/2" (13 mm) parallel round file to cut a groove at least 1/8" (3 mm) deep, centred on the mark on the valve stem. Deburr and smooth the edges of the groove to prevent damage to the valve packing and to ensure the trip rod moves smoothly.
6. Mount the switch loosely with the actuating lever centred in the groove. Slide the open end of the clamping bar onto the bolts, as shown in Figure 1.
 7. Loosen the screw, slide the lever in or out as required, and retighten the screw to adjust the lever length.
 8. Position the switch so that the micro-switch is depressed (the COM and NC terminal circuit is open) when the actuating lever sits in the groove with the valve fully open. The COM-to-NC circuit must close within two turns when the valve is operated from the fully open towards the closed position.
 9. Tighten the nuts securely with a spanner and check the operation of the OSY-1 as described in step 8. If necessary, reposition the switch and test it again.
 10. Wire the supervisory switch as shown in Figure 5.
 11. Fix the OSY-1 cover and tighten the tamper-resistant screws using the special spanner provided. Store this spanner in a secure location.
 12. Test the operation by closing the valve by two full turns. The circuit between COM and NC must close during this procedure. If it does not, readjust the switch and actuator position until it activates correctly.

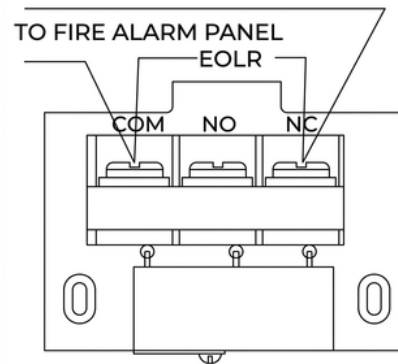
Testing & Maintenance

Test the operation of all supervisory switches before placing them into service and at least twice a year (semiannually), or as required by the local authority having jurisdiction.

NOTE :

Inform the relevant authorities that the supervisory switches are undergoing maintenance and will be temporarily out of service. Disable the system or zone undergoing testing to prevent false alarms.

Field Typical Electrical Connections:

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