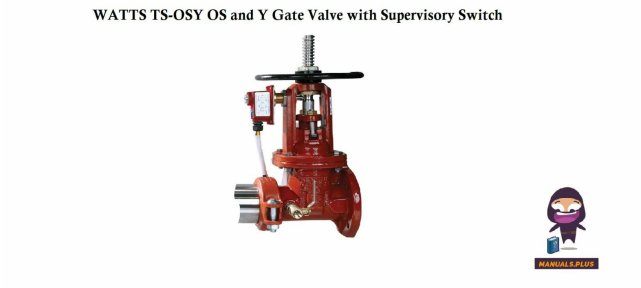


WATTS TS-OSY OS and Y Gate Valve with Supervisory Switch Installation Guide

Contents

1 WATTS TS-OSY OS and Y Gate Valve with Supervisory Switch
2 Precautions
3 Gate Valve Installation
4 Operation, Maintenance And Troubleshooting
5 Supervisory Switch Installation
6 Limited Warranty
7 Contacts
8 Documents / Resources
8.1 References

WATTS TS-OSY OS and Y Gate Valve with Supervisory Switch

Precautions

Warning: Read this Manual BEFORE using this equipment.

Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment.
Keep this Manual for future reference.

Caution: Before wiring supervisory switches in fire protection systems, refer to the following standards:

- **NFPA 13:** Standard for the Installation of Sprinkler Systems
- **NFPA 25:** Inspection, Testing, Maintenance of Water-based Fire Protection Systems
- **NFPA 70:** National Electrical Code
- **NFPA 72:** National Fire Alarm Code
- CSA C22.1 NO.1 Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations Section 32
- CAN/ULC-S524, Standard for Installation of Fire Alarm Systems

Warning

- Metallic conduit required by NEC for proper grounding conduit joint must be sealed with a conductive sealant.
- Install switch in accordance with National Electrical Code and/or local ordinances.
- Wiring methods shall be in accordance with CSA C22.1, Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations, Section 32 and CAN/ULC-S524, Standard for Installation of Fire Alarm Systems Assure All Devices Are Properly Grounded.

Series Gate Valve TS-OSY is used in fire protection applications for fire main shutoff. The operation of the gate valve is unlike that of a double disc gate valve. In normal circumstances less operating torque is required as the resilient wedge valve just closes, or upon opening. The supervisory switch mounted to the gate valve alerts when the water supply to the sprinkler system is tampered with or being shut off. The switch assembly consists of two SPDT switches and is designed to send a signal when the valve is closed or when the cover is removed. When the valve is fully open, the switch is in the neutral position. Closing the valve causes the switch rod to come out of the valve stem groove, activating the signal. Removing the cover causes loss of contact with the switch rod, activating the signal.

Gate Valve Installation

Warning

Installation of valves should be performed by experienced installers. Valves should never be used as structural supports and movement into place. Valves are heavy and may include accessories or bolted pieces. Handle with caution.

Notice: The valve and the line must be clear of debris before the valve is installed. Clear both of all foreign material. Failure to flush the line may cause the valve to become fouled and require disassembly and cleaning.

Before installation, complete the following steps:

1. Wipe away any dirt and grit from the inside of the valve.
2. Flush the line completely.
3. Check the operation of the valve, fully open to fully closed, when installing the valve.
4. Cover the valve with burlap or similar material while backfilling to protect the coating after installing the valve.
5. Open the valve about five (5) turns and allow the flow an opportunity to flush any trash and debris from the line.

RECOMMENDATION

- Install valves into the piping system in accordance with AWWA M-11 and NFPA guidelines to prevent any undue piping stress, deflection, or bending that may affect the performance of the valve.

Guidelines

- Before installation, check that valve end joints are clean. Check for damage to the valve. Open and close the valve to assure proper operation. Close the valve before placing it in trench or line.
- Handle the valve carefully. Do not drop into position. Do not sling through the port opening.
- Prepare pipe ends according to manufacturer’s instructions. Install the valve by proper methods according to end joint type. All piping should be properly supported to avoid line stress on the valve. Do not use the valve as a jack to force a pipeline into position.
- Provide a valve box or vault for each valve used in buried service application. Install these so that no load is

transferred to the valve.

- Before pressurization of the pipeline and valve, inspect all pressure containing bolting (cover, follower plate, end connection) for adequate tightness (usually 90 ft lb).
- Pressurize buried valves before backfilling.
- With the valve in open position, thoroughly clean the entire system by flushing. Debris in the valve could prevent valve from closing or possibly damage the resilient material on the wedge.
- Upon completion of the installation, create a permanent record that includes gate valve location, size, type, date of installation, number of turns to open, direction of opening, and any other special or relevant information.

Operation, Maintenance And Troubleshooting

Operation

In normal circumstances less operating torque is required as the resilient wedge valve just closes, or on opening. Complete the number of turns by valve size, as specified in the following table.

Turns to Fully Open Gate Valve

Call customer service if you need assistance with technical details.

SIZE	NUMBER OF TURNS
21⁄2″	8
3″	10
4″	131⁄2
6″	191⁄2
8″	251⁄2
10″	311⁄2
12″	373⁄4

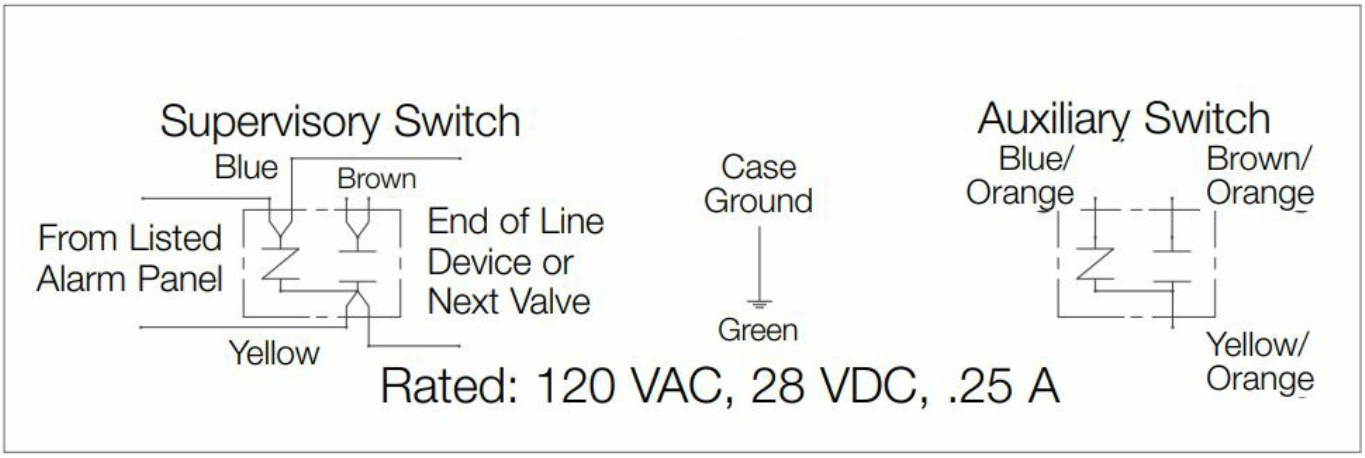
Maintenance

- Gate Valve TS-OSY requires no routine maintenance except that the valve must be operated at least once a year to prevent stem binding as a result of rust and encrustation.
- If the valve has not been abused, the stem seal/packing may be the only items to ever be replaced. Occasionally, a wedge may need to be replaced, but such a replacement is not considered normal maintenance.

Troubleshooting

PROBLEM	CAUSE	SOLUTION
Joint leakage	Bolt tension relaxing	Tighten bolts
	Foreign material caught in seat	Operate valve to flush out debris
Seat leakage	Seat is dirty/corroded	Flush, or disassemble and clean
	Seat is damaged	Inspect then repair or replace if necessary
	Bolts loose	Tighten bolts
Leak past stem	Gate valve packing worn or damaged	Inspect then replace if necessary

Supervisory Switch Installation



Wire the supervisory switch to a fire alarm control panel in accordance with the schematic diagram. Verify that the switch is operating as intended before commissioning the product. Proper operation must be assured. If adjustment is required to comply with NFPA standards and local ordinances, follow the procedure for switch replacement, starting at step 7. Follow all steps of the field instructions when rotating or replacing the switch.

Tools Requirement

For field rotation and replacement of the switch:

- 9⁄16″ socket with extension
- 9⁄16″ open end wrench
- 13⁄4″ open end wrench

Wiring Notes

- Connection to power limited circuitry is required.
- The auxiliary switch is for supplemental use only and shall not be used for fire alarm signaling applications.
- Switches are checked at the factory. Checking the switches after field installation is strongly advised. Check

continuity with the valve fully open. The switches activate within two (2) turns from open.

As with any product containing an electrical component, care should be taken to guard against the potential risk of fire, electric shock, and injury to persons.

Field Service of Switch

- Field repair by anyone other than authorized (factory) personnel is not recommended. Consult factory before attempting any repairs. Tamper resistant tools are required. Limited internal parts are available.
- All replacement parts must be obtained from the manufacturer to ensure proper operation of the valve and to maintain agency approval of the device.

Field Rotation of Switch

1. Loosen the nut against the yoke with a 1¾" open-end wrench.
2. Rotate the switch to the desired position and tighten the nut.
3. Perform steps 7 to 10 in the following procedure to assure the switch operates properly.

Field Replacement of Switch

1. Close the valve.
2. Remove the wheel nut with an appropriate-sized open-end wrench.
3. Remove the handwheel.
4. Screw the switch unit into the tapped hole until the bushing is flush with the inside of the yoke.
5. Tighten the nut against the yoke with an open end wrench to 50 ft-lb minimum.
6. Reinstall the handwheel.
7. Open the valve until the switch rod is halfway into the groove.
8. Remove the security plug.
9. Using a 9⁄16″ socket with extension, loosen the adjustment nut until it depresses the switch tab; counteract rotation of the rod with a 9⁄16″ open end wrench. Listen for two clicks. At this point there should be continuity through the brown and yellow leads. The brown with orange stripe and yellow with orange stripe leads must have continuity as well.
10. Open the valve fully, so the rod is seated in the groove. At this point the blue to yellow leads and blue/orange to yellow/orange leads must have continuity. If both switches are not in unison, further adjustments must be made.

Notice: The switch must meet this specific installation so that closing 20% of the valve or making a maximum of four (4) revolutions causes the switch to change status. Verify this after setting the limits.

Limited Warranty

Ames Fire & Waterworks (the "Company") warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge.

THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY THE COMPANY WITH RESPECT TO THE PRODUCT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS

OR IMPLIED. THE COMPANY HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The remedy described in the first paragraph of this warranty shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication, improper installation or improper maintenance or alteration of the product.

Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights. SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL SHIPMENT.

Contacts

- **USA: Backflow**
  - **T:** (978) 689-6066
  - **F:** (978) 975-8350
  - AmesFireWater.com
- **USA Control Valves**
  - **T:** (713) 943-0688
  - **F:** (713) 944-9445
  - AmesFireWater.com
- **Canada**
  - **T:** (888) 208-8927
  - **F:** (905) 481-2316
  - AmesFireWater.ca
- **Latin America**
  - **T:** (52) 55-4122-0138
  - AmesFireWater.com

© 2023 Watts

Documents / Resources

	**WATTS TS-OSY OS and Y Gate Valve with Supervisory Switch** [pdf] Installation Guide TS-OSY, TS-OSY OS and Y Gate Valve with Supervisory Switch, OS and Y Gate Valve with Supervisory Switch, Gate Valve with Supervisory Switch, Valve with Supervisory Switch, Supervisory Switch, Switch

References

- **User Manual**

Manuals+, **Privacy Policy**

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.