SUPERVISORY1 SWITCH

Model OSYSU-1 / OSYSU-2

Explosion proof supervisory pressure switch

Product Description

The tamper switch model OSYSU is used to monitor the open position of an OS&Y (outside screw and yoke) type gate valve. This device is available in two models; the OSYSU-1, containing one set of SPDT (Form C) contacts and the OSYSU-2, containing two sets of SPDT (Form C) contacts. They will mount on some valves as small as ½" (12,5 mm).

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 and should be left with the building owner or responsible party. Replacement or additional cover screws and hex keys are available.

Technical Data

Model	OSYSY-1: One set of SPDT contact (Form C) OSYSU-2: Two sets of SPDT contact (Form C)
Dimensions	6.19" L x 2.25" W x 5.88" H 15.7cm L x 5.7cm W x 14.6cm H
Weight	1.6 lbs (0.73 kg)
Enclosure	Cover: Die-cast Finish: Red Spatter Enamel Base: Die cast zinc All parts have corrosion resistant finishes
Cover tamper	Tamper resistant screws Optional cover tamper switch available
Contact ratings	15 Amps at 125/250VAC 2.5 Amps at 30VDC resistive
Environmental limitations	-40ºF tot 140ºF (-40ºC to 60ºC) NEMA 4 and NEMA 6P Enclosure (IP67) Indoor or outdoor use (Not for use in hazardous locations)
Wiring inlet	2 Knockouts for ½" conduit provided
Service use	Automatic sprinkler NFPA-13 One or two family dwelling NFPA-13D Residential occupancy up to four stories NFPA-13R National Fire Alarm Code NFPA-72

Operation

The OSYSU 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 OSYSU 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 OSYSU from the valve causes the spring to pull the trip rod in the other direction and activates the switches.



cULus Listed.

FM Approved

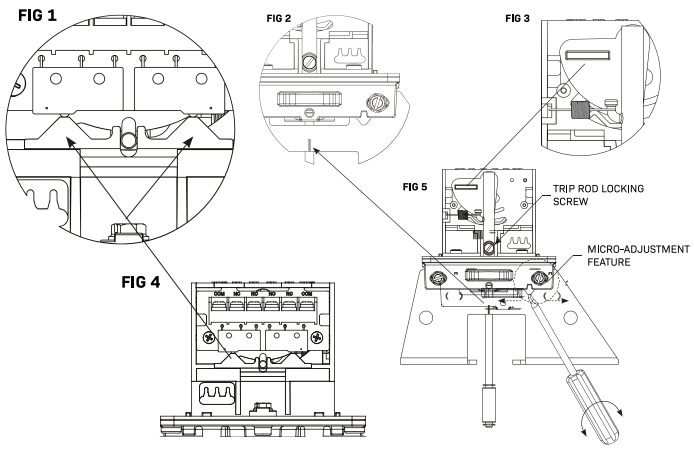
CE Approved

Visual Switch status Indication

There are 3 visual indicators to determine the status of the switches.

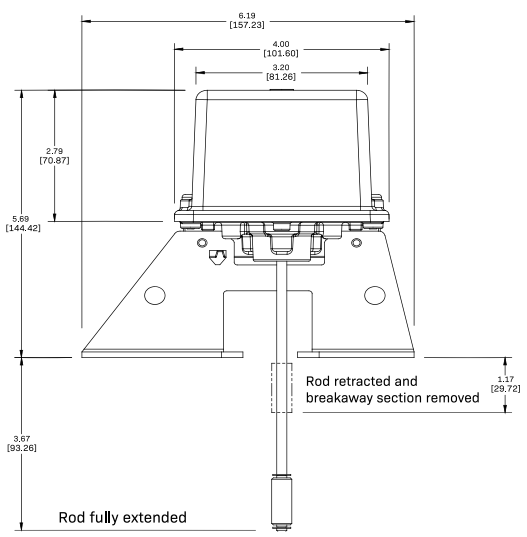
- **Fig 1:** the actuator button of the micro switches are on the raised section of the switch actuator.
- **Fig 2:** the trip rod is perpendicular to the base and lined up with the alignment mark on the mounting bracket.
- **Fig 3:** the white visual indicator is visible through the window on the back of the switch actuator.

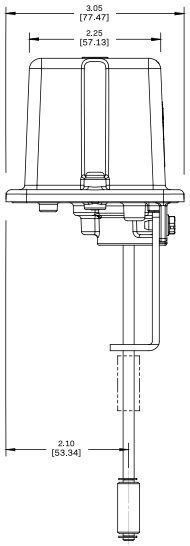
A final test is to meter the contacts marked COM and N.O. to ensure they are an open circuit when the valve is open and that they close and have continuity within 2 revolutions of turning the valve handwheel towards the closed position and the contacts remain closed as the valve is completely closed and until the valve is completely opened when the trip rod drops back into the groove in the valve stem.

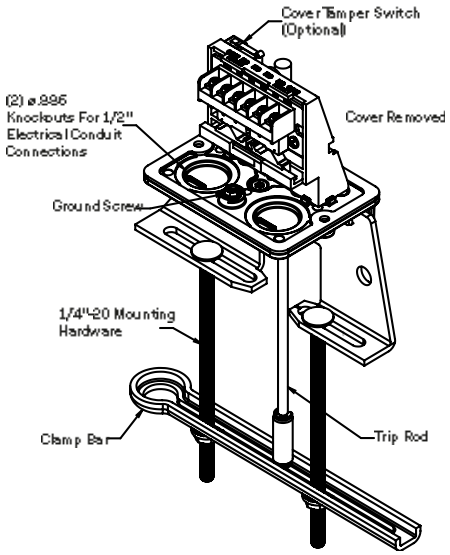


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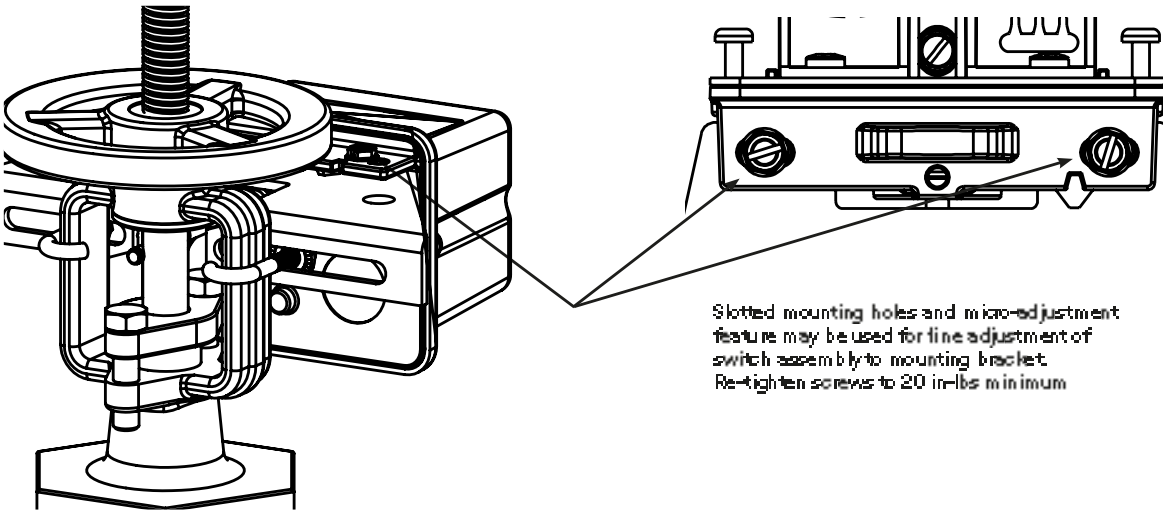
Dimensions







Small Valve Installation: ½" Through 2 ½" Sizes



NOTE: If the valve stem is pre-grooved at 1/8" minimum depth; proceed to step 7.

1. Remove and discard "E" ring and roller from the trip rod.
2. With the valve in the FULL OPEN position, locate the OSYSU across the valve yoke as far as possible from the valve gland so that the spring loaded trip rod of the OSYSU is pulled against the non threaded portion of the valve stem. Position the OSYSU with the bracket near the handwheel as shown in Fig. 6 if possible to avoid creating a pinch point between the wheel and the OSYSU.
3. Loosen the locking screw that holds the trip rod in place and adjust the rod length (see Fig. 5). 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.

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 (see Fig. 10). Reinstall trip rod and repeat Step 3 procedure.

4. Mount the OSYSU 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 OSYSU.
5. Mark the valve stem at the center of the trip rod.
6. Remove the OSYSU. Utilizing a 3/16" or 1/4" diameter straight file, file a 1/8" minimum depth groove centered on the mark on the valve stem.

NOTE: A groove depth of up to approximately 3/16" can make it easier to install the OSYSU so that it does not restore as it rolls over by the threads of the valve stem.

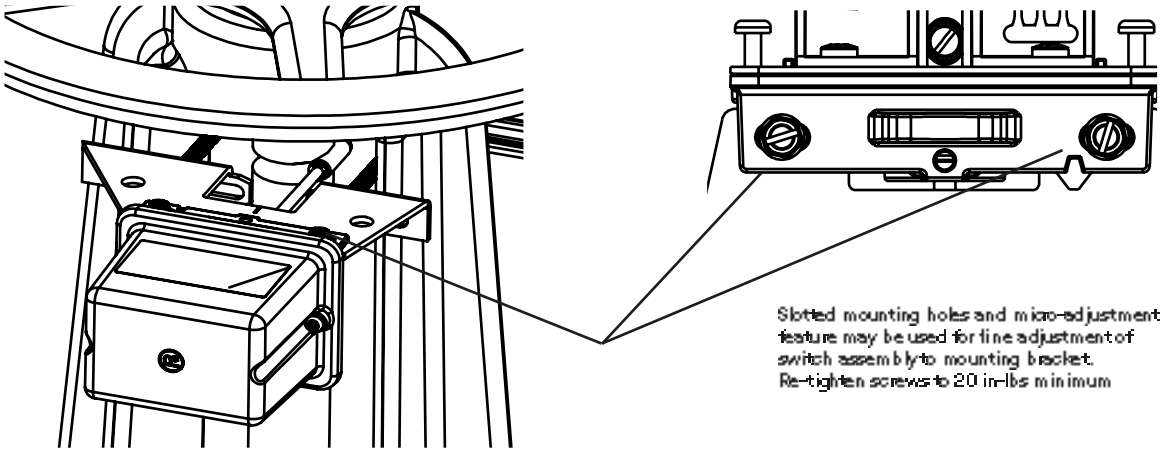
7. Mount the OSYSU on the valve yoke with the spring loaded trip rod of the OSYSU pulled against the valve stem and centered in the groove of the stem. If possible, position the OSYSU with the flat side of the bracket toward the hand wheel, as shown in Fig. 6, to help avoid creating a pinch point between the wheel and OSYSU. When in this preferred mounting position, it is usually best to use the white indicator visible through the window, as illustrated in Fig. 3, to aid in initially locating the OSYSU in the correct position on the yoke. If the unit must be installed inverted with the white indicator no longer easily visible, use the visual indicators of the actuator buttons on the micro-switches, as illustrated in Fig. 1, or the trip rod alignment mark on the bracket, as illustrated in Fig. 2 , to aid in initially locating the OSYSU.
8. 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.
9. 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.

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

CAUTION: Close the valve fully to determine that the stem threads do not activate the switch. The switch being activated by the stem threads could result in a false valve open indication.

Large Valve Installation: 3” Through 12” Sizes



NOTE: If the valve stem is pre-grooved at 1/8” minimum depth; proceed to step 6.

1. With the valve in the FULL OPEN position, locate the OSYSU across the valve yoke as far from the valve gland as possible so that the spring loaded trip rod of the OSYSU is pulled against the non threaded portion of the valve stem. Position the OSYSU with the bracket near the handwheel as shown in Fig. 7 if possible to avoid creating a pinch point between the wheel and the OSYSU.
2. Mount the OSYSU loosely with the carriage bolts and clamp bar supplied.
3. Loosen the locking screw that holds the trip rod in place and adjust the rod length (see Fig. 5). 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.

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 (see Fig. 10). Reinstall trip rod and repeat Step 3 procedure.

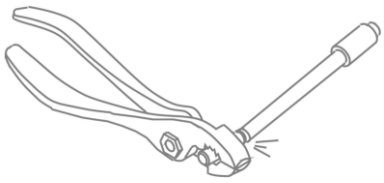
4. Mark the valve stem at the center of the trip rod.
5. Remove the OSYSU. Utilizing a 3/8” or ½” diameter straight file, file a 1/8” minimum depth groove centered on the mark on the valve stem. Deburr and smooth the edges of the groove to prevent damage to the valve packing and to allow the trip rod to move easily in and out of the groove as the valve is operated.

NOTE: A groove depth of up to approximately 3/16” can make it easier to install the OSYSU so that it does not restore as it rolls over by the threads of the valve stem.

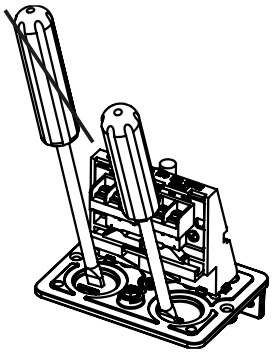
6. Mount the OSYSU on the valve yoke with the spring loaded trip rod of the OSYSU pulled against the valve stem and centered in the groove of the stem. If possible, position the OSYSU with the flat side of the bracket toward the hand wheel, as shown in Fig. 7, to help avoid creating a pinch point between the wheel and OSYSU. When in this preferred mounting position, it is usually best to use the white indicator visible through the window, as illustrated in Fig. 3, to aid in initially locating the OSYSU in the correct position on the yoke. If the unit must be installed inverted with the white indicator no longer easily visible, use the visual indicators of the actuator buttons on the micro-switches, as illustrated in Fig. 1, or the trip rod alignment mark on the bracket, as illustrated in Fig. 2 , to aid in initially locating the OSYSU.
7. 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.
8. Tighten the adjustment screws and mounting hardware securely (minimum 20 in-lbs). 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.
9. Reinstall the cover and tighten the cover screws to 15 in-lbs minimum to properly seal the enclosure.

CAUTION: Close the valve fully to determine that the stem threads do not activate the switch. The switch being activated by the stem threads could result in a false valve open indication.

Break off the excess rod length



Knockout Removal

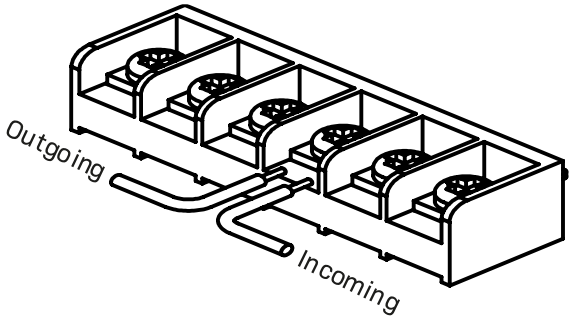


To remove knockouts: Place screwdriver at inside edge of knockouts, not in the center.

NOTE: Do not drill into the base as this creates metal shavings which can create electrical hazards and damage the device. Drilling voids the warranty.

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Switch Terminal Connectios Clamping Plate Terminal



WARNING: An uninsulated section of a single conductor should not be looped around the terminal and serve as two separate connections. The wire must be severed, thereby providing supervision of the connection in the event that the wire become dislodged from under the terminal. Failure to sever the wire may render the device inoperable risking severe property damage and loss of life. Do not strip wire beyond 3/8" of length or expose an uninsulated conductor beyond the edge of the terminal block. When using stranded wire, capture all strands under the clamping plate.

NOTICE: All conduit and connectors selected for the installation of this product shall be suitable for the environment for which it is to be used and shall be installed to the manufacturer's installation instructions. For NEMA 4, 4X, 6, 6P installations, the cover screws are recommended to be tightened to 15 in-lbs minimum and the trip rod locking screw tightened to 5 in-lbs minimum to properly seal the enclosure.

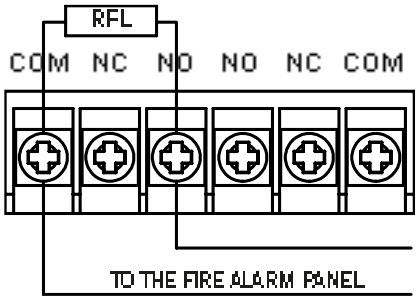
Supervisory switches have a normal service life of 10-15 years. However, the service life may be significantly reduced by local environmental conditions

Testing

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

CAUTION: Close the valve fully to determine that the stem threads do not activate the switch. The switch being activated by the stem threads could result in a false valve open indication.

Typical electrical connections



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Transport and Storage

Original Package

Products must be transported exclusively in their original packaging to preserve physical integrity and factory conditions.

Proper Handling

Avoid any type of improper stacking that could compromise the structural or functional integrity of the product.

Environmental Conditions

Store in dry locations, protected from moisture, dust, corrosive agents, and extreme temperatures.

Failure to comply with these conditions may void the warranty and render the product unusable.

Pre-Installation Inspection

Before installation, each product must undergo a visual inspection to verify the absence of physical damage or transport defects.

Applicable regulations

Fire protection systems must be designed, installed, and maintained in accordance with the criteria established in NFPA and EN standards and other local and national regulations in force.

Responsibilities and Requirements

Reading Instructions

The user must carefully read all instructions before installing any AG Fire Sprinkler product.

Product Verification

It is the user's responsibility to verify that AG Fire Sprinkler products are suitable for their application, in accordance with industry standards and the technical information provided.

Installer Knowledge

The installer must understand how the product works and the reasons for its specific selection..

Safety Regulations

You must be familiar with industry regulations and be aware of the risks associated with improper installation.

Serious Consequences

Failure to comply with installation requirements and current regulations may compromise system operation, resulting in system failure, personal injury, or significant material loss or damage.

Guarantee

For warranty terms and conditions, please contact AG Fire Sprinkler.

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Order Information

Model	Code
OSYSU-1 1 contact	A002296

Model	Code
OSYSU-2 2 contacts	A002302

Accessories
Corrosion resistant hardware of 316 stainless steel
Cover Screw

Accessories
Hex Key for Cover Screws and Installation Adjustments
Optional Cover Tamper Switch Kit

Related items

Description
Flow Detectors
Pressure and Supervisory Switches
Wet Control Stations
Dry Control Stations
Reduced Control Stations
Pre-actrion Control Stations
Deluge Stations

Description
Threaded Butterfly Valves
Handwheel Butterfly Valves
Lever Butterfly Valves
Threaded Gate Valves
OS&Y Gate Valves
NRS Gate Valves
Indicator Post Gate Valves

The equipment presented in this technical datasheet must be installed in accordance with the latest relevant standards of the National Fire Protection Association (NFPA), FM Global, LPCB, VdS, or other similar organizations, as well as applicable government regulations.
This document is non-binding. AG Fire Sprinkler reserves the right to make any changes to this document without prior notice.

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