



TECHNICAL DATA

PRESSURE SUPERVISORY SWITCHES (EXPLOSION-PROOF/WATERTIGHT)

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services 877-384-5464 Fax: 269-945-4495 Email: techsvcs@vikingcorp.com

1. DESCRIPTION

The Viking Explosion-Proof/Watertight Pressure Supervisory Switches are for use in areas exposed to weather or explosive atmospheres. The switches are designed to actuate an electric alarm at either a predetermined low-pressure setting or a predetermined high-pressure setting on any system pressurized with air, nitrogen, or water. These systems include dry-pipe systems, preaction systems, pneumatic release lines, foam/water sprinkler systems, and any other system pressurized with air or nitrogen, as well as pressure tanks and waterflow control systems. The switch may also initiate signals to release control panels, annunciator panels, or any other auxiliary equipment that can be controlled by the opening or closing of an electrical switch. Each Explosion-Proof/Watertight Pressure Supervisory Switch is equipped with two field adjustable single-pole double-throw (SPDT) snap action switches that can be wired for normally open or normally closed circuits. Both SPDT switches can be adjusted to any point between 10 PSI (69 kPa) and 175 PSI (1 207 kPa).



2. LISTINGS AND APPROVALS

Switch 10379 (Potter 1350002)

CENELEC Approved

Switch 10380 (Potter 1350402)

UL and ULC Listed - Guide VOXZ (Potter Listing)

FM Approved - Sprinkler Waterflow, Pressure Actuated (Potter Listing)

California State Fire Marshal Listing No.: 7770-0328:141 (Potter Listing)

New York City MEA No.: 299-91-E. Vol V (Potter Listing)



WARNING: Cancer and Reproductive Harm-
www.P65Warnings.ca.gov

3. TECHNICAL DATA

Specifications:

Environmental Specifications:

Part No. 10379, for use in hazardous locations classified as EEXDIIBT6

Part No. 10380, for use in hazardous locations classified as:

Class I: Groups B, C, D, Div. 1

Class II: Groups E, F, G, Div. 1

Class III: Div. 1

NEMA 4 Rated Enclosure

Ambient Temperature Range:

Part No. 10379: -4 °F to 104 °F (-20 °C to 40 °C)

Part No. 10380: -40 °F to 140 °F (-40 °C to 60 °C)

Pressure Connection: ½" (15 mm) NPT Brass, external threads

Electrical Connection: ½" (15 mm) NPT, internal threads

Maximum Differential:

2 PSI (14 kPa) at 20 PSI (138 kPa)

5 PSI (34 kPa) at 175 PSI (1 207 kPa)

Maximum System (Proof) Pressure: 250 PSI (1 724 kPa)

Switch Contacts: Two sets of SPDT (Form C)

15.0 Amps at 125/250VAC

2.5 Amps at 30VDC

Material Specifications:

Cover: Gasketed Cast Aluminum Cover

Base: Cast Aluminum Body

Ordering Information:

Part No. 10379 - For use in Europe

Part No. 10380

Accessories:

Switch 10379 - Pressure Adjustment Hex Key, Viking Part No. 10600 and Cover Removal Key, Viking Part No. 10601

Switch 10380 - Pressure Adjustment and Cover Removal Key, Viking Part No. 10600

Viking Technical Data may be found on
The Viking Corporation's Web site at
<http://www.vikinggroupinc.com>.
The Web site may include a more recent
edition of this Technical Data Page.



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4. INSTALLATION

Install the Explosion-Proof/Watertight Pressure Supervisory Switch into a ½" (15 mm) NPT outlet, mounted in upright position (threaded connection down). Locate the switch as indicated on Viking schematic drawings, Trim Charts, System Data, or Technical Data for the system used. To prevent leakage, apply Teflon® tape sealant to the male threads only. (Caution: Use of pipe-joint cement may result in obstruction of aperture and loss of signal). Use a pipe wrench applied to the wrench shoulder, located just above the ½" (15 mm) NPT external threaded base of the switch, to tighten the unit. Do not over-tighten. Supervisory Switches are factory set to operate at a specific pressure. To raise or lower the actuation setting of the switch, see section 6. INSPECTION, TESTS AND MAINTENANCE. To wire the unit, proceed as follows:

1. De-energize electrical circuits involved.
2. Use the hex key wrench supplied with the switch to loosen the three socket head cover screws. Remove the switch cover with an upward twisting pull.
3. Connect the electrical conduit to the ½" (15 mm) NPT conduit opening provided. A NEMA Type 4 conduit hub is required for outdoor installations.
4. Connect ground wire from the ground screw provided to suitable ground.
 - a. A grounding screw is provided inside Switch Part Numbers 10379 and 10380. Switch 10379 is also equipped with an external grounding screw.
5. Connect electrical circuitry for the alarm and any auxiliary equipment being controlled by the switch (see Figures 2 and 3).
 - a. Observe markings. One set of contacts is marked for HIGH pressure supervision, while the other is marked for LOW pressure supervision.

Note: Wire all devices to national and local codes and requirements of the Authority Having Jurisdiction.

6. Optional: Verify pressure settings of the switch. To test for proper settings without energizing the circuit, connect an ohm meter to the circuit being tested. Alternately raise and lower system pressure to verify proper setting. Note: For adjustment and test procedures, see section 6. INSPECTION, TESTS AND MAINTENANCE.
7. Replace the cover by reversing the procedure described in steps 1 and 2.
8. Energize the circuits. Do not exceed the electrical rating of the switch.
9. Test for proper setting and operation of the device. See section 6. INSPECTION, TESTS AND MAINTENANCE.

5. OPERATION

See individual system data sheets for proper operation.

6. INSPECTION, TESTS AND MAINTENANCE

Operate and test the supervisory switch after installation, prior to start-up, and periodically as required by the Authority Having Jurisdiction.

NOTICE: The owner is responsible for maintaining the fire protection system and devices in proper operating condition. For minimum maintenance, inspection, and testing requirements, refer to the appropriate National Fire Protection Association's pamphlet that describes care and maintenance of sprinkler systems.

A. TESTING AND MAINTENANCE:

CAUTION: If auxiliary equipment is controlled by operation of the switch, take appropriate steps to prevent unwanted operation of those devices when testing.

WARNING: Any system maintenance that involves placing a control valve or detection system out of service may eliminate the fire protection capabilities of that system. Prior to proceeding, notify all Authorities Having Jurisdiction. Consideration should be given to employment of a fire patrol in the affected areas.

1. Close the main control valve, placing the system out of service.
2. High-pressure supervisory switch:
Increase system pressure above the set point of the switch. The alarm should activate.
3. Low-pressure supervisory switch:
Reduce system pressure below the set point of the switch. The alarm should activate.

CAUTION: When reducing pressure in pneumatic release lines, be careful not to operate the release and activate the system. Refer to the appropriate Technical Data for the system being tested.

4. When testing is complete, return the system to normal operating pressure. Alarms should stop sounding.
5. If test is satisfactory, reset all necessary equipment, and place the system in service. If adjustment is necessary see instructions below.
6. When testing is complete, verify that the system has been placed back in service, that the water supply control valve is open, and all other valves are in their normal operating position.



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B. ADJUSTMENT PROCEDURE:

(Refer to Figure 4.)

Consult the appropriate Technical Data for recommended pressure for the system used. Explosion-Proof/Watertight Supervisory Switches are factory set. If adjustment is necessary, proceed according to the instructions given below.

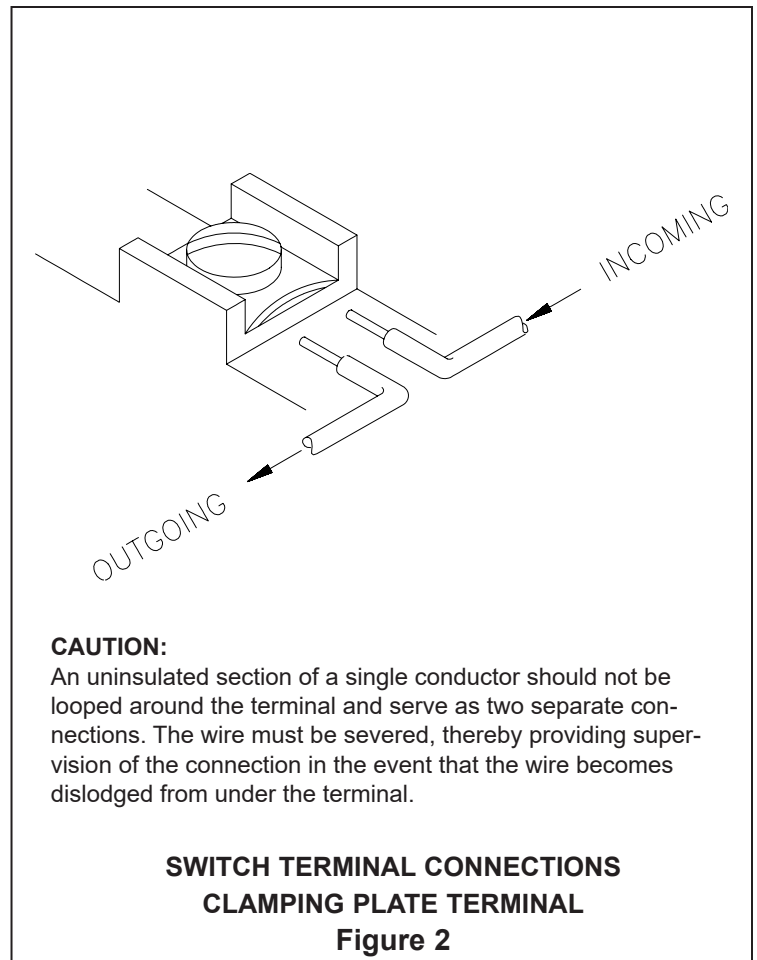
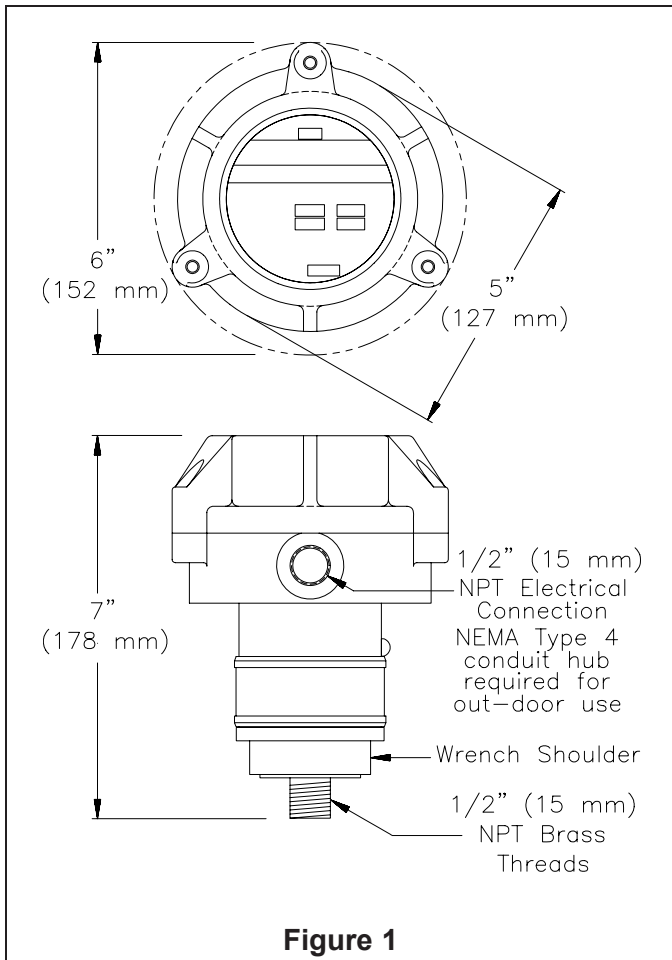
1. De-energize electrical circuits involved.
2. Use the hex key wrench supplied with the switch to remove the socket head screw above the sliding access cover sleeve (see Figure 4).
3. Slide the adjustment access cover up.
4. HIGH and LOW supervisory switches operate independently of one another. The operating point of each switch can be adjusted between 10 PSI (69 kPa) and 175 PSI (1 207 kPa). Turn the appropriately marked adjustment knob clockwise to raise the actuation point or counter-clockwise to lower the actuation point.
5. Verify pressure settings of the switch. To test for proper settings without energizing the circuit, connect an ohm meter to the circuit used. Alternately raise and lower system pressure to verify proper operation of the switch. Refer to section 6. INSPECTION, TESTS AND MAINTENANCE.

7. AVAILABILITY & SERVICE

Viking Pressure Switches are available through a network of domestic and international distributors. See the Yellow Pages of the telephone directory under "Sprinklers-Automatic-Fire" or contact The Viking Corporation.

8. GUARANTEES

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.



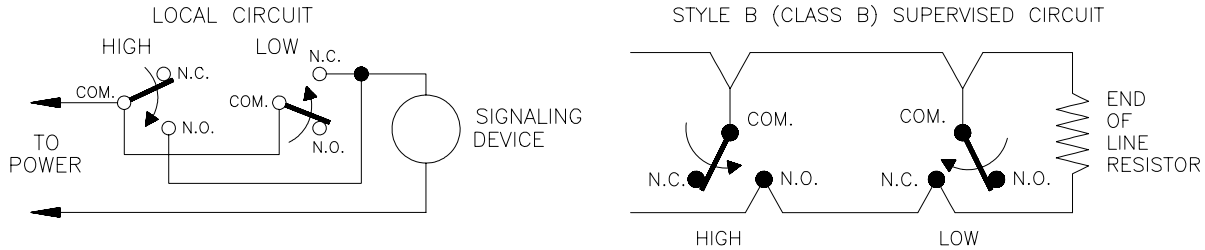


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WATERFLOW INDICATOR

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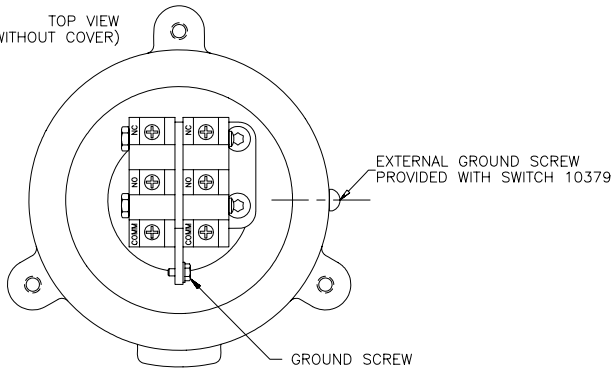


Notes

- 1 Maximum recommended wire size: 14 AWG.
- 2 Switch are shown in standby conditions with "normal" pressure applied.
- 3 See Figure 2 for terminal connections.

**Typical Wiring diagrams for Viking
Explosion-Proof/Watertight Pressure Supervisory Switch
Figure 3**

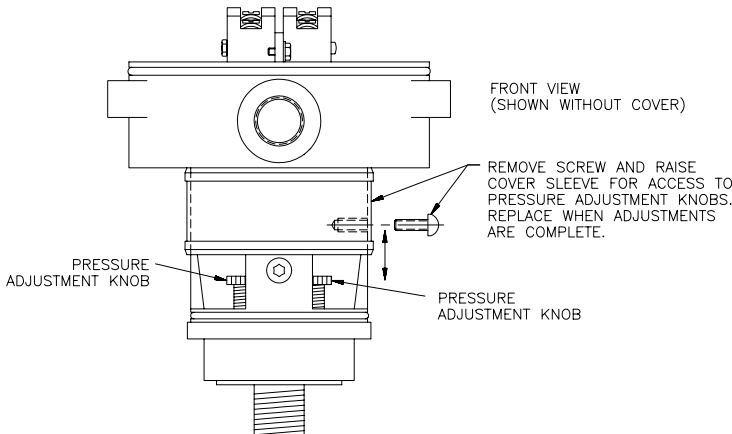
TOP VIEW
(SHOWN WITHOUT COVER)



EXTERNAL GROUND SCREW PROVIDED WITH SWITCH 10379

GROUND SCREW

FRONT VIEW
(SHOWN WITHOUT COVER)

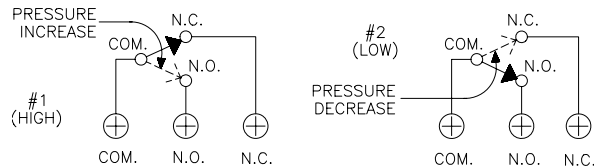


REMOVE SCREW AND RAISE COVER SLEEVE FOR ACCESS TO PRESSURE ADJUSTMENT KNOBS. REPLACE WHEN ADJUSTMENTS ARE COMPLETE.

PRESSURE ADJUSTMENT KNOB

PRESSURE ADJUSTMENT KNOB

PRESSURE SWITCH TERMINATION



Switches are shown in standby condition with "normal" pressure applied. HIGH pressure supervisory switch contacts change with pressure increase. LOW pressure supervisory switch contacts change with pressure decrease.

NOTE: To prevent leakage, apply Teflon® tape sealant to male threads only.

WARNING: Use of pipe joint cement may result in obstruction of aperture and loss of signal.

CAUTION: When this device is to be installed in an area that is classified as "HAZARDOUS", the person responsible for safety in the area should be contacted to determine if the tools and operations required for the installation of the device and associated components are permitted in the area. To reduce the risk of ignition of hazardous atmospheres, disconnect supply circuits before opening cover. Keep cover tight while circuits are live. Cover screws must be torqued to 45-50 in. lbs.

Figure 4