EPSA10 Series Alarm Pressure Switches

Safe Signal™

Specifications

Contact Ratings:	10 A, 1/2 HP @ 125/250 VAC 2.5A @ 6/12/24 VDC
Overall Dimensions:	See Figure 1
Operating Temperature Range:	–40° to +160°F
Maximum Service Pressure:	250 PSI
Maximum Adjustment Range:	4 – 20 PSI
Enclosure Rating:	ULC 4x — Indoor or Outdoor Use NEMA 4 — Indoor or Outdoor Use
Approximate Differential:	3 PSI throughout range

Available Models

Plastic Fittings

EPSA10-1P Alarm pressure switch - 1 switch
EPSA10-2P Alarm pressure switch - 2 switches

Important

Please Read Carefully and Save

This instruction manual contains important information about the installation and operation of alarm pressure switches. Purchasers who install switches for use by others must leave this manual or a copy of it with the user.

All alarm pressure switch installations must comply with local codes and ordinances and the requirements of the authority having jurisdiction. Additional information is available in National Fire Protection Association standards NFPA 13, 13D, 13R, and 72. The connection of alarm pressure switches to alarm control units is goverened by CAN/ULC-S524-M91, Standard for the Installation of Fire Alarm Systems.

Please also refer to any other applicable local codes, and the requirements of the authority having jurisdiction.

Failure to follow these directions may result in failure of the device to report an alarm condition. Safe Signalis not responsible for devices that have been improperly installed, tested, or maintained.

⚠CAUTION

Do not use in potentially explosive atmospheres. Do not leave unused wires exposed.

Operation

As pressure changes, a diaphragm actuates 1 or 2 snap action switches. The pressure switch actuation is determined by adjustment settings.

Installation

1. Remove Cover
   Cover is held on by two tamper resistant screws. (Removal key is enclosed with pressure switch.)
2. Mounting the Switch
   The device is designed to be mounted in the upright or horizontal position; side mounting is also acceptable. Locate it where vibration, shock, and mechanical loading are minimal. Refer to piping diagram (Figure 2 on page 2).

Figure 1. Pressure switch basic dimensions:

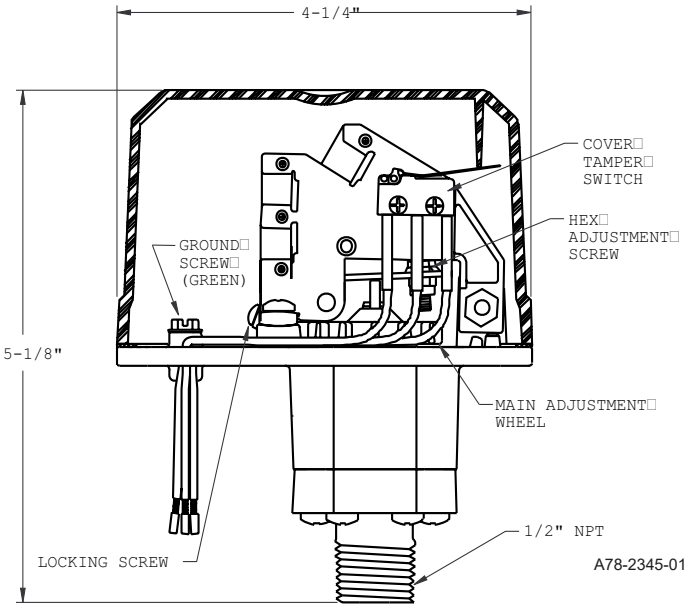
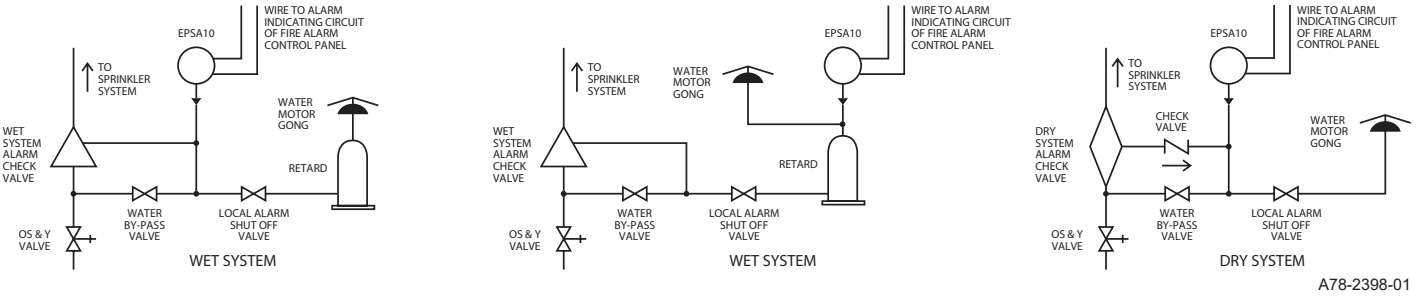


Figure 2. Typical piping diagram for EPSA10-1(P), EPSA10-2(P)



a. Mount the device directly to the line via the 1/2″ NPT pressure connection. The use of teflon pipe sealant tape is recommended. Be sure the fitting is tight enough to prevent leaks.
b. Apply tightening torque to the black plastic hex portion of device.

⚠CAUTION

High voltage. Electrocution hazard. Do not handle live AC wiring or work on a device to which AC power is applied. Doing so may result in severe injury or death.

3. Wire the device in accordance with the National Electrical Code. Two 7/8″ diameter conduit connection holes have been provided in the mounting plate to accept standard 1/2″ conduit fittings (one is removable knock-out type). If a NEMA 4/ULC 4x (waterproof unit) is required, waterproof flexible metallic conduit and appropriate conduit fittings must be used. Recommended connectors are Thomas and Betts PN 5332 (180° coupling), PN 5352 (90° coupling), and PN 5262 seal ring.
4. Connect wiring to terminals (see Figure 3 and Table 1).

Table 1. Electrical connections (referenced at factory settings):

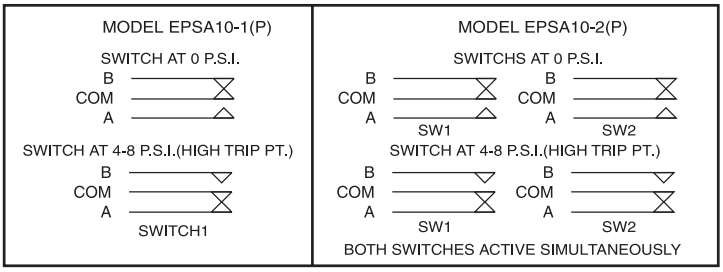
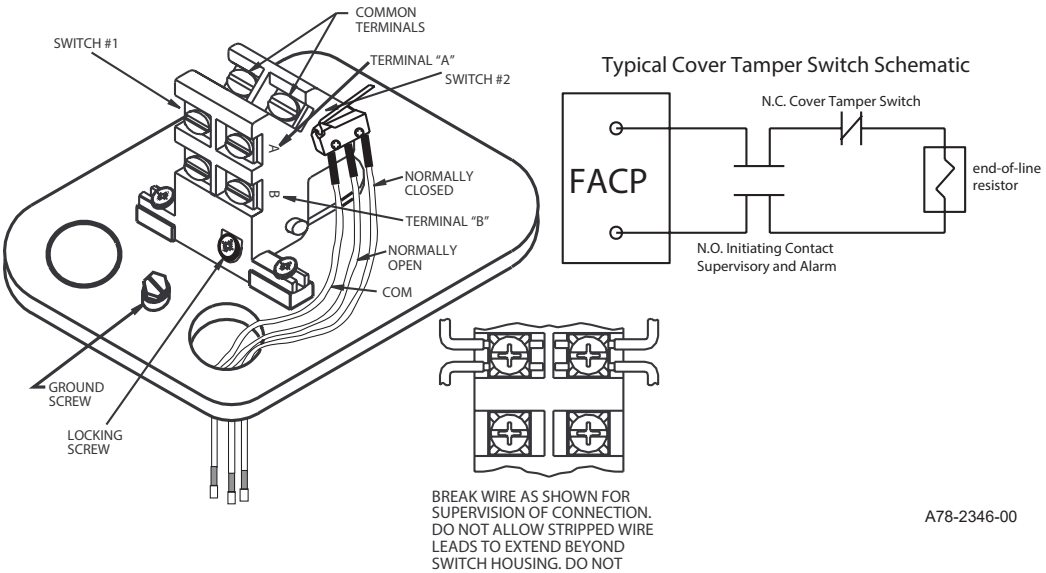


Figure 3. Switch terminals:



Adjustments To Factory Settings

Both EPSA10-1(P) and EPSA10-2(P) devices are pre-adjusted at the factory to alarm at 4–8 PSI on rising pressure (see Table 2). Pressure switch settings may be adjusted in the field to obtain a different pressure alarm response from 4 PSI to 20 PSI. The switch has an override feature on the adjustment mechanism to prevent exceeding the 20 PSI max. setting of the switch. This override feature carries with it a tolerance band that may limit the upper adjustment to 16–20 PSI. Care must be used when setting the switch to ensure that the lower limit of 4 PSI is not exceeded. This will allow the switch to reset within the 3 PSI differential stated.

1. Install pressure switch as stated in “INSTALLATION” portion of instruction manual. Attach pressure test source to system.
2. Back off locking screw (see Figure 1) to allow main adjustment wheel to rotate freely.
3. Test trip point by slowly introducing pressure from the pressure test source. When trip point is found, reduce pressure to zero. Rotate main adjustment wheel (counterclockwise to increase pressure) and retest until switch trip point is at the desired pressure setting (4–20 PSI range). Each number represents an approximate trip point change of 0.2 PSI. One full rotation changes the trip point setting by approximately 2.5 PSI. A reset differential of approximately 3 PSI is typical throughout the entire adjustment range of switch.
4. Retest the set point several times to ensure accuracy of setting.
5. Re-seat locking screw.

Table 2.

MODEL	FACTORY SETTINGS (PSI)			
	Fall (Low Switch)	Approx. Reset	Rise (Hi Switch)	Approx. Reset
EPSA10-1(P)	—	—	4Ð 8	3 PSI Diff.
EPSA10-2(P)	—	—	4Ð 8	3 PSI Diff.

NOTE: The sensor assembly is not field replaceable. Do not attempt to disassemble these parts. If you have any questions, consult System Sensor. Safe Signalrecommends careful consideration of the following factors when specifying and installing Alarm Pressure Switches. Always refer to the Installation and Maintenance Instruction for specific recommendations on individual devices before installing the unit.

- Electrical ratings stated in literature and on nameplates should not be exceeded.
- Overload on switch can cause failure on the first cycle. Always wire devices according to national and local electrical codes.
- Install units away from shock and vibration. Proper electrical fittings should be used to prevent moisture from entering the enclosure via the conduit.
- Test all devices for proper operation after initial installation. Perform preventive maintenance and periodic testing as required by the applicable CAN/ULC-S536 but not less than bi-monthly.
- Install a back-up control for all critical applications where control failure could endanger life or property. A backup control to serve as a high or low limit control is especially recommended for applications where a runaway condition could result.
- Do not mount unit where ambient temperatures will exceed published limits.
- Avoid impact or mechanical loading.