



by Tyco Fire Suppression & Building Products

A-101 VEHICLE SYSTEM PRESSURE SWITCH INSTALLATION INSTRUCTIONS

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APPLICATION

The Vehicle System Pressure Switch is a manually resettable 3-conductor SPDT switch, rated for 6A when used with voltages between 12VDC and 36VDC. The switch can be used to perform several different tasks upon system actuation, including equipment shutdown, turning on notification appliances, or providing "Pressure Switch Feedback" to a control panel. The switch has two integral cables, both sealed to the end of the switch housing. One utilizes 3-conductors (NO/C/NC) for field connections, while the other cable utilizes 2-conductors which are used for cable termination. Depending on the application, the 2-conductor cable can be terminated one of two ways. Wiring information is as follows (switch unpressurized):

3-CONDUCTOR CABLE

COMMON (COM) – GREEN
NORMALLY CLOSED (N.C.) – BLUE
NORMALLY OPEN (N.O.) – BROWN

2-CONDUCTOR CABLE

COMMON (COM) – BLACK
NORMALLY OPEN (N.O.) – RED

Pressure Switch Reset: Resetting of the pressure switch is accomplished by pressing the red plunger located on the back of the switch between the 2- and 3-conductor cables.

INSTALLATION

Installation of the Vehicle System Pressure Switch is as follows:

1. The pressure switch is designed to be installed in a standard 1/4 in. Female NPT fitting. It should be installed in the actuation line between manual actuation device check valves and the pneumatic actuator(s) (Part No. 430221).



WARNING

When threading the switch into the actuation line tee, DO NOT apply torque directly to the plastic switch body. Damage to the switch may result. Tighten ONLY by applying torque to the 1/4 in. NPT male pressure fitting.



WARNING

DO NOT install the pressure switch in the fire hazard area or in any area where the ambient temperature will exceed 175°F (79 °C).

CONNECTION OF 3-CONDUCTOR CABLE

2. A Pressure Switch Connector Kit (Part No. 437412) is provided with each switch to ensure adequate weatherproofing of all electrical connections associated with the pressure switch. The following components from that kit will be required to complete the installation of the 3-conductor cable:

- Two Strain Reliefs (Part No. 423546)
- One Splice Body (Part No. 426783)
- Three 22-18AWG Butt splice terminals (Part No. 437413)

Note: The 3-conductor cable and the field cable wiring (allowable cable outside diameter: 0.08 in. (2 mm) minimum, 0.24 in. (6.1 mm) maximum), may also be wired and enclosed within a weather-proof electrical box (not supplied), using weather-proof fittings appropriate for the cable size.

3. Begin by trimming the 3 conductors on the pressure switch to a length of 3/4 in. (19 mm) from the end of the outer jacket. Trim the outer jacket on the equipment cable to the same length.
4. Strip 1/4 - 3/8 in. (6 - 10 mm) of insulation from each conductor in both cables.
5. Loosen the lock nut on the strain relief connectors (Part No. 423546) and slide both the lock nuts and connectors over the ends of both wires.
6. Slide the enclosed Splice Body (Part No. 426783) over the end of one of the cables.



CAUTION

Before performing the next step, double check the equipment and pressure switch wiring to ensure the proper connections are being made for your intended application. Refer to the pressure switch wire color coding above for proper terminal designation.

Using the supplied 22-18AWG Butt splice terminals (Part No. 437413), crimp the splices onto each pressure switch wire being used. Once complete, crimp the splices to the corresponding equipment wiring.

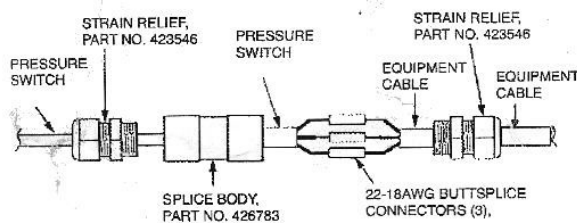


FIGURE 1
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7. Once crimps are complete, apply Dow Corning 737 sealant (or equivalent) to strain relief threads going into splice body.
8. Securely tighten the one strain relief into the splice body.
Note: Do not tighten the compression nut onto the wire at this time.

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9. Slide the splice body assembly near the recently crimped butt splice terminals. Fill the splice body approximately half full with Dow Corning 737 sealant (or equivalent) and pull the splice body assembly over the terminals so the terminals are located approximately halfway inside the splice body. This should result in the terminals being enclosed in the sealant.
10. If needed, fill the remainder of the cavity with sealant.
11. Apply Dow Corning 737 sealant (or equivalent) to the thread on the unattached strain relief lock nut and thread this strain relief assembly into the splice body.
12. With a wrench on both the strain relief locks, simultaneously tighten both ends.
13. Complete the assembly operation by securely tightening the strain relief to both the pressure switch and equipment cables.
14. For **EQUIPMENT SHUTDOWN** or **NOTIFICATION APPLIANCE ACTIVATION**:
Note: Terminating the pressure switch, for this application, will require the use of the following components from the Pressure Switch Connector kit:
 - One Strain Relief (Part No. 423546)
 - One Splice Block (Part No. 433284)
 - One E.O.L. Cap (Part No. 423545)
 - a. Trim the conductors on the 2-conductor cable down to 1 in. (25 mm) from the outer jacket.
 - b. Strip 1/4 in. (6 mm) of insulation off of both inner conductors.
 - c. Loosen the lock nut on the strain relief connector and slide both lock nut and connector over the end of the wire.
 - d. Loosen the screws on the splice block (Part No. 433284) and insert the bare wires. Securely tighten the screws. The purpose of this is to isolate the wires from each other. Check continuity between the two terminals to verify that they are separated.
 - e. Apply a small amount of Dow Corning 737 sealant (or equivalent) on male threads of the strain relief and fill the E.O.L. Cap approximately 3/4 full of the sealant as well.
 - f. Screw E.O.L. cap onto the strain relief connector.
 - g. Tighten lock nut onto pressure switch cable.
 - h. Refer to Figure 2 for more detail.
15. For **PRESSURE SWITCH FEEDBACK**, install the E.O.L. Assembly exactly as outlined in 14a through 14h above but substitute the 4.7k ohm E.O.L. resistor (Part No. 423549) for the Splice Block, used in step 14d.

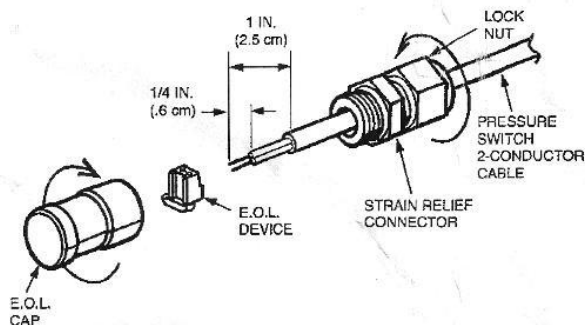


FIGURE 2
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