

## P PRESSURE CONTACTOR DESCRIPTION AND INSTALLATION

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### 1. GENERAL

1.01 This section covers the description, installation, and adjustment of the P pressure contactor (AT-8680) for use on underground or buried cable routes.

1.02 This section is reissued to:

- Delete reference to LE6/42 cable closure (AT-8538) which is rated Manufacture Discontinued and replaced with PC6/48 cable closure (AT-8690).
- Delete UNDERGROUND from title.
- Change pipe thread compound to teflon pipe sealing tape.
- Make minor changes to text.

1.03 The P pressure contactor replaces the G, J, K, and T pressure contactors and contactor terminals (AT-7442, AT-7584, AT-7585, and AT-6766) which are rated Manufacture Discontinued (refer to Section 637-210-100).

### NOTICE

Not for use or disclosure outside the  
Bell System except under written agreement

## 2. DESCRIPTION

2.01 The P pressure contactor (Fig. 1 and 2) is a nontemperature-compensated pressure monitoring device having both talk and alarm facilities and incorporates a bellows-operated, snap-action switch assembly. The bellows is evacuated and sealed.

2.02 The operating point, which is preset at 6 pounds per square inch gauge (psig), may be externally adjusted by turning the adjustment screw located on the underside of the contactor case (Fig. 1). Adjustments cover a pressure range of 0 to 7.0 psig by changing the pressure required to contact the bellows for switch operation.

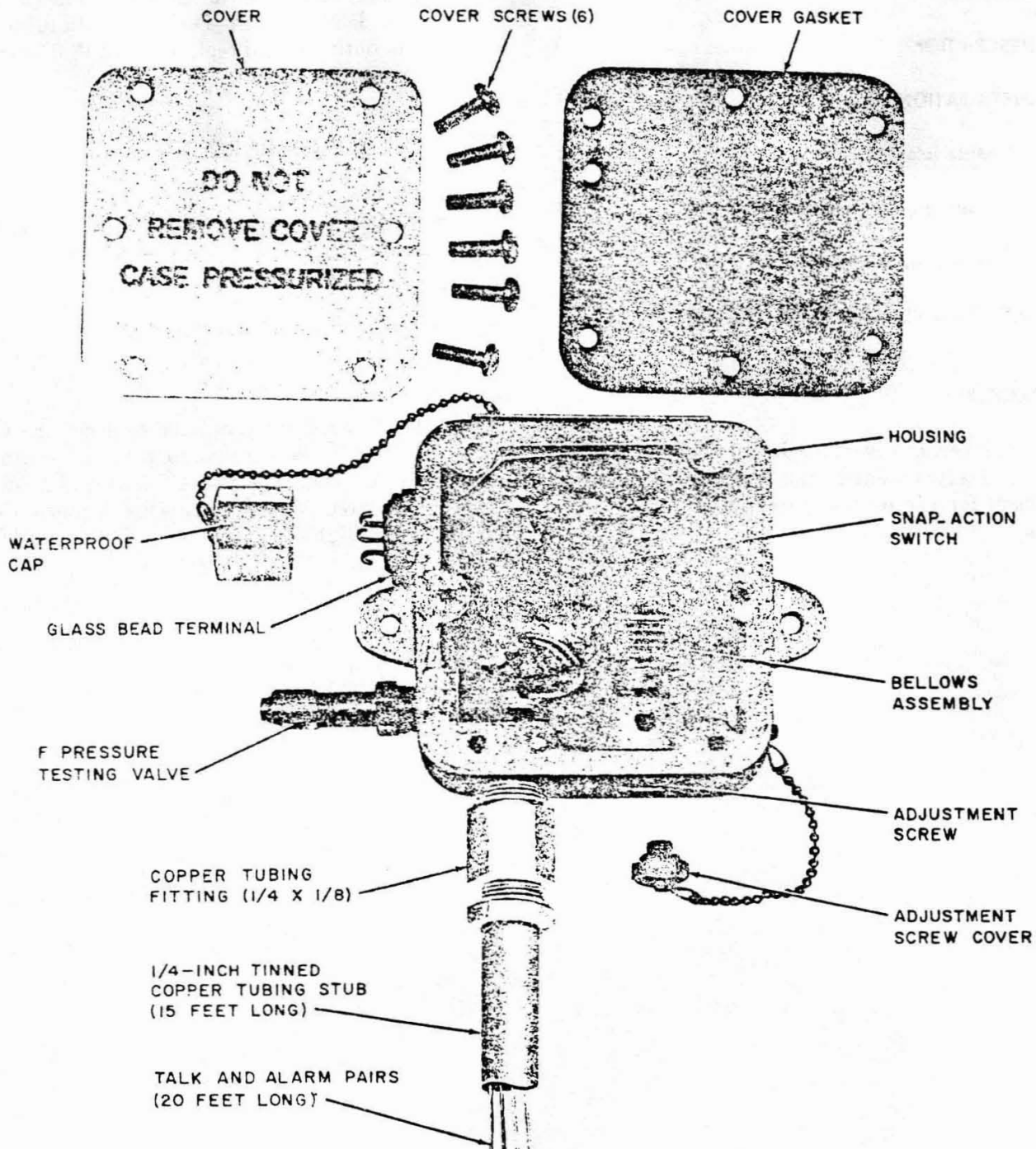


Fig. 1—P Pressure Contactor—Cover Removed

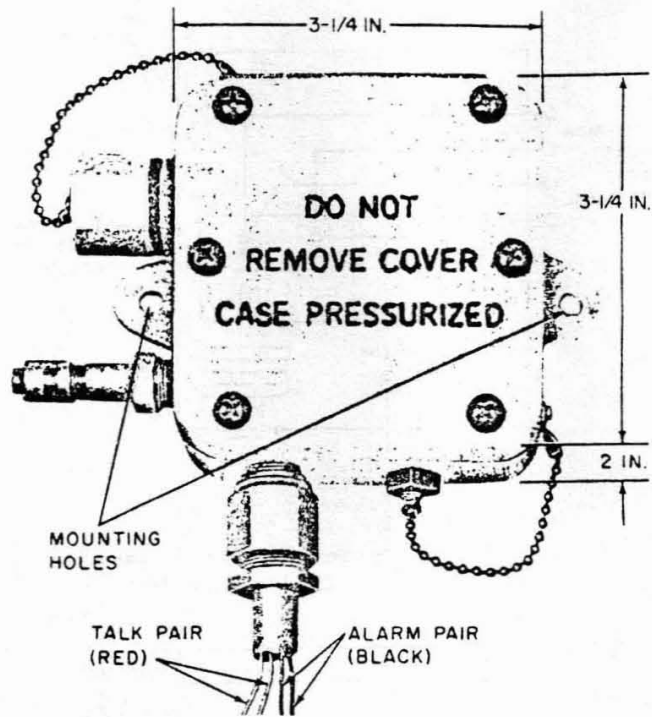


Fig. 2—P Pressure Contactor (Maximum Dimensions)

2.03 Talk and alarm pairs terminating inside the device pass through a 1/4-inch tinned copper stub (15 feet long).

**Note:** As an option, the contactor may be obtained with a 1/4-inch tinned copper stub 6 feet long.

2.04 After installation, the talk and alarm pairs are accessible through a glass bead terminal covered by a waterproof cap. See Fig. 3 for alarm and talk pair identification.

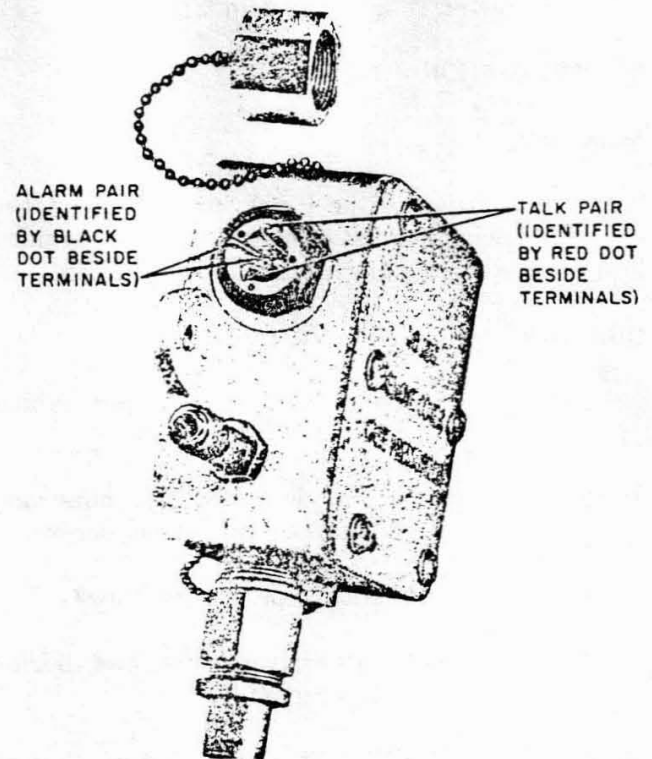


Fig. 3—Talk and Alarm Pair Identification

2.05 An F pressure valve is provided on the contactor housing for reading pressure within the pressure contactor.

2.06 The wiring diagram for the P pressure contactor is illustrated in Fig. 4.

### 3. INSTALLATION

#### Materials

3.01 In addition to the P pressure contactor, the following is a list of materials to be obtained locally to complete the contactor installation:

QUANTITY	MATERIALS
1	1/4- by 1/8-inch copper tubing fitting (88-LB)
2	No. 12 D plastic anchors and galvanized round head screws
1	◆Teflon pipe sealing tape◆
2	No. 10 ◆galvanized screw◆ (buried installations)
1	◆PC6/48◆ cable closure (buried installations)
1	Copper tubing cutter.

#### Underground Installation

3.02 ◆Never enter a manhole until it has been tested and ventilated in accordance with the procedures given in Section 620-140-501.◆

3.03 When required for underground installations, the P contactor (Fig. 1) and the associated materials should be installed as follows:

(1) Attach the contactor to the manhole wall, away from splicing area, as follows:

(a) Using the contactor as a template, position the contactor at the selected location and mark the holes to be drilled.

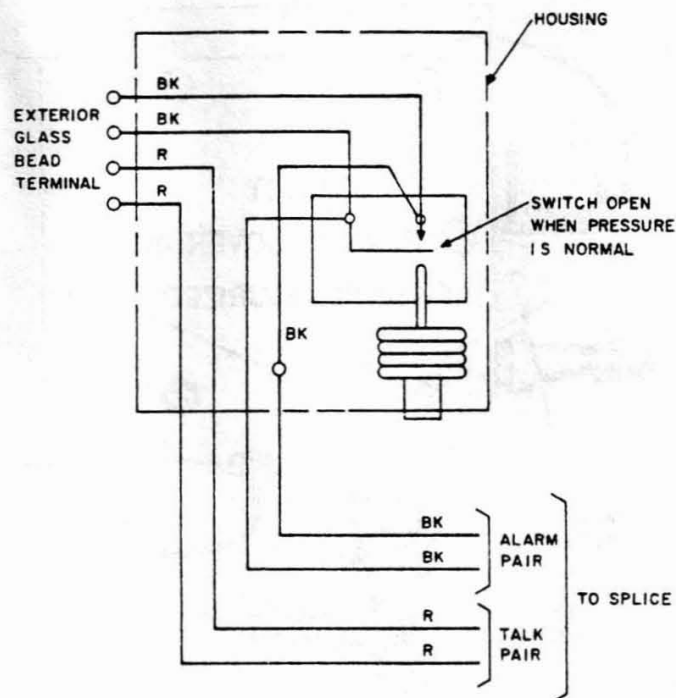


Fig. 4—Wiring Diagram (P Pressure Contactor)

(b) Drill two holes in the manhole wall. The diameter and depth of the holes should correspond with the diameter and length of the anchor sleeve.

(c) Insert anchor into each drilled hole, tapping it lightly until the head is flush with the mounting surface.

(d) Insert a screw through each mounting hole (Fig. 2) of contactor into the anchor and turn it down until it seats firmly.

(2) Prepare the copper tubing stub by cutting the tubing (using a tubing cutter) to a length which will reach between the contactor and the splice opening.

**Splice Case Method**

**3.04** When using a splice case to close the cable opening, proceed as follows:

- (1) Locate and identify the assigned alarm and talk pairs within the splice.
- (2) Splice two 22-gauge pairs approximately 3 feet long (black for alarm pair and red for talk pair) to the conductors within the splice selected for alarm and talk facilities.
- (3) Splice the remaining conductors, using standard methods.
- (4) Prior to closing the splice case, mount a 1/4- by 1/8-inch copper tubing fitting (88-LB) in one of the ports provided in the splice case.
- (5) Pass the four conductors from the contactor through the fitting and splice to the conductors installed in Step (2).
- (6) Join the copper tubing to the fitting provided in Step (4) above and close the case in the standard manner.

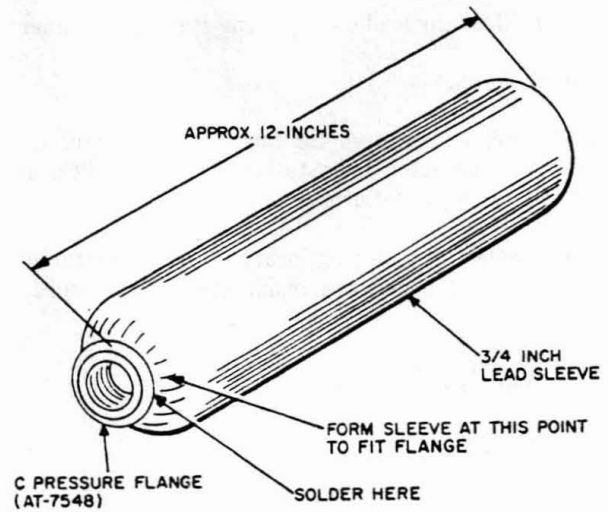
**Alternative Method (Lead Sleeve)**

**3.05** If a lead sleeve is used to close the cable opening, perform Steps (1) and (2) in 3.04 and proceed as follows:

- (1) Cut a 12-inch long piece of 3/4-inch lead sleeving.

(2) Prepare surface of sleeve for soldering and, with a hammer or other suitable tool, carefully form one end of the sleeve to receive a C pressure flange (AT-7548).

- (3) Solder flange in place (see Fig. 5).



**Fig. 5—Lead Sleeve**

(4) Apply teflon pipe sealing tape to threads of the copper tubing fitting (88-LB) and screw the fitting into the C pressure flange.

(5) Pass the four conductors from the contactor through the fitting and sleeve and secure the copper tubing to the fitting.

- (6) Place the 3/4-inch lead sleeve into the end plate of the lead sleeve which will cover the splice opening (see Fig. 6).
- (7) Splice the four conductors from the contactor to the four conductors previously installed.
- (8) Close the lead sleeve in the standard manner.

- (2) Attach the contactor to the backboard, using No. 10 galvanized screws.
- (3) Using a tubing cutter, cut the tubing to a length which will reach between the contactor and the splice opening.

**Buried Installation**

**3.06** When required for buried installation, the P contactor is installed inside the PC6/48 cable closure as follows:

- (1) Select a mounting location for the contactor on the backboard inside the cable closure.

- (4) When closing the cable opening, using either splice case or lead sleeve, follow the procedures outlined in 3.04 and 3.05, respectively.

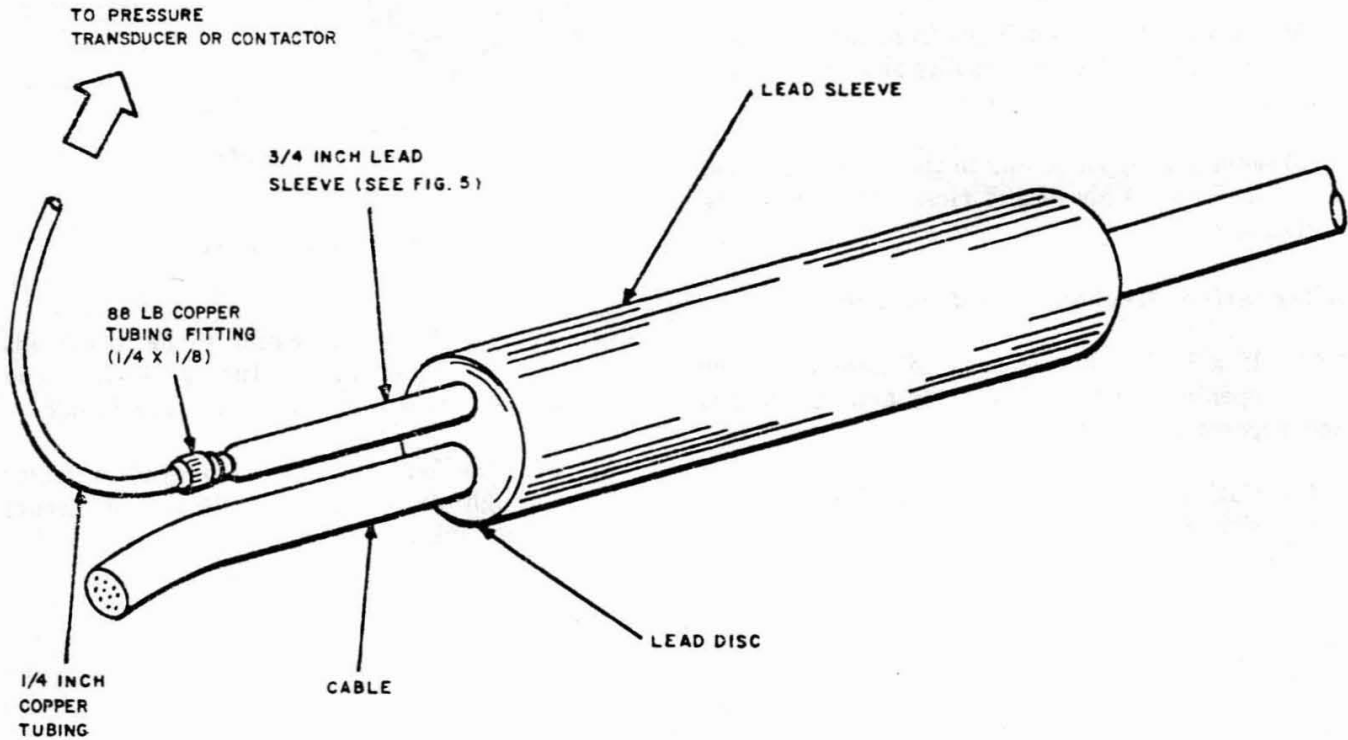


Fig. 6—Installation at Lead Splice Sleeve Complete

#### 4. SETTING AND ADJUSTING PROCEDURE

**4.01** The P pressure contactor is preset to operate at 6 psig. If an operating point greater or less than the preset value is required, the contactor can be reset as follows:

- (1) Install a 1/4- by 1/8-inch copper tubing fitting (88-LB) and an F pressure valve on the end of the contactor copper tubing stub (Fig. 7). *Push alarm and talk pairs up into the end of the copper tubing before installing the fitting and valve.*

**4.02** If the required operating point is greater than the preset 6 psig, proceed as follows:

- (1) Attach a C pressure gauge to the F pressure valve located on the contactor housing.
- (2) While watching the gauge, pressurize the contactor through the valve located on one end of the copper tubing stub to the required pressure.

- (3) Connect a volt-ohmmeter, set to read ohms, to the external alarm pair terminals (Fig. 3).

- (4) Slowly turn the adjustment screw clockwise until the meter indicates zero resistance (closed circuit). At this point, reverse adjustment screw rotation until the meter *just* indicates infinite resistance (open circuit).

- (5) The contactor now is set to operate at the pressure indicated on the C pressure gauge.

**4.03** If the required operating point is less than the preset 6 psig, proceed as follows:

- (1) Follow Steps (1) through (3) in 4.02.
- (2) Slowly turn the adjustment screw counterclockwise until the meter *just* indicates infinite resistance (open circuit).
- (3) The contactor now is set to operate at the pressure indicated on the C pressure gauge.

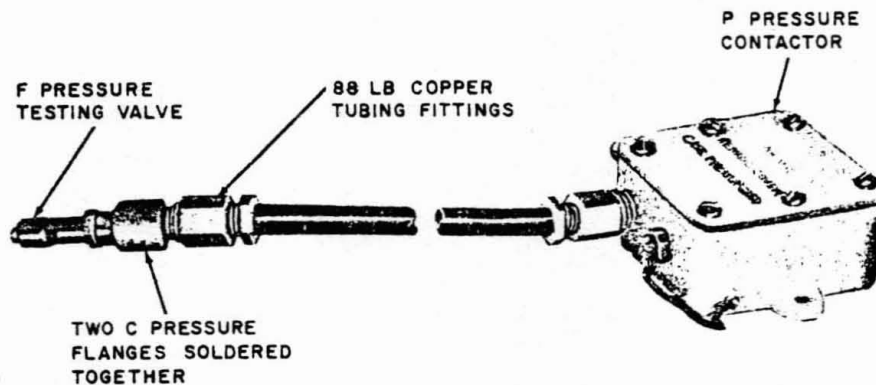


Fig. 7—P Pressure Contactor Prepared for Setting