

**CABLE PRESSURE MONITORING SYSTEM (CPMS)
B AIRFLOW TRANSDUCER (AT-8720)**

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1. GENERAL

1.01 This section covers the description and installation of the B airflow transducer as an airflow sensing device for use with the Cable Pressure Monitoring System (CPMS).

1.02 The airflow transducer is a mechanical device which provides a switch contact closure for each cubic foot of air passing through its associated pipe alarm meter panel, B meter panel, or air meter.

1.03 It is connected by a pair of wires to the logic and measurement panel of the CPMS remote terminal, where the contact closures are summed by an electronic counter circuit pack. On specific time intervals the electronic counter is accessed by the CPMS central terminal, read and reset to zero. The electronic counter is capable of storing a maximum of 31 cubic feet of airflow over a 20-minute period. If this value is exceeded the counter will lock up until reset by the CPMS central terminal. The CPMS central computer subsequently computes the airflow rate and total air usage.

1.04 Incorporation of airflow transducers with the CPMS will eliminate the need for visually reading and recording air usage and airflow rate at meter panels and air meters associated with

the pressurized cable system. This information will be provided by the CPMS to teletype terminals located at the maintenance centers responsible for upkeep of the air dryers and pipe systems.

1.05 Air meters, B meter panels, and pipe alarm meter panels are covered in 637-225- Division and Layer of the Bell System Practices.

2. DESCRIPTION

2.01 The B airflow transducer is furnished in kit form for modification of the LPG Air Meter (Rockwell Manufacturing Co.) used in most of the existing pipe alarm meter panels, B meter panels, and also utilized as a single unit.

2.02 The B airflow transducer kit (Fig. 1) replaces the index and plastic cover presently used on the air meter. The transducer kit contains the following:

- (a) **Modified No. 78 Index:** having a spacer and disc magnet in place of the one cubic foot pointer.
- (b) **Plastic Cover Assembly:** having a dry reed switch located on the front surface and a 50-foot length of the D station wire
- (c) **Two Index Spacers:** used to attain proper gear engagement
- (d) **Gasket** (0.125 inch thick): used only when installing transducer kit on air meter used as single unit
- (e) **Four Machine Screws** (10-24 × 7/8): used to attach plastic cover to panel or meter
- (f) **Two Machine Screws** (6-32 × 1/2): used to attach index and index spacers to meter
- (g) **Rubber Grommet:** used only when installing transducer kit on meter panels.

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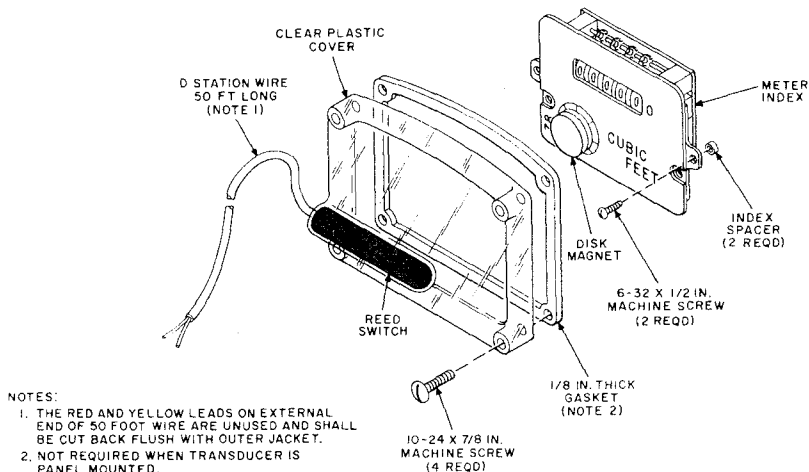


Fig. 1—B Airflow Transducer (Exploded View)

3. INSTALLATION

Mounting Transducer on Pipe Alarm or B Meter Panels

3.01 Install the B airflow transducer on the pipe alarm meter panel or B meter panel as follows:

- (1) Remove four screws securing the plastic cover to the panel and remove cover.
- (2) Remove two screws securing the index to the meter and lift index from meter housing. Index spacers should also be removed, however, on some of the older indices the spacers were not required.

- (3) Install the new index, spacers, and plastic cover (furnished in B airflow transducer kit) in reverse order of removal.

Note: Care should be exercised when installing index to ensure the proper gear engagement.

- (4) Dress the D station wire as shown in Fig. 2. In order to do this, it is necessary to prepare the front panel of both pipe alarm meter panel and B meter panel as illustrated in same figure.

Note: As an alternate, the D station wire can be dressed along the edge of the meter panels using cable clamps (not provided in transducer kit).

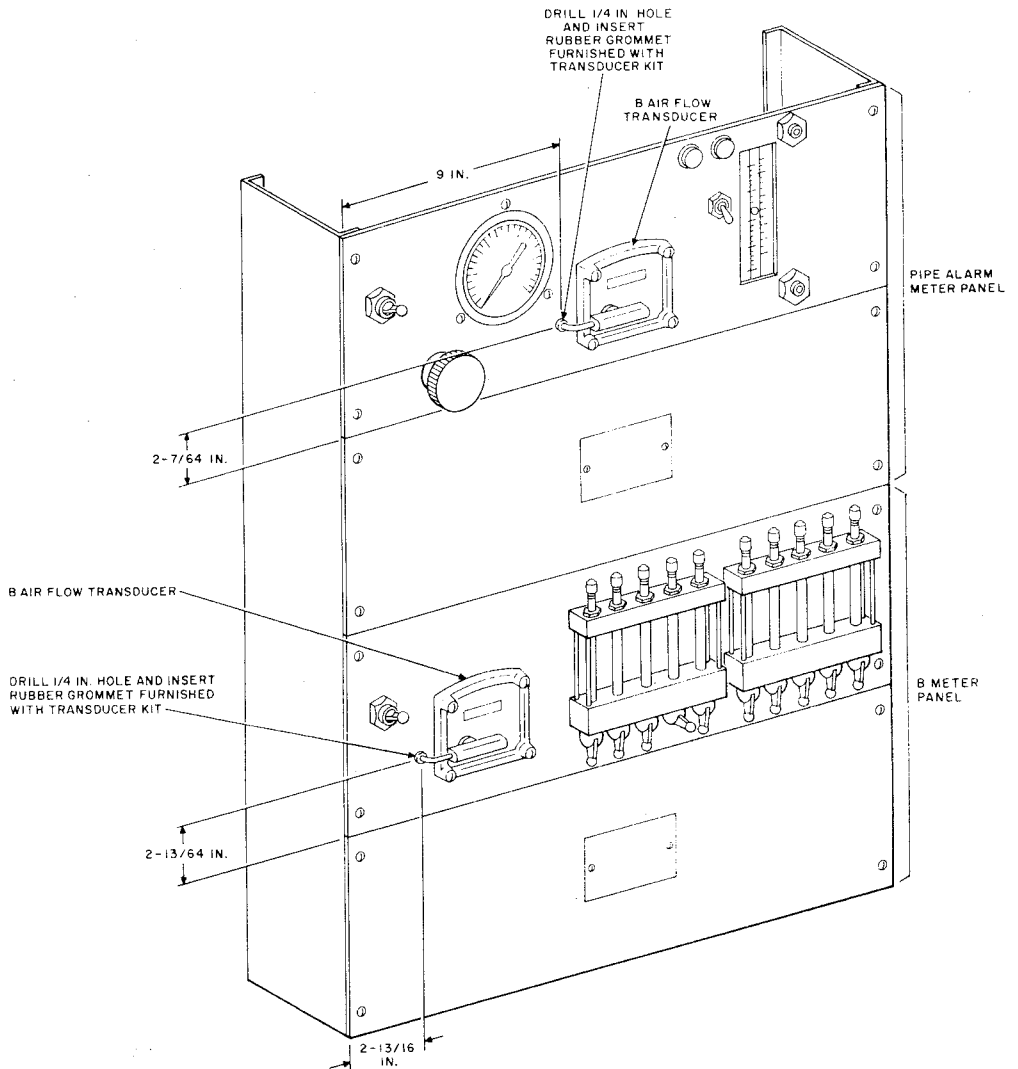


Fig. 2—B Airflow Transducer Installed on Pipe Alarm Meter Panel and B Meter Panel

3.02 For central office applications the transducer will be electrically connected to a 66M1-50 connecting block or equivalent, from the connecting block to the CPMS auxiliary terminal strip located on the horizontal main distribution frame (HMDF), trunk distributing frame, or auxiliary frame, and then to the CPMS remote terminal. These interconnections are shown in Fig. 3.

3.03 As an alternate method of interconnections for the central office transducer, the connections may be from the connecting block (66M1-50 or equivalent) directly to the CPMS remote terminal. This method is also shown in Fig. 3.

Mounting Transducer on Air Meter

3.04 The instructions for installing the B airflow transducer on an air meter are similar to panel mounting instructions except a 1/8-inch thick gasket is installed between the plastic cover and

meter housing (Fig. 1). This gasket is used to obtain the required distance between the disc magnet and dry reed switch, necessary for proper operation.

3.05 When the transducer is used with an air meter (Fig. 4) for monitoring pole-mounted air dryers, a dedicated pair to the central office terminating on the CPMS remote terminal is required. Splicing of the D station wire to the dedicated pair is as outlined on the engineer's work print. Interconnections of a remote transducer are shown in Fig. 3.

3.06 The CPMS remote terminal provides ground on the tip and -48 volts on the ring lead through a suitable current limiting resistance. For proper operation of the CPMS circuitry the loop resistance should not exceed 6000 ohms and the pair insulation resistance should exceed 100K ohms.

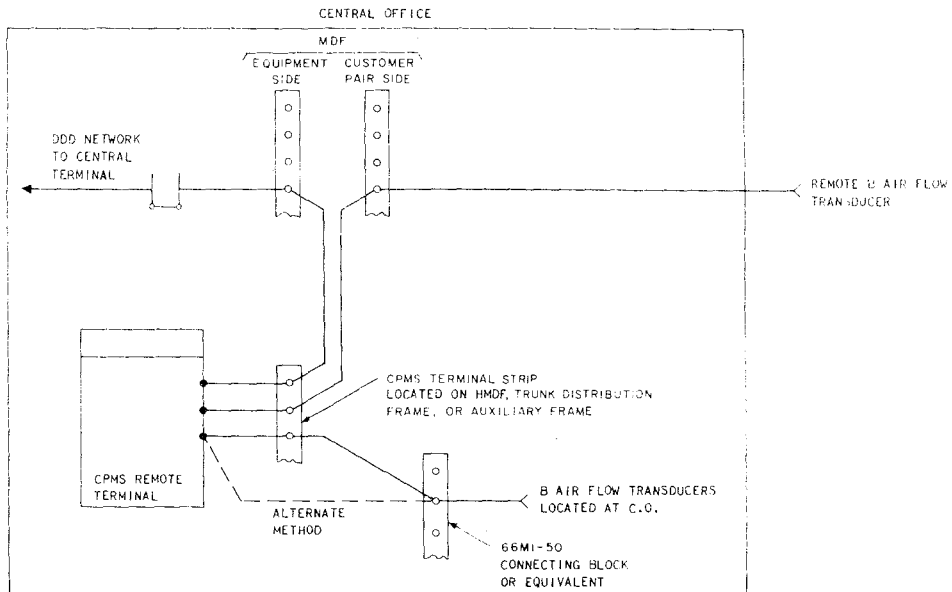


Fig. 3—Interconnections for Remote and Central Office B Airflow Transducers

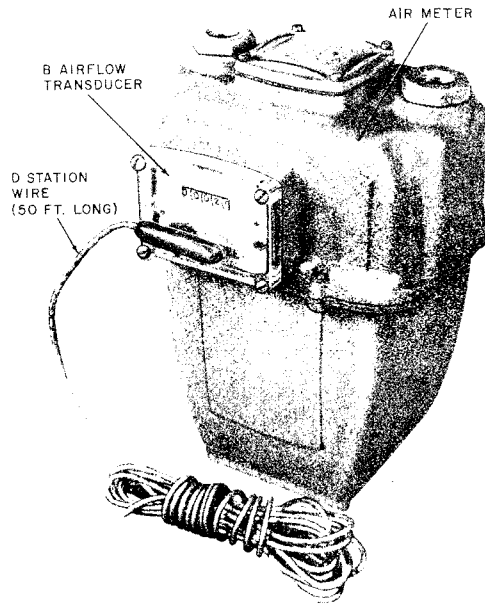


Fig. 4—B Airflow Transducer Installed on Air Meter