

SPECIAL SERVICE LINES PROTECTION AND TERMINATION OF DATA, TELEGRAPH, AND RADIO PROGRAM LOOPS

1. GENERAL

1.01 This section provides information on current and voltage limitation and protection of special service lines; and termination of data, telegraph, and radio program loop continuity indicators.

1.02 This section is reissued to change Fig. 1, 2, 3, 4, and 5 and to change the title of Fig. 6.

1.03 Special service lines as discussed in this section are cable and wire facilities furnished by the telephone company to connect with customer owned and maintained (COAM) and telephone company maintained (TCM) equipment, other than that used to provide exchange telephone service.

1.04 These special service circuits require special service protection (SSP) and/or special safeguard measures (SSM), as described in Section 460-110-100.

2. NORMAL CURRENT AND VOLTAGE LIMITATIONS

2.01 Table A shows maximum permissible values of current and voltage for leased facility operation. These values are generally acceptable from the standpoint of preventing injury to personnel, damage to plant, and interference with telephone facilities. These values are also representative of current and voltage ranges within which normal telephone equipment is designed to operate; therefore, the listed values should not be exceeded under normal operating conditions unless given special consideration.

3. ELECTRICAL PROTECTION

3.01 Special electrical protection may be required to limit the current and voltage that the customer equipment can deliver to the telephone plant, or in some cases, to minimize the effect

TABLE A

	DC	AC (rms)
Maximum voltage* Conductor to conductor	135V(270V†)	50V(100V†)
Maximum voltage* Conductor to ground	135V	50V
Maximum current‡ Any conductor	0.35A	0.35A

* These values apply to continuous dc and ac (low-frequency sine wave) voltages and are measured at point of connection to telephone facilities.

† Permitted only if the voltage source is center tapped to ground.

‡ Use of multiple conductors to limit the current per conductor to this value is not desirable.

that a momentary disturbance in the telephone plant can have on the customer equipment.

3.02 Special electrical protection, as called for on the service order or any attached memoranda, may be any of the following:

- (a) Drainage coils
- (b) Fuses (usually 60-type)
- (c) Resistors or ballast lamps
- (d) Transformers (neutralizing or isolating).

3.03 The special electrical protection described in 3.02 is in addition to the station protection required in an exposed plant.

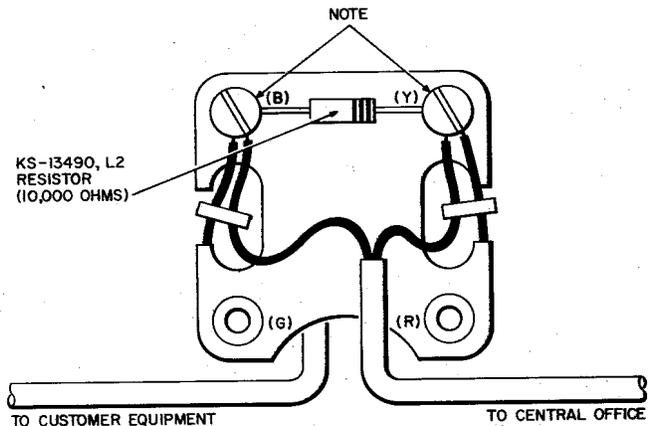
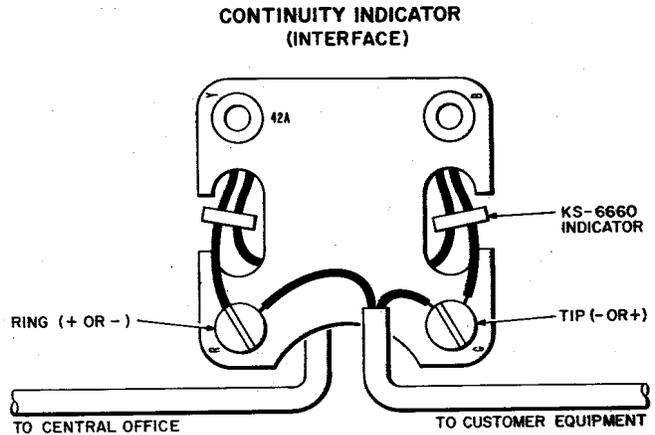
4. RADIO PROGRAM, TELEGRAPH, AND DATA LOOP CONTINUITY INDICATOR

4.01 The radio program, telegraph, and data loop continuity indicators provide the serving test center (STC) with a simple means of testing, without the need for personnel at the customer location, to determine whether a loop trouble condition is caused by the equipment or the conductor.

4.02 One basic radio program loop continuity indicator is available (Fig. 1). This indicator is suitable for either COAM or TCM facilities.

4.03 Three basic telegraph loop continuity indicator circuits are available, one for loops arranged for neutral operation (Fig. 2 and 4), one for loops arranged for polar operation where ground is obtained from the central office (Fig. 3 and 5), and one for loops arranged for polar operation where ground is obtained at the customer location (Fig. 6).

4.04 One basic ac (data) loop continuity indicator is available (Fig. 6). This indicator is suitable for either COAM or TCM facilities.



NOTE:
IF SCREWS ARE TOO SHORT REPLACE WITH NO 6-32 X 1/2 IN. PLATED RHM SCREW.

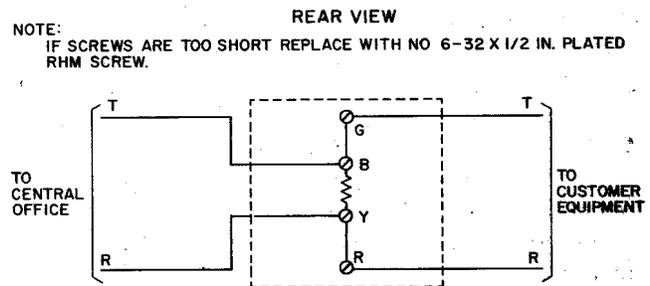


Fig. 1—Radio Program Loop Continuity Indicator

5. TERMINATION

RADIO PROGRAM LOOP TERMINATION

5.01 The radio program loop continuity indicator (Fig. 1) is mounted on the 42A connecting block used for terminating this type of circuit. The connecting block will be considered the interface between the telephone company and customer facilities. It will be identified as described in 5.05(d).

TELEGRAPH LOOP TERMINATION

5.02 For telegraph loops having TCM equipment, the continuity indicator shall be mounted on the terminating connecting block and installed as close to the equipment as possible. This block will be considered the interface. The indicators for neutral and polar operation, as shown in Fig. 2 and 3, respectively, or Fig. 6 will be used for this type of facility.

5.03 For telegraph loops having COAM equipment, the terminating connecting block will be mounted at the location agreed on by the customer and the telephone company and will be considered the interface. The continuity indicator and terminating connecting block connections for neutral operation are shown in Fig. 4 and those for polar operation in Fig. 5 and 6. In both cases the continuity

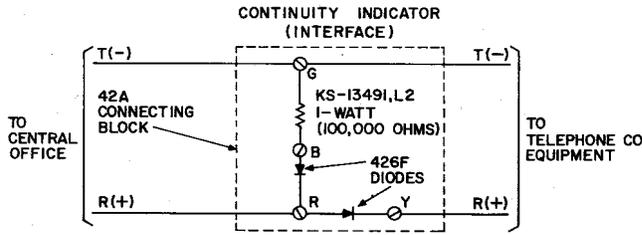


Fig. 2—Telegraph Loop Continuity Indicator—TCM Equipment, Neutral Operation

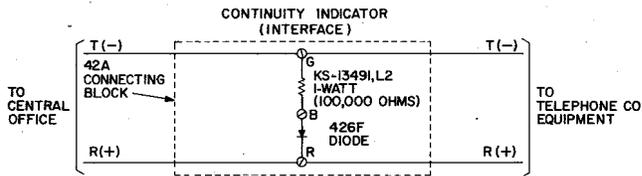


Fig. 3—Telegraph Loop Continuity Indicator—TCM Equipment, Polar Operation

indicator will be identified as telephone company property, and the terminating connecting block used as the interface will be identified as customer property, see 5.05(d).

DATA LOOP TERMINATION

5.04' The continuity indicator shown in Fig. 6 is used for data loops. For data loops having TCM equipment, the continuity indicator shall be mounted on the terminating connecting block and installed as close to the equipment as possible. For data loops having COAM equipment, the terminating connecting block will be mounted at the location agreed on by the customer and the telephone company and will be considered the interface. The continuity indicator will be identified as telephone company property, and the terminating connecting block used as the interface will be identified as customer property, see 5.05(d).

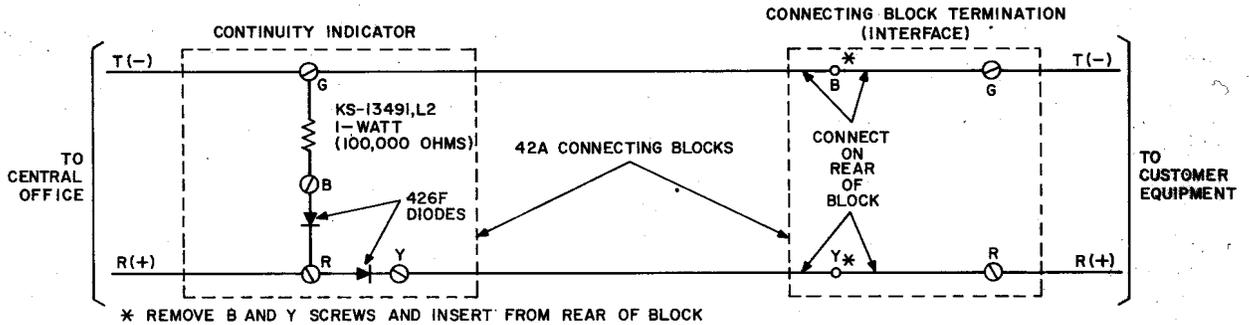


Fig. 4—Telegraph Loop Continuity Indicator—COAM Equipment, Neutral Operation

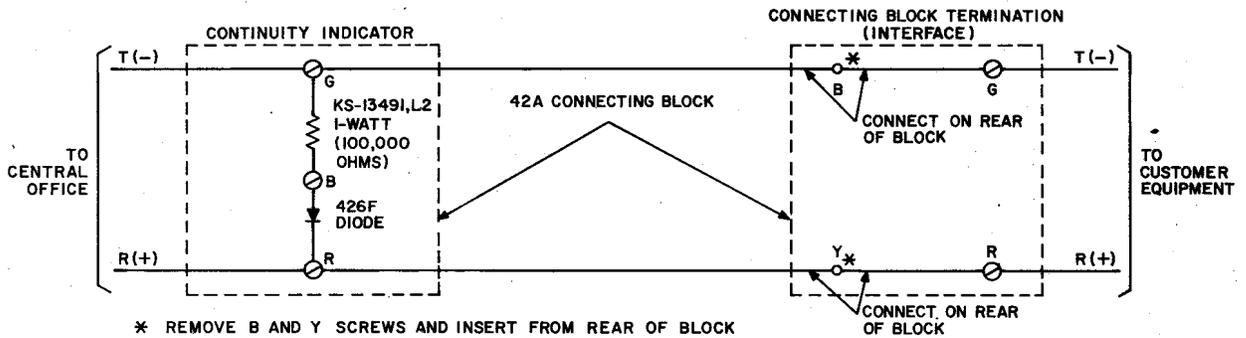


Fig. 5—Telegraph Loop Continuity Indicator—COAM Equipment, Polar Operation (For Alternate Arrangement see Fig. 6)

REQUIREMENTS

5.05 Observe the following requirements when making terminations:

- (a) The telephone company line must not be connected directly to the customer equipment. A connecting block must be installed between the last cable terminal and the customer equipment. This connecting block serves as the interface between the telephone company facilities and the customer owned equipment. The continuity indicator may be mounted on the continuity block or on a separate terminal facility.
- (b) Customer wiring must not be run into a cable terminal box.
- (c) An outside-type terminal must be used when the final termination is exposed to the weather.
- (d) A white linen tag, or equivalent, must be attached at the final termination. This tag is used to identify the circuit for the customer work force.

(e) The 426F diode(s) used in the telegraph and/or data loop continuity indicator (Fig. 2, 3, 4, 5 and 6) must be connected as shown to ensure correct polarity.

(f) When used for mounting the continuity indicator parts, the 42A connecting block must use a plastic cover. If the existing cover is metal, it must be replaced with a plastic cover.

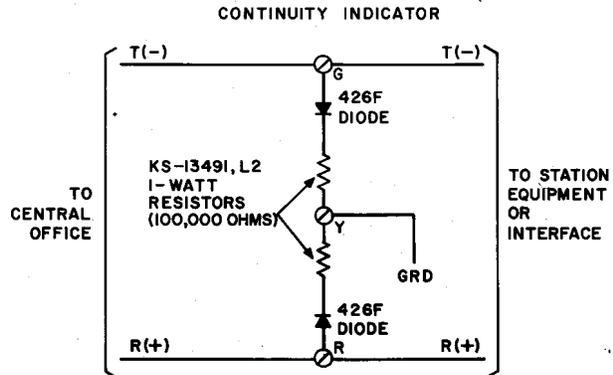


Fig. 6—Telegraph Loop, Polar Operation (Alternate Arrangement) or AC (Data) Continuity Indicator