MODEL 438L1
RINGER ISOLATOR

1. GENERAL

1.01 This section provides information on the Model 438L1 Ringer Isolator manufactured by Cook Electric Company. The Model 438L1 isolator is a 50-volt unit (GTE AE order No. 426867).

1.02 This section is reissued to supersede the Model 635L0 36-volt unit, the Model 181-0635 36-volt unit, the Model 438L0 6-volt unit, and the Model 181-0438 6-volt unit with the Model 438L1 unit. Due to the extensive changes involved, marginal arrows are omitted. Remove the previous issue of this section from the binder or microfiche file and replace it with this issue.

2. DESCRIPTION

2.01 The ringer isolator (Figure 1) is a solid-state device that controls circuit noise in the telephone caused by longitudinal current imbalance from the line to ground when divided ringing is used. The ringer isolator isolates the telephone ringer from line to ground except during the interval of ringing when ringing current is applied to the line. The Model 438L1 unit can also be used with bridged ringers to reduce dial-pulse distortion when it is not possible to reconnect the ringer to ground.

2.02 The unit is 1 by 0.5 by 1.25 inches and has four 7-inch-long color-coded leads. The components are mounted on a printed wiring card and are encased in a heat-shrunk jacket.

2.03 The unit has the following electrical characteristics:

(a) Minimum tip-to-ring trigger voltage for the Model 438L1 unit is approximately 50 Vrms. This eliminates false triggering due to noise.
(b) Maximum peak blocking noise voltage is 200 volts peak (140 Vrms).
(c) Minimum isolation resistance is 1 megohm.
(d) The unit cannot be used with superimposed ringing.
(e) The unit has a built-in radio-frequency-interference suppressor.
(f) The unit has little effect on the ringing voltage available for the ringer.

3. INSTALLATION

Mounting Locations

3.01 Procedures for installing the ringer isolator vary between telephones. The objective is to prevent movement of the unit within the telephone. Suggested mounting locations for the unit are as follows:

(a) For the GTE AE Type 80, 80E, 90M telephone sets, or various key telephone sets, position the unit on the base next to the transmission network.
(b) For the GTE AE Type 182A or 192A telephone sets, position the unit in the base where the dial lamp switch is normally positioned.
(c) For the GTE AE Type 981 or 982 telephone sets, position the unit in the center of the transmission network.
(d) For the GTE AE Type 33 ringer box, tape the unit to the ringer capacitor.

3.02 To connect the ringer isolator to the circuit of a Type 80 or 90M telephone, refer to Figure 2 and proceed as follows:

(a) Remove the GRN ringer lead from transmission network terminal 16.
(b) Move the RED ringer lead from transmission network terminal 15 to transmission network terminal 16.
(c) Move the capacitor lead from transmission network terminal 9 to transmission network terminal 15.
(d) Using a connector, connect the GRN ringer lead to the BLK ringer isolator lead and tape the connection.
(e) Connect the YEL ringer isolator lead to transmission network terminal 9 (GRD).
(f) Connect the GRN ringer isolator lead to transmission network terminal 8 (T).
(g) Connect the RED ringer isolator lead to transmission network terminal 10 (R).

3.03 To connect the ringer isolator to the circuit of a Type 80E telephone, refer to Figure 2 and proceed as follows:

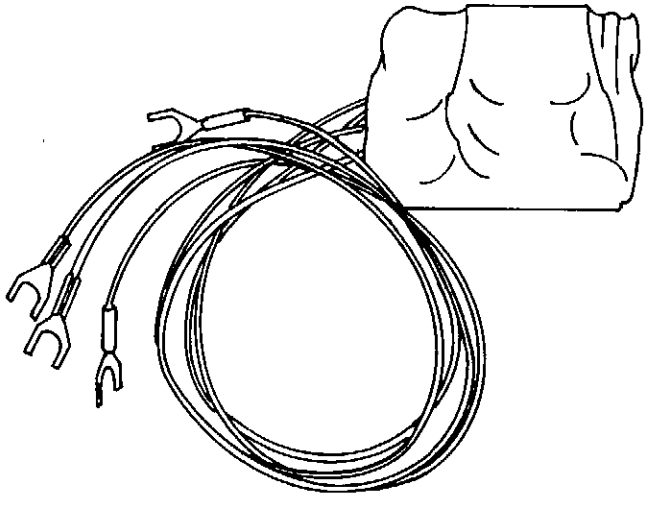


Figure 1. Ringer Isolator in Jacket.

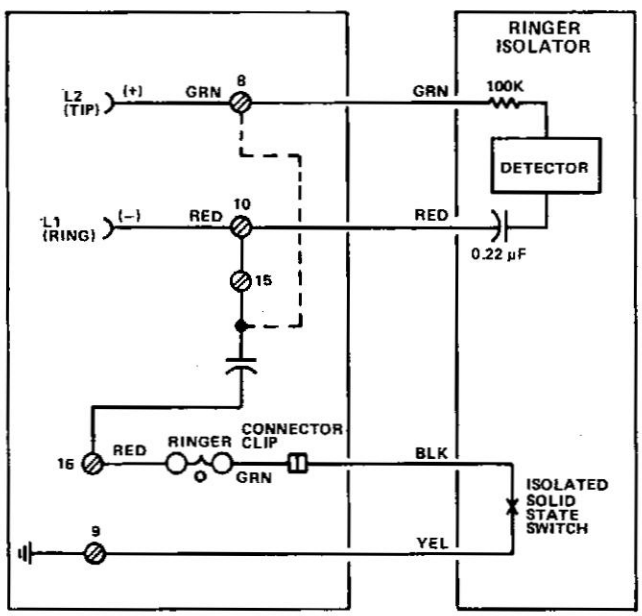
(a) Remove the GRN ringer lead from transmission network terminal 16.
(b) Move the RED ringer lead from transmission network terminal 10 to transmission network terminal 16.
(c) Move the capacitor lead from transmission network terminal 8 to transmission network terminal 10.
(d) Using a connector, connect the GRN ringer lead to the BLK ringer isolator lead and tape the connection.
(e) Connect the YEL ringer isolator lead to transmission network terminal 9 (GRD).
(f) Connect the GRN ringer isolator lead to transmission network terminal 8 (T).
(g) Connect the RED ringer isolator lead to transmission network terminal 10 (R).

3.04 Connections of the ringer isolator to the circuit of other telephones for tip and ring service should be made in a similar manner.

ANI Operation

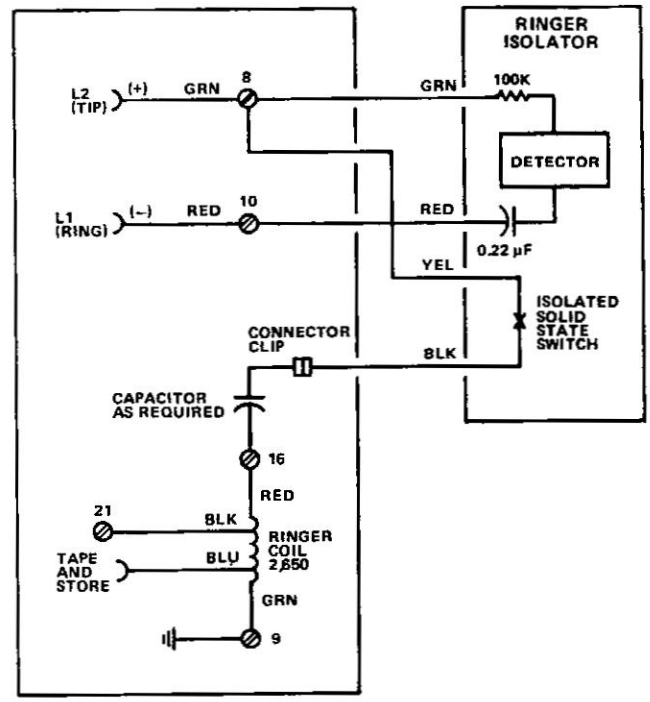
3.05 To provide tip party ANI to a Type 80 or 90M telephone equipped with a ringer isolator and a Type 46A or Type 48 ringer coil, refer to Figure 3 and proceed as follows:

(a) Connect the YEL ringer isolator lead to transmission network terminal 8 (T).
(b) Remove the capacitor from transmission network terminal 9.



NOTES:
1. CONNECTIONS SHOWN FOR RING STATION. FOR TIP STATION, MOVE CAPACITOR LEAD FROM TERMINAL 15 TO TERMINAL 8 FOR THE TYPE 80 AND 90M TELEPHONES; MOVE CAPACITOR LEAD FROM TERMINAL 10 TO TERMINAL 8 FOR THE TYPE 80E TELEPHONE (DASHED LINE).
2. QUICK-CONNECT TERMINALS ARE USED ON TYPE 80E TELEPHONES.

Figure 2. Ringer Isolator Connections.



NOTES:
1. QUICK CONNECT TERMINALS ARE USED ON THE TYPE 80E TELEPHONES.
2. PRIOR TO OCTOBER 1976 THE 2,650 OHM COIL PORTION OF THE TYPE 46A RINGER WAS CONNECTED BETWEEN THE RED AND BLK LEADS.

Figure 3. Connections for ANI Service.

(c) With a connector clip and insulating sleeve, connect the BLK ringer isolator lead to the free capacitor lead.
(d) Connect the RED ringer isolator lead to transmission network terminal 10 (R).
(e) Connect the GRN ringer isolator lead to transmission network terminal 8 (T).
(f) Move the GRN ringer lead from transmission network terminal 16 to transmission network terminal 9.
(g) Move the RED ringer lead from transmission network terminal 15 to transmission network terminal 16.
(h) Secure the ringer isolator assembly to the telephone.
(i) Connect the BLK ringer lead to transmission network terminal 21.

3.06 To provide tip party ANI to a Type 80E telephone equipped with a ringer isolator and a Type 46A or Type 48 ringer coil, refer to Figure 3 and proceed as follows:

(a) Connect the YEL ringer isolator lead to transmission network terminal 8 (T).
(b) Remove the capacitor from transmission network terminal 8.
(c) With a connector clip and insulating sleeve, connect the BLK ringer isolator lead to the free capacitor lead.

(d) Connect the RED ringer isolator lead to transmission network terminal 10 (R).
(e) Connect the GRN ringer isolator lead to transmission network terminal 8 (T).
(f) Move the GRN ringer lead from transmission network terminal 16 to transmission network terminal 9.
(g) Move the RED ringer lead from transmission network terminal 10 to transmission network terminal 16.
(h) Secure the ringer isolator assembly to the telephone.
(i) Connect the BLK ringer lead to transmission network terminal 21.

3.07 For ANI service when the ringer is not used and the D-284686-C inductor is used to provide a 2,650-ohm inductive mark, connect the ringer isolator as described in paragraph 3.02 or 3.03. The inductor is connected between terminals 9 and 21 of the transmission network using the GRY and BLK leads, respectively.