

**BELL SYSTEM PRACTICES**  
**Teletypewriter Stations**

**SECTION P31.328**  
**Issue 2, November, 1957**  
**AT&TCo Standard**

## **INSTALLATION OF TP114965 FILTER UNIT FOR LINE RELAY OF 15 AND 20 TELETYPEWRITERS**

### **1. GENERAL**

1.01 This section furnishes information for the installation of the TP114965 filter unit on the line relay of the 15 and 20 teletypewriters. It replaces the TP92227 filter unit. The function of this filter unit is to suppress radio frequency induction from the contacts of the line relay. The TP114965 filter has lead encased condensers designed to withstand higher operating temperatures than those of the TP92227 filter unit.

1.02 This section is reissued to show the latest code numbers for the parts involved and to delete reference to the 82018M filter unit. This section replaces Sections P31.310 and P31.311. Because of the many changes, marginal arrows have been omitted.

1.03 The TP114965 filter unit consists of the following parts:  
1—TP114966 Filter Assembly  
2—TP74014 Screws  
1—TP74614 Resistor (600-2000 ohms)

### **2. INSTALLATION**

2.01 Mount the filter unit as follows:

(1) If the teletypewriter base is equipped with a TP82868 resistor and bracket assembly, remove and discard the TP82865 bracket. Also discard the two TP74014 screws furnished with the set of parts. Retain and mount the TP81775 resistor (8000 ohms) on the filter bracket at the tapped hole, using the previously removed mounting screw, washers and lock washer.

(2) If the teletypewriter base is not equipped with a TP82868 assembly, secure the TP74719 relay base to the TP74422 bracket, by replacing the two TP6745 screws

with the TP74014 screws furnished. Retain the two TP112626 nuts and TP2669 lock washers.

(3) Place the TP114966 filter unit over the ends of the TP74014 screws (which protrude through the relay base) and fasten it by means of the previously removed TP2669 lock washers and TP112626 nuts so that it extends to the front of the relay mounting plate and upward from the TP74014 screws.

(4) Replace the TP75436 resistor (1000-2000 ohms) with the TP74614 resistor furnished (600-2000 ohms). The 2000-ohm end of the resistor should be adjacent to the relay mounting plate.

### 3. WIRING INSTRUCTIONS

3.01 **Connections for Neutral Operated Line Relay are as follows** (see Fig. 1): For left-hand, right-hand, upper and lower, front and rear locations specified in the following test, refer to the observer's left or right when viewing the teletypewriter base from the position of an operator.

(1) Connect the wire from the 1/4 mf capacitor in the base and wire from terminal No. 1 of the relay connecting block to the left-hand end terminal (600-ohm side) of the rear 600-2000-ohm resistor.

(2) Connect the wire from terminal No. 63 to the center terminal of the rear 600-2000-ohm resistor.

(3) If a TP81775 resistor (8000 ohms) is not present, connect wire from terminal No. 2 of relay connecting block to the right-hand terminal (2000-ohm side) of the rear 600-2000-ohm resistor.

(4) If a TP81775 resistor is present connect its front terminal to the right-hand terminal (2000-ohm side) of the rear 600-2000-ohm resistor and connect the same terminal of the 8000-ohm resistor to terminal No. 2 of the relay connecting block for 0.060 amp line current. For 0.020 amp line current, the wire from No. 2 terminal of relay connecting block should be connected to the rear terminal of the 8000-ohm resistor.

(5) Unsolder the wire from terminal No. 5 of the relay connecting block and splice it to the blue wire from the front terminal of the lower 400-ohm resistor on the filter assembly. (Twist, solder, and tape.)

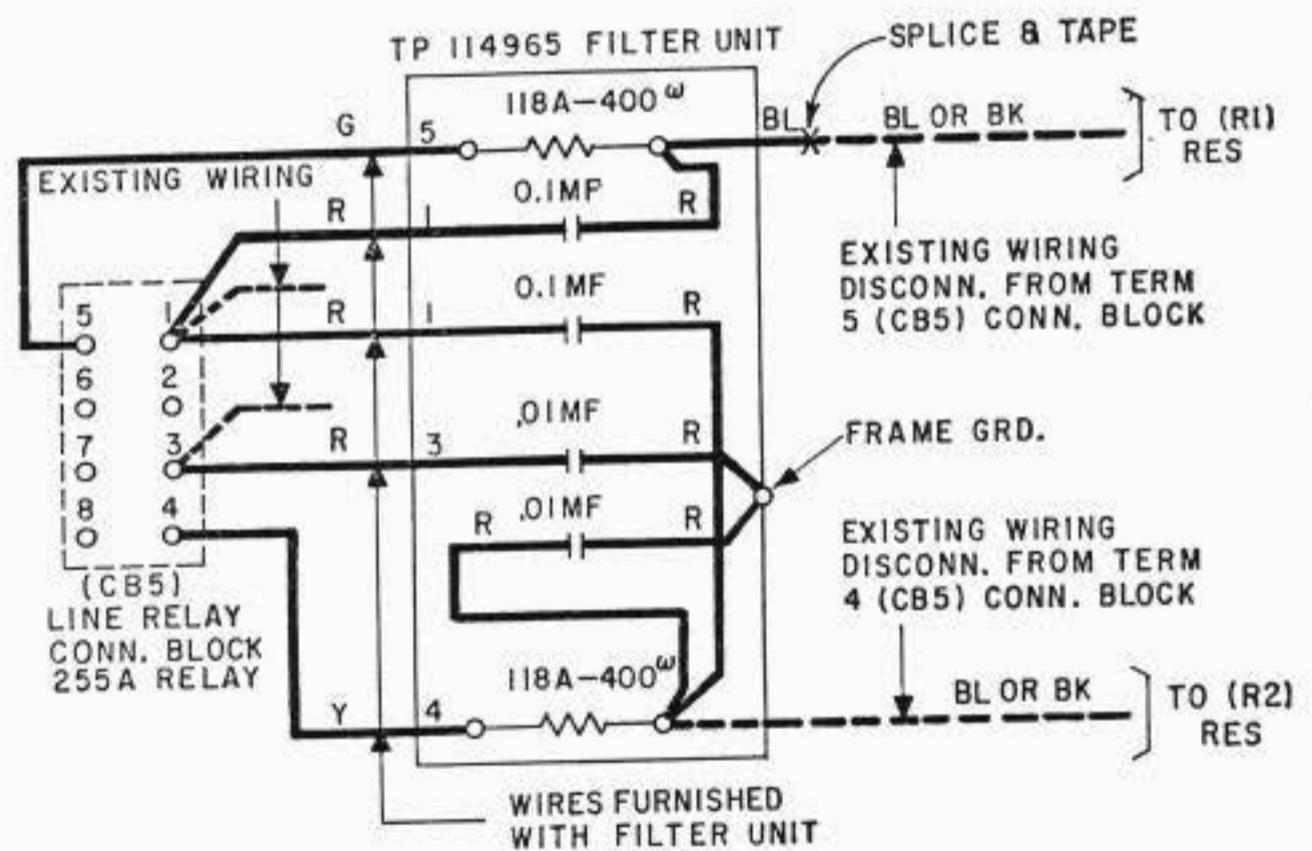
(6) Connect the green wire from the rear terminal of the lower 400-ohm resistor to terminal No. 5 of the relay connecting block. This wire should be run as direct as

practicable and be separated from other wires at least 1/4 inch.

- (7) Connect the red lead from the lower capacitor (0.01 mf) of the TP114965 filter unit to terminal No. 3 of the relay connecting block. This wire should be separated as much as practicable from adjacent wires.
- (8) Connect the common lead from the two 0.1 mf capacitors to terminal No. 1 of the relay connecting block.
- (9) Unsolder the wire from terminal No. 4 of the relay connecting block and connect it to the front terminal of the upper 400-ohm resistor.
- (10) Connect the lead from the rear end of the upper 400-ohm resistor to terminal No. 4 of the relay connecting block.

**3.02 Connections for polar-operated line relay with both windings in series are the same as in 3.01 with the following exception:**

- (1) Connect the red lead in Item (7) of 3.01 to terminal No. 2 instead of No. 3 of the relay connecting block. Run wire as direct as possible and keep separated as much as practicable from adjacent wiring.



**Fig. 1**