

SWITCH-270A

IDENTIFICATION, INSTALLATION, CONNECTIONS, AND MAINTENANCE

1. IDENTIFICATION

(a) **Purpose**—Provides for automatic connection of either one or two CO, PBX, or Centrex lines to a telephone set. *Intended solely for use with specially engineered lines—not for general telephone use.*

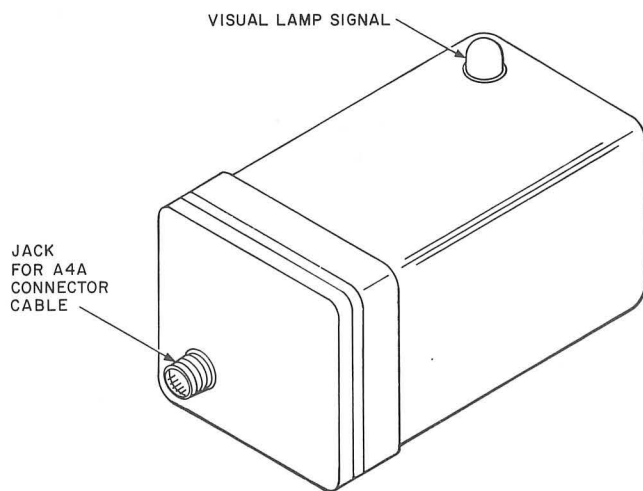


Fig. 1—270A Switch

(b) Ordering Guide

- Switch, 270A
- Cable, Connector, A4A—shielded input cable for CO, PBX, or Centrex lines, power and ground leads. Installed between 270A switch and distribution point or filter container. Available in 50-, 100-, or 200-foot lengths.
- Cord, M4AJ—output cord used between 270A switch and desk-type telephone set. Replaces cord normally supplied with set. Supplied in 4-foot lengths.

- Cord, M4AK—output cord used between 270A switch and wall-type telephone set. Supplied in 10-foot lengths.
- Cable, Connector, A1A—used for connections between R1A ringer and telephone line. Available in 50-, 100-, or 200-foot lengths.
- Transformer, 2012B.

Note: Connector cables, cords, and transformer must be separately ordered but will be shipped with the 270A switch. Specify length of cables when ordering.

(c) Design Features

- Can be used with any standard one or two line desk- or wall-type telephone set.
- Provides automatic connection to line when handset is taken off-hook and disconnection when handset is restored.
- Visual lamp signal (part of switch) when lighted indicates connection to line.
- Can be used with KS-20161 or KS-20162 filters for treatment of transmission and control leads. Refer to Section 529-130-100 for information on the filters.

2. INSTALLATION

- (a) Install the 270A switch convenient to user and where visual lamp signal can be seen at all times.
- (b) When using a desk-type telephone set, replace cord supplied with the set with a M4AJ cord which is equipped with a special connector for the 270A switch.

- (c) Wall-type sets are connected to the switch using a M4AK cord, also equipped with the special connector.

Caution: When wiring telephone sets and 270A switch, arrange wiring to avoid paralleling. Maintain an absolute minimum clearance of 3 feet between the input connector cable and output cord.

- (d) When necessary to connect the power supply or R1A ringer near the telephone set, the A4A connector cable should be cut and bridged on a 44A connecting block before continuing to distribution point or filter container.
- (e) Any unused conductors and the shielding in the A4A and A1A connector cables should be physically grounded at one end only. All grounds should be at the ground plane established by the customer.
- (f) The telephone set ringer is not used with the 270A switch. All set ringer leads should be disconnected, insulated, and stored. An R1A ringer (Fig. 2) must be installed external to the telephone set for each line where an incoming signal is required. When a 44A connecting block or equivalent is installed near the set; the R1A ringer can be connected to the line at the block using the A1A connector cable. Otherwise the cable must be run to the distribution point or filter container.

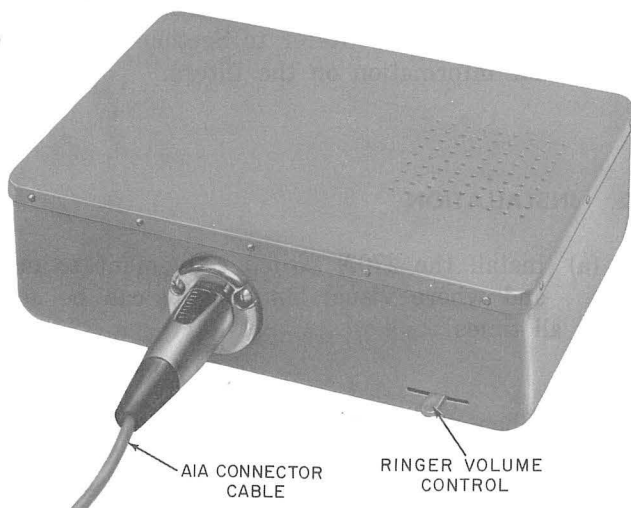


Fig. 2—R1A Ringer

- (g) The R1A ringer is supplied with a mounting plate having slots for the tabs on the rear of the ringer. This permits mounting the ringer on a vertical surface, such as a wall or side of a desk. When mounted on a metal surface, use a suitable wooden backboard under the mounting plate. When required the ringer may be removed by disconnecting the plug on the A1A connector cable.

- (h) The 270A switch is designed to lay unattached on a desk or table or it can be mounted on a vertical surface using the keyhole slots on the rear of the switch. Pads are supplied with the switch that can be applied to prevent marring of desk tops when using the switch unattached. When mounted on a metal surface, use a suitable wooden backboard.

- (i) The 270A switch requires either 18 volts ac or 20 volts dc. The ac voltage can be supplied by a 2012B transformer, using a separate transformer for each switch. The dc voltage may be supplied from a key telephone system power supply, if available. Drain should be figured at 50 mils of current for each 270A switch.

Note: Do not use the 18-volt ac tap of a power supply having a grounded secondary. Using a grounded supply will burn out one of the rectifier diodes located within the 270A switch case.

- (j) Power leads from the transformer or power supply must be brought to the 44A connecting block, distribution point, or filter container for connection to designated leads in the A4A connector cable (see Fig. 4). Do not run directly to telephone set.

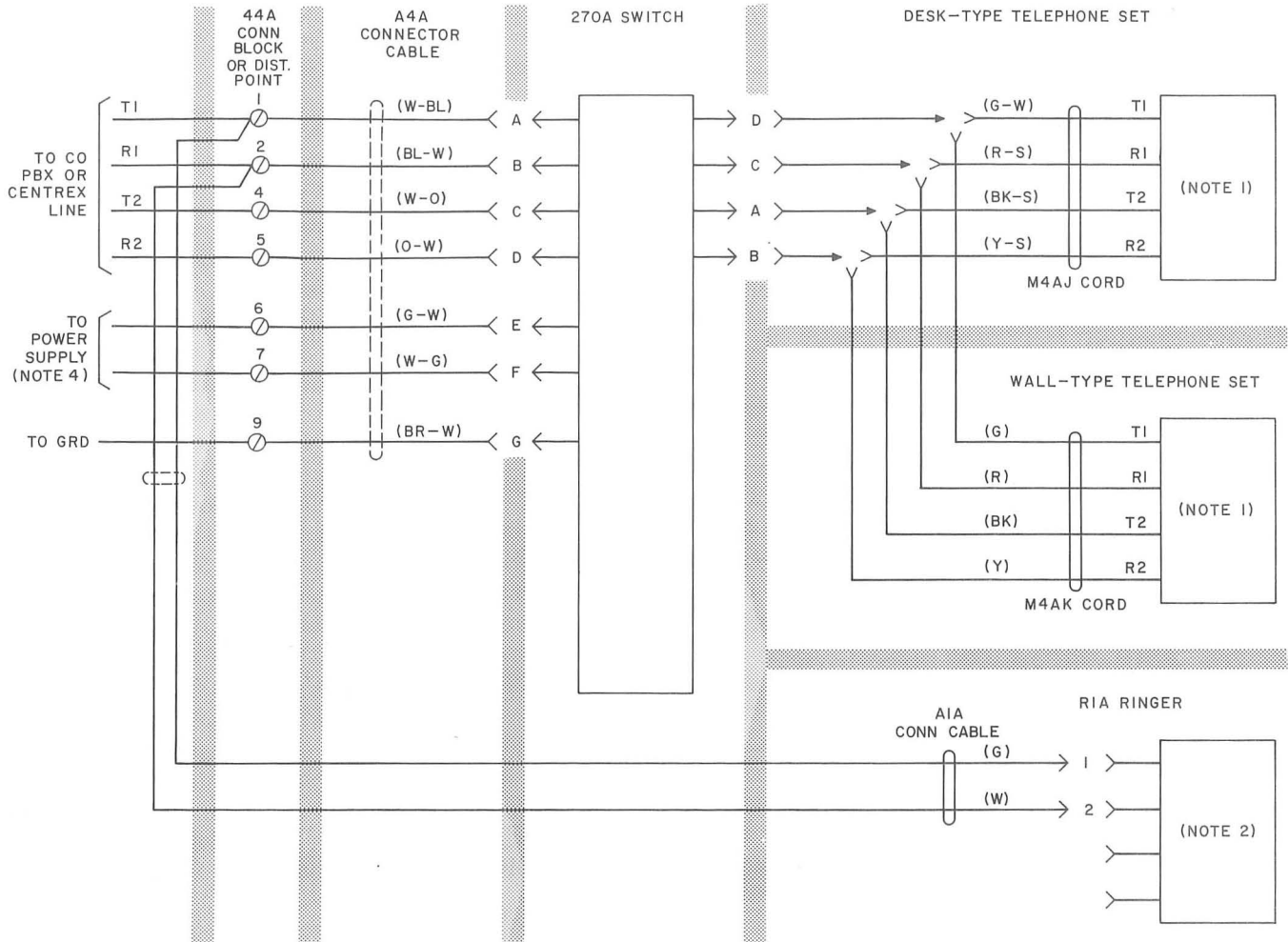
- (k) The power supply loop resistance should be limited to a maximum of 50 ohms.

3. CONNECTIONS



No connections other than those specified in this section shall be made.

- (a) Connect the 270A switch as shown in Fig. 3.



NOTES:

1. EITHER 1- OR 2-LINE TELEPHONE SETS MAY BE USED.
2. RINGER SHOWN CONNECTED TO LINE 1. RINGER MAY BE CONNECTED TO LINE 2 AT CONNECTING BLOCK OR DISTRIBUTION POINT OR RINGERS MAY BE CONNECTED TO EACH LINE WHEN DESIRED.

3. ANY UNUSED LEADS SHOULD BE CONNECTED TO GROUND AT THE DISTRIBUTION POINT GROUND PLANE.
4. SEE FIG. 4 FOR POWER CONNECTIONS.

Fig. 3—270A Switch, Connections

4. MAINTENANCE

(a) Maintenance of installations using the 270A switch is confined to replacement of the following:

- 270A switch
- 51A lamp in 270A switch
- Input connector cables and output cords

- 2012B transformer

- Associated telephone set



The 270A switch is a factory sealed unit. Do not attempt to disassemble, alter, repair, or adjust. If defective, replace entire unit.

- (b) The visual lamp signal on the 270A switch should light whenever the telephone handset

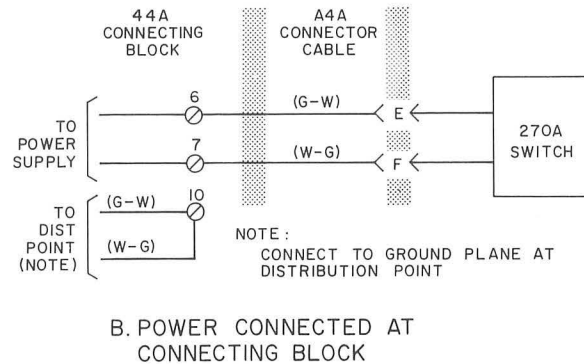
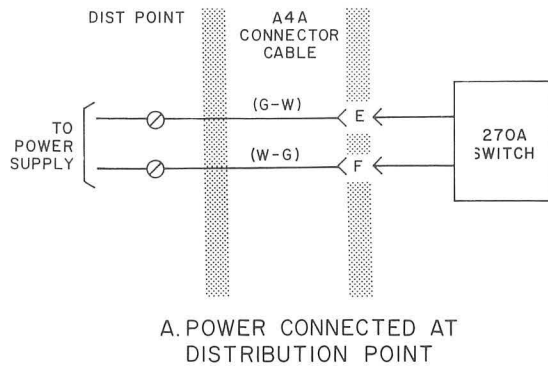


Fig. 4—Power Supply Connections

is off-hook and connection to Central Office is established. Connection to line cannot be made if lamp is open. If lamp filament is short-circuited, connection can be made but lamp will not light indicating a trouble condition.

(c) To replace 51A lamp:

- Unscrew lens counterclockwise
- Remove lamp, using 553A tool if necessary
- Insert new lamp and replace lens

(d) All 270A switches removed from service should be returned to the Superintendent of Supplies or equivalent for return to the Western Electric manufacturing organization where the units were built. Removed units should be accompanied by a Returned Material Notice (RMN). The RMN should clearly show the service order (where applicable), telephone number or other station identification for maintenance replacements, description of the unit, and reason for removal, e.g. "SWITCH DEFECTIVE" or "WORKING STATION REMOVED FROM SERVICE".