

BELL SYSTEM PRACTICES
Teletypewriter and Manual Telegraph
Station and P.B.X.
Installation and Maintenance

SECTION P31.225
Issue 2, May, 1934
Standard

No. 125

TELETYPEWRITER SUBSCRIBER SET

1. GENERAL

1.01 The 125 teletypewriter subscriber set consists of auxiliary equipment to be associated with a teletypewriter to adapt it for TWX operation. This subscriber set is used where attended-only TWX service is given.

1.02 The following features are provided:

- (a) A bell signal (ordinary telephone ringer) for calling the subscriber.
- (b) A power switch to start the teletypewriter and disconnect the ringer.

1.03 Two models are provided.

- (a) 125-A-1 TTY subscribers set which is suitable for use only on loops to the No. 1 teletypewriter switchboard which operate on a normally open basis.
- (b) 125-A-2 TTY subscribers set which is similar to the 125-A-1 set except that it may be used on normally closed loops as well as on normally open loops.

1.04 This section is reissued to include the following items.

- (a) Description of the 125-A-2 TTY subscriber set.
- (b) Description and mounting of the wave shaping network resistance for the 125-A-1 set.
- (c) Teletypewriter features for use with the No. 125 sets.

2. DESCRIPTION OF 125-A-1 SET

2.01 The equipment consists primarily of a ringer and a power switch mounted in a box which is fastened to the right-hand side of the teletypewriter table. A view of the 125-A-1 set associated with a No. 15 teletypewriter is shown by Figure 6.

2.02 A schematic circuit of the 125-A-1 set is shown by Figure 1 and the detailed wiring is covered in a circuit label inside the cover of the set. In Figure 1, the power switch is shown in the "OFF" position. In this position the tip side of the line is connected through the teletypewriter to ground and the ring side of the line is connected through the ringer and power switch to ground.

2.03 When the switchboard operator wishes to call the subscriber, ringing voltage is applied to the ring side of the line and the ringer is operated.

2.04 To answer a call, the power switch is operated to the "ON" position. This applies power to the teletypewriter, removes the ground, connects the tip and ring sides of the line through the teletypewriter and short-circuits the ringer.

2.05 To make a local test of the teletypewriter the line-test key should first be operated to "test" and then the power switch in the 125-A-1 set operated to "ON." Under this condition the subscriber line is open and an incoming signal can not be received. If the station is to be kept out of service for more than 1 or 2 minutes it should first be reported "out of order."

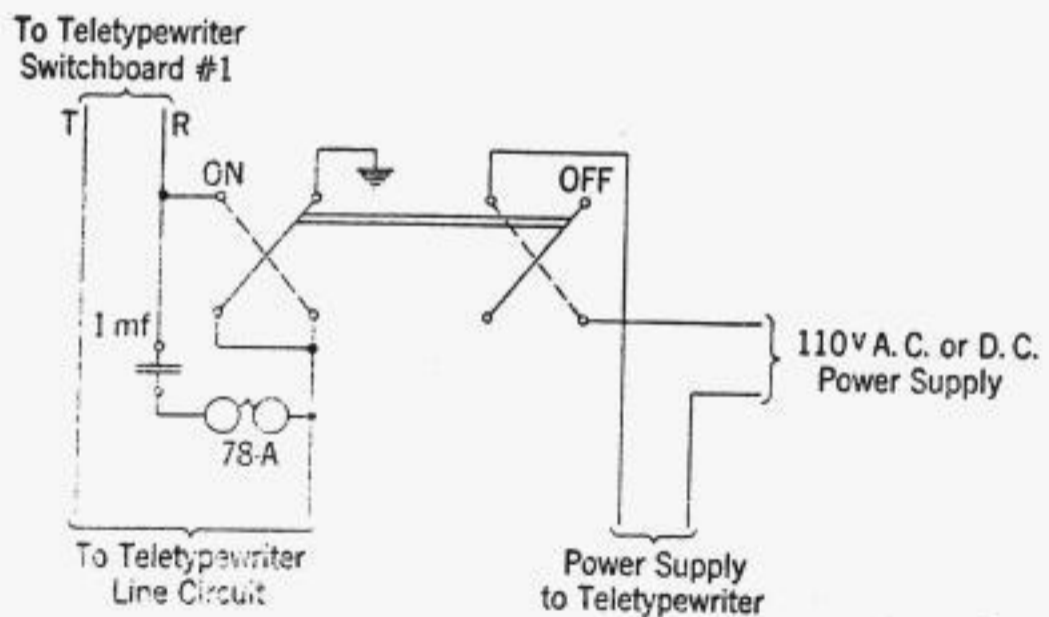


Fig. 1—125-A-1 Set

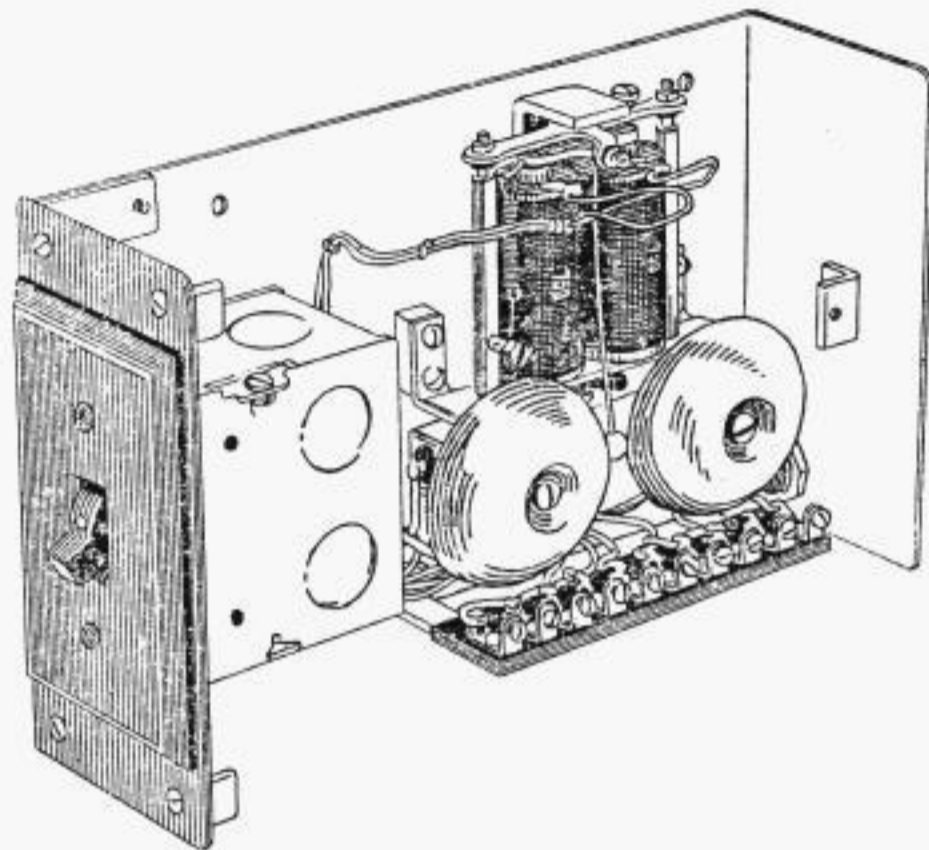


Fig. 2—125-A-1 Set

3. WAVE SHAPING NETWORK—125-A-1 SET

3.01 Resistance values of 600 ohms, 1,200 ohms, or 1,600 ohms may be specified in the service order for use in connection with the 125-A-1 set.

3.02 An 18-CY resistance may be used to provide the 1,600-ohm value and a 19-EY resistance to provide either 600 or 1,200 ohms.

3.03 If these resistances are not readily available other 19-type or 18-type resistances, having the proper rated resistance and an accuracy of ± 5 per cent. or better, may be used as indicated in the following table:

	Recommended	Alternates
600 value	19-EY	18-GH
1200 value	19-EY	19-PS or 18-BJ
1600 value	18-CY	19-PS or 19-EW

3.04 The resistance is not provided in the set but should be mounted in the resistance jack provided in the teletypewriter base between terminals 33 and 34.

4. TELETYPEWRITER FEATURES—125-A-1 SET

4.01 A teletypewriter having the following features may be used with the 125-A-1 set for TWX service.

Item	No. 15	No. 14
(1) Resistance in the local test circuit in the teletypewriter base.	5,300 ohms.	5,300 ohms.
(2) Resistance in the relay biasing circuit.	12,000 ohms.	12,000 ohms.
(3) Strap on line test key which short circuits the line in the test position.	Removed.	Removed.
(4) Strap between terminals 35 and 43.	Does not apply.	For No. 14 only.
(5) TTY Base Terminals 9 and 10.	Strapped.	Does not apply.
(6) Power switch.	Circuit shorted at switch.	Shorted by strap between terminals 21 and 22.
(7) Blank function lever to prevent printing and spacing on blank selection.	Installed.	Does not apply.
(8) Teletypewriter line relay.	209 - FB (formerly 209 relay per D-91711).	209 relay per D-94954.
(9) End - of - line indicator.	Does not apply.	Installed.
(10) Type bars and pull bars for upper and lower case commas and periods removed.	Does not apply.	Removed.

(11) Type character arrangement.	Arrangement C.	Arrangement C.
(12) Coded teletypewriters employed with this set.	15-DA, 15-DK, 15-DD.	14-DE.

5. DESCRIPTION OF 125-A-2 SET

5.01 The 125-A-2 set is similar to the 125-A-1 set, except for the features indicated below, and the general description of the 125-A-1 applies also to the 125-A-2.

- (a) Employs the 78-AA ringer with the coils arranged for either series or parallel connection.
- (b) Has 91-A resistance for wave shaping network mounted in the set.
- (c) A 1 mf. condenser (1149-A) is not included with the set, but space is provided for mounting it.

5.02 Figure 3 shows a typical schematic arrangement of the 125-A-2 set. The actual arrangement of the set for various services is shown in another section covering the installation connections.

5.03 With the 125-A-2 set the 14 or 15 teletypewriter may be tested locally as shown below. This arrangement leaves the ringer on the line and an incoming signal may be received.

1. Remove the line plug from the "Red" jack and insert it in the "Black" jack.
2. Operate the line-test key to test.
3. Operate the power switch of the 125-A-2 set to the "ON" position.

5.04 For the 19 teletypewriter set the teletypewriter may be tested locally in the normal manner, leaving the switch in the 125-A-2 set in the "OFF" position.

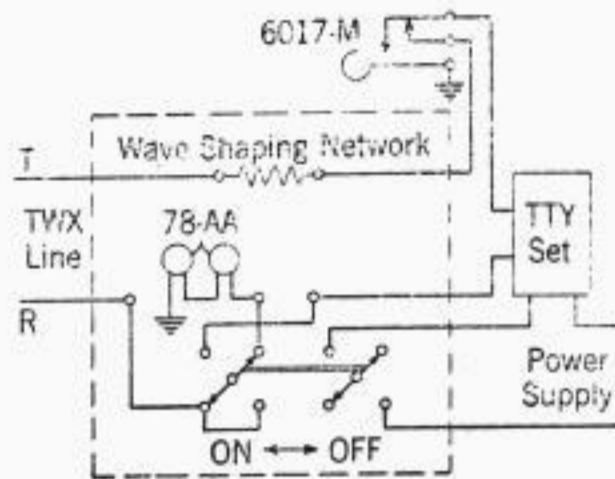


Fig. 3
125-A-2 Set
A typical arrangement

6. TELETYPEWRITER FEATURES—125-A-2 SET

6.01 When employed on subscriber lines to the No. 1 TTY switchboard, employing 20 mil line current, the teletypewriter features are the same as those shown in Part 4 for the 125-A-1 set.

6.02 A teletypewriter having the following features may be used with the 125-A-2 set on subscriber lines employing 60 mil line current.

Item	No. 15	No. 14
1. TTY base terminals 9 and 10.	Strapped.	Does not apply.
2. Power switch.	Circuit shorted at switch.	Circuit opened at switch.
3. Relay biasing circuit resistance.	4,000 ohms (8,000-ohm - resistance strapped — not done in factory).	4,000 ohms.
4. Local test circuit resistance.	1,600 ohms (3,700-ohms removed from circuit—not done in factory).	2,000 ohms.

Item	No. 15	No. 14
5. Blank function lever to prevent printing and spacing on blank selection.	Required.	Does not apply.
6. Line relay.	Requires 215-A relay in teletypewriter.	Requires 215-A relay in teletypewriter.
7. End-of-line indicator.	Does not apply.	Required.
8. Type bars and pull bars for upper and lower case commas and periods.	Does not apply.	Omitted.
9. Type character arrangement.	Arrangement C.	Arrangement C.
10. Coded teletypewriters employed with this set.	15-DA, 15-DK, 15-DD.	14-DE.

7. ADJUSTING REQUIREMENTS

7.01 Information for adjusting the ringer is given in Bell System Practices—Station Installation and Maintenance, except for the adjustment of the biasing spring which is covered in the section of the P series covering tests on TWX Subscriber Stations.

8. INSTALLATION

8.01 The mounting of the 125-A-1 subscriber set on a 14-B or a 15-A teletypewriter table is shown by Figures 4 and 5.

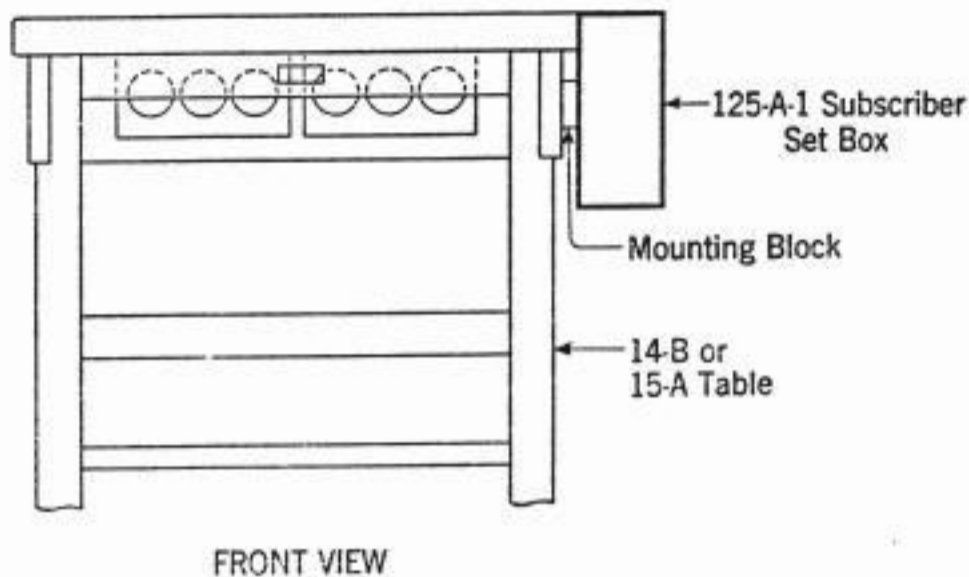


Fig. 4

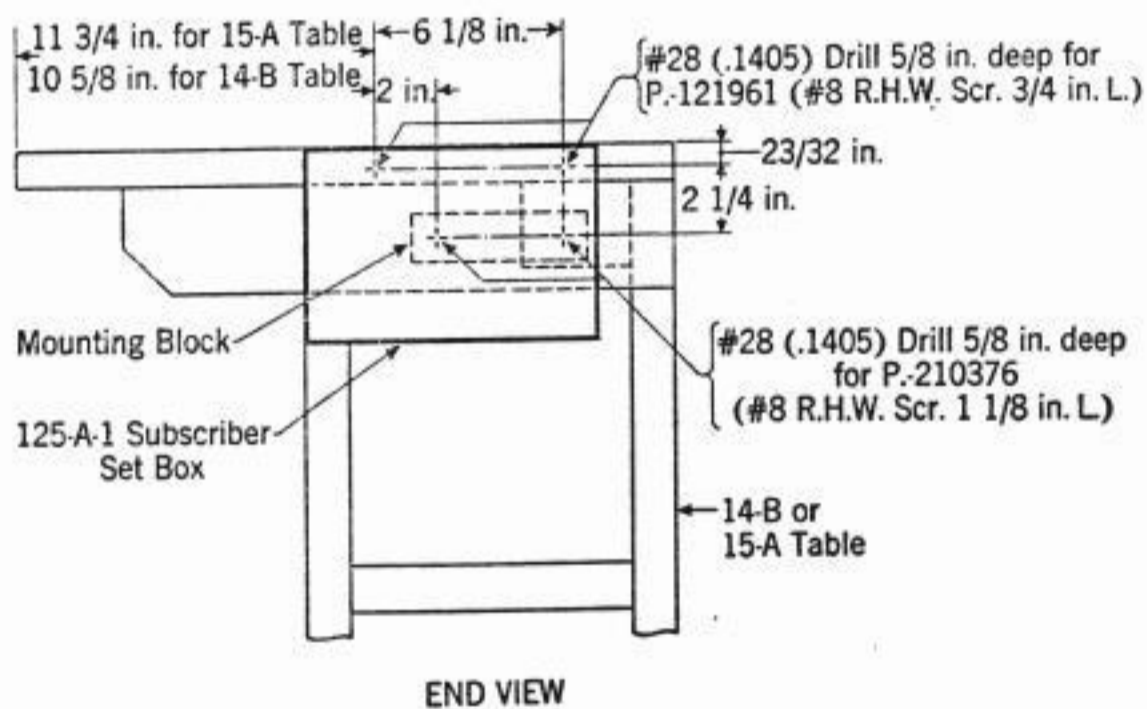


Fig. 5

8.02 The 125-A-2 set is mounted in the same manner except that it is placed directly against the side apron of the table. When required the 6017-M Key is mounted on the opposite side of the table. The bracket for the selector key or keys, when used, is attached to the edge of the table top just above the 125-A-2 set.

8.03 The wiring to be placed by the installer is shown on the circuit label on the inside of the station set box for the 125-A-1 set and for the 125-A-2 set the connections are shown in another section covering installation connections.

8.04 A view of the 125-A-1 subscriber set mounted on a 15-A table is shown by Figure 6.

8.05 A view of the inside of the 125-A-1 subscriber set is shown by Figure 2.

8.06 The methods of installing the teletypewriter are covered in the installation information covering the teletypewriter.



Fig. 6