DATA AUXILIARY SET 804G-TYPE
DESCRIPTION AND OPERATION

1. GENERAL

1.01 This section provides a physical and functional description of Data Auxiliary Set (DAS) 804G-type (Fig. 1), describes the basic operation and general application of the unit, and provides a list of references for additional information on the DAS and associated equipment.

1.02 This section is reissued for the following reasons:

- To show the 804G1 and 804G2 sets rated Manufacture Discontinued (MD)
- To show the 804G3 and 804G4 sets as the replacing current standard sets for the 804G1 and 804G2, respectively.

Information on the sets rated MD has been retained. Since this reissue constitutes a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 The DAS 804G-type is a telephone and control unit which provides normal voice communications, supervisory functions, and switching functions (DATA, TALK, DIAL TONE, and TEST) for associated Data Sets 403E-type on 2-wire switched or 2-wire private line networks.

Note: The DIAL TONE key is used only on DAS 804G3 and DAS 804G4 series 2 and above, and only when the data station uses a ground-start Automatic Calling Unit (ACU) DAS 801A5, 801A6, 801C3, or an 801C4 with ground-start option (option V).

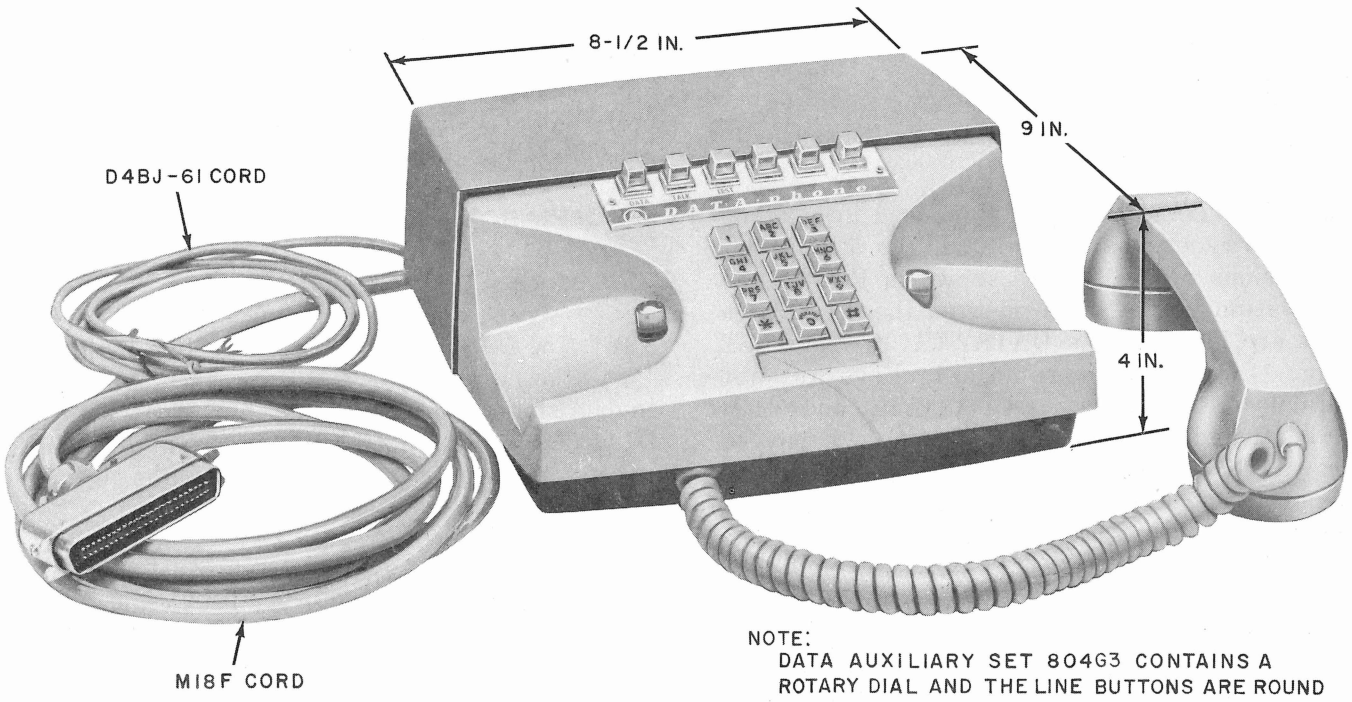


Fig. 1—Data Auxiliary Set 804G4—Front View

1.04 The DAS 804G-type is provided in two similar sets—the 804G3 and the 804G4. These sets perform similar functions, but differ in features and appearance, because the 804G3 contains a rotary dial and the 804G4 contains a TOUCH-TONE® dial. The 804G3 and 804G4 are provided with a third-wire out-of-service feature (make-busy) through the telephone cord. The 804G3 and 804G4 also provide a ground-start feature which permits the origination of calls when used with an ACU equipped for ground-start operation. The make-busy and ground-start features were not available on DAS 804G1 and 804G2.

1.05 Early models of the 804G1 and 804G2 have [X] wiring. Later models of the 804G1 and 804G2 and all of the 804G3 and 804G4 models are equipped with [W] wiring to prevent the associated data set from going into the data mode when the handset is placed on-hook in the talk mode (see Fig. 3).

1.06 The data auxiliary sets are designed for operation in an environment with an ambient temperature range of 40 to 120°F and a relative humidity range of 20 to 90 percent.

2. DESCRIPTION

PHYSICAL DESCRIPTION

2.01 The DAS 804G-type is housed in a 2-tone gray enclosure and weighs 7 pounds. Dimensions of the set are shown in Fig. 1. Six pushbutton keys are provided on the set. Three keys are identified as DATA, TALK, and TEST (Fig. 2). The three remaining keys are not normally used. However, on DAS 804G3 and 804G4 series 2 and above, a DIAL TONE key may be provided by unblocking the third spare key and removing the locking pin. If this key is used, it should be designated DIAL TONE. Key functions are as follows.

(1) The DATA key is a nonlocking-releasing button which transfers the telephone line from the telephone to the associated data set.

(2) The TALK key is a locking button which clears all data functions, thus allowing normal use of the telephone.

(3) The TEST key is a nonlocking-nonreleasing button which permits the associated data set to be tested from a remote data test center.

(4) The DIAL TONE key is a nonlocking-nonreleasing button which permits origination of calls when the DAS 804G3 or 804G4 is used with a ground-start ACU.

2.02 The auxiliary set is provided with two cords—an M18B cord with attached 50-pin connector for making connections to the associated data set, and a 4-wire cord (D4BJ-61) equipped with spade lugs for making connections to the telephone line. (The M14F cord is supplied with the 804G1 and 804G2.)

2.03 The DAS receives its power from the following sources.

(a) Power for the telephone transmitter is supplied by the telephone line.

(b) Power for the indicator lamps is supplied by the associated data set power supply.

FUNCTIONAL DESCRIPTION

2.04 Functionally, DAS 804G-type consists of an apparatus unit with its associated dial (rotary or TOUCH-TONE), network, ringer, and keys with indicator lamps (Fig. 3).

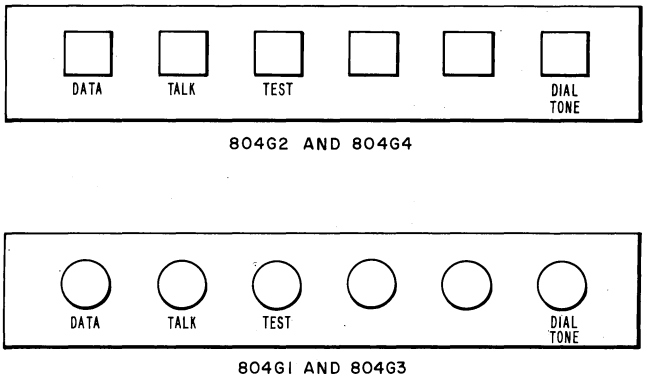
3. OPERATION

Talk Mode

3.01 The DAS is conditioned for talking by lifting the handset and depressing the TALK key. In data stations using a ground-start ACU, depress DIAL TONE key until dial tone is heard, then release. This provides two current paths through the DAS, as follows.

(1) One path is from the ring side of the telephone line through the DATA and TALK contacts to terminal C of the apparatus unit network (option W), and then from the F terminal of the apparatus unit through the TALK and SH contacts to the tip side of the telephone line (Fig. 3).

(2) The second path is from ground on the associated data set through the SG lead, SH



NOTE:
WHEN A GROUND START AUTOMATIC CALLING UNIT IS USED IN CONJUNCTION WITH DAS 804G3 OR DAS 804G4, THE "DIAL TONE" MARKING SHOULD BE STAMPED ON THE KEY STRIP.

Fig. 2—Data Auxiliary Set 804G-Type Pushbuttons

and TALK contacts to the MT lead and the T relay in the data set.

3.02 Operation of the T relay short-circuits the line-holding relay of the associated data set, which prevents operation of the line-holding relay. Operation of the T relay also connects ground to the TKL lead, causing the TALK lamp to light.

3.03 The talk mode of operation is released by replacing the handset on-hook. This method opens the telephone line path to the network.

Data Mode

Note: Since the data set used in conjunction with DAS 804G-type has the capability of attended or automatic operation, the following procedures describe both automatic and manual operation of the set.

3.04 When the data terminal ready (DTR) lead of the associated business machine is closed to ground, DAS 804G-type conditions the associated data set for reception of data on a manual or automatic basis as follows.

(a) Manual switching to the data mode is initiated from the talk mode (with handset off-hook and TALK key depressed). Operating the DATA key removes the short across the line-holding relay of the associated data set. This causes the line-holding relay to operate by providing a current path through the DAS apparatus unit to the tip side of the line.

(b) When the handset is on-hook, the associated data set is automatically switched to the data mode upon detection of ringing voltage by the ring detector R relay. The R relay then causes the C relay in the associated data set to operate, which causes the line-holding relay to operate. This provides a complete circuit across the telephone line for data. In both the manual and automatic modes of operation, the C relay grounds the DL lead and causes the DATA lamp to light.

(c) The associated data set may be released from the data mode either by opening the DTR lead on the business machine or by returning to the talk mode.

Remote Test

3.05 The test mode is initiated from the talk mode (with handset off-hook and TALK key depressed). Depressing the nonlocking TEST key supplies ground to the remote test circuit which causes the remote-test relay to operate. The remote-test relay remains operated upon release of the TEST key. Operation of the remote-test relay also provides a current path to light the TEST lamp.

3.06 To manually release the data set from the test mode, place DAS 804G-type in the talk mode, then depress DATA key. Depressing the DATA key provides a current path to turn off the transistor holding the remote-test relay, causing the remote-test relay to release.

3.07 The third-wire out-of-service feature in the 804G3 and 804G4 sets applies ground to the sleeve in the central office (CO).

This feature requires an additional conductor (third wire) from the data station to the CO.

3.08 If the associated data set uses an ATTENDANT feature (where the business machine may summon an attendant to intercept the call on the line), a signal ground indication is connected through terminal 7 (L lead) from the data set to DAS 804G-type (Fig. 3). This lead may be connected

to a locally supplied 18V dc signaling device (buzzer, lamp, bell, etc), which connects to the PL lead (−18V dc). The signal ground indication will remain on the L lead so long as the ATTENDANT feature is actuated by the business machine.

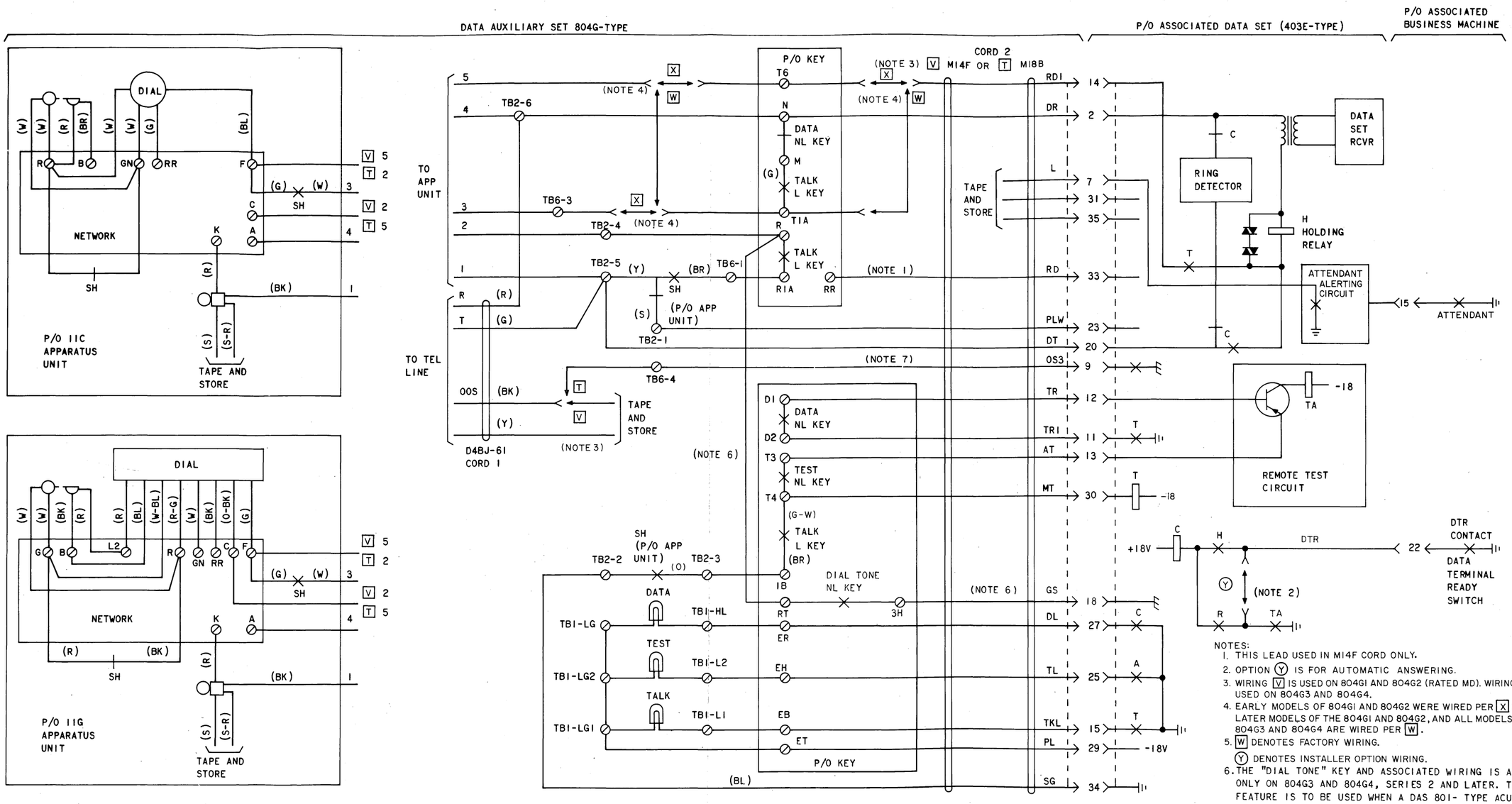
4. GENERAL APPLICATION

4.01 The DAS 804G-type provides line control functions for Data Set 403E-type with an optional DAS 801A- or 801C-type.

5. REFERENCES

5.01 For additional information on DAS 804G-type and associated equipment, refer to the following:

NUMBER	TITLE
594-026-100	Data Set 403E-Type Single Receiver Station—Description and Operation
594-026-200	Data Set 403E-Type—Installation and Connections
594-026-300	Data Set 403E-Type Single-Receiver Station—Maintenance
594-026-500	Data Set 403E-Type Receiver—Test Procedures
SD-1D102-01 and CD-1D102-01	Data System Station—Data Auxiliary Set 804G-Type



NOTES:

1. THIS LEAD USED IN M14F CORD ONLY.
2. OPTION (Y) IS FOR AUTOMATIC ANSWERING.
3. WIRING [V] IS USED ON 804G1 AND 804G2 (RATED MD). WIRING [T] IS USED ON 804G3 AND 804G4.
4. EARLY MODELS OF 804G1 AND 804G2 WERE WIRED PER [X] (RATED MD) LATER MODELS OF THE 804G1 AND 804G2, AND ALL MODELS OF THE 804G3 AND 804G4 ARE WIRED PER [W].
5. [W] DENOTES FACTORY WIRING.
   (Y) DENOTES INSTALLER OPTION WIRING.
6. THE "DIAL TONE" KEY AND ASSOCIATED WIRING IS AVAILABLE ONLY ON 804G3 AND 804G4, SERIES 2 AND LATER. THIS FEATURE IS TO BE USED WHEN A DAS 801- TYPE ACU EQUIPPED FOR GROUND START OPERATION IS USED WITH DS 403E-TYPE. THE FRAME GROUND ON TERMINAL 18 ORIGINATES IN THE 8A DATA UNIT WITHIN DS 403E-TYPE. WHEN THIS FEATURE IS USED, THE SPARE 3 KEY MUST BE UNBLOCKED, THE LOCKING PIN REMOVED, AND "DIAL TONE" SHOULD BE STAMPED ON THE KEY STRIP.
7. THIS LEAD USED IN M18B CORD ONLY.

Fig. 3—Data Auxiliary Set 804G-Type—Functional Diagram