

DATA SET 601-TYPE
TRANSMITTER-RECEIVER
IDENTIFICATION AND OPERATION

1. GENERAL

1.01 This section contains the physical and functional description of the Data Set 601-type and information pertinent to its operation. Information concerning the business machine equipment associated with the data set is not included.

1.02 This section is reissued to clarify the use of the mounting cords and to provide the proper code for the 2012B-61 transformer and change code of the printed wiring board from equipment to apparatus.

1.03 The Data Set 601-type (Fig. 1) is designed for the transmission or reception of analog signals generated by a business machine. These signals are transmitted on the Direct Distance Dialing (DDD) Switching System.

1.04 These data sets are used in conjunction with various telewriting business machines. At the receiving station, a stylus, or other writing instrument in the associated business machine, will follow the movement of the writing instrument used by the attendant at the transmitting station.

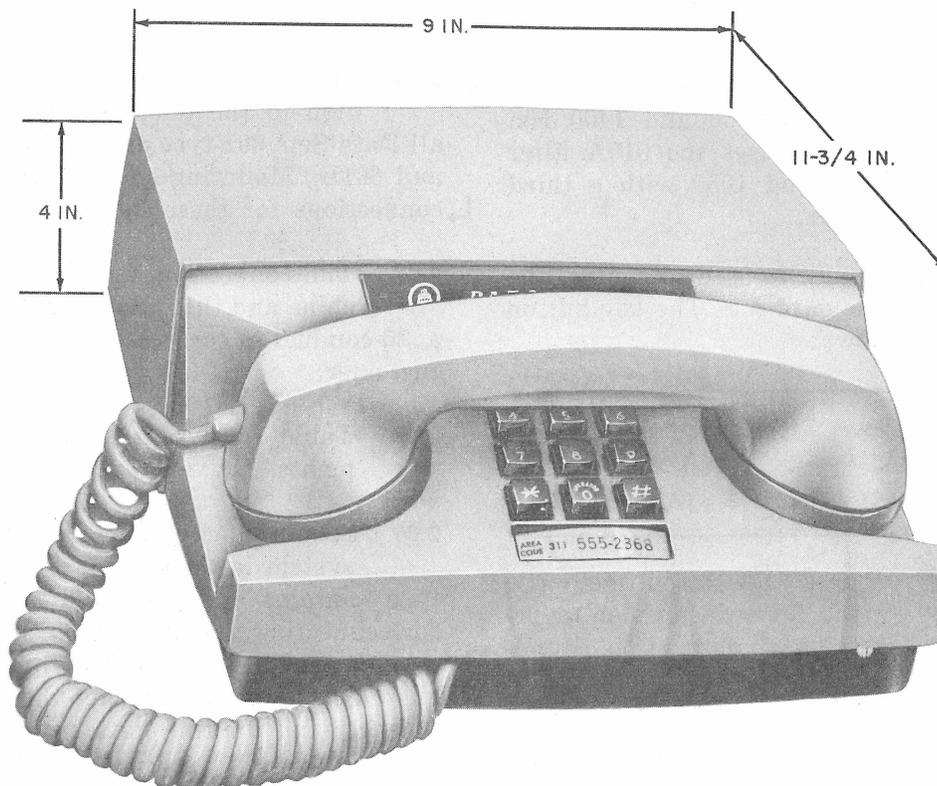


Fig. 1 — Data Set 601 — Type

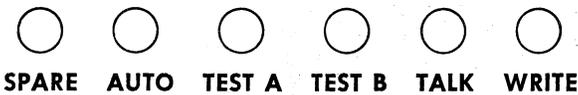
2. DESCRIPTION

2.01 The data set weighs approximately 10 pounds and is enclosed in an integrated housing (Fig. 1). The housing is available in two-tone gray only. The data set consists of a telephone set, key unit, and electronic and relay circuits for transmission and reception of data signals.

2.02 Data Sets 601-type are coded 601A, 601B, 601A1, 601B1, 601A2, and 601B2. The Data Sets 601A and 601B are manufacture dis-
 ↗ continued. Data Sets 601A1 and 601B1 contain a rotary dial and are recoded models of Data Sets 601A and 601B. Data Sets 601A2 and 601B2 are similar to the 601A1 and 601B1 but contain a TOUCH-TONE® dial. The Data Set 601A-type contains a different filter network than the
 ↘ 601B-type.

- Each filter has frequency and impedance characteristics matching those of the associated business machine. The commercial works order should specify the type of data set required.
- Data Set 601A-type uses a 597A filter with channel centered on 2200 and 1400 Hz. Data Set 601B-type uses the 610A filter centered on 1300 and 1050 with a third channel at 800 Hz.

2.03 A 6-button key unit is used to control the functions of the data set. The key button functions are as follows:



WRITE key: Places the set in the write mode for transmission or reception of data. It is illuminated when set is in the data mode.

TALK key: Places the set in the talk mode for voice communications over the line used for data transmission. No provision is made for A lead control or key illumination.

TEST A
and

TEST B key: Used during test of the data set under the direction of the data test center.

AUTO key: Places the set in automatic mode for unattended operation. Illuminated when in use.

SPARE key: May be used for pickup of an additional telephone line. Cannot be used for data. No provision is made for A lead control. May be used while set is in data mode. No ringer is provided for this line.

2.04 Provision is made to test the data set under the direction of the data test center.

2.05 A G1B or M1A ringer provides an audible signal on the data line. Access to the ringer volume control is through a hole in the base of the set.

↗ 2.06 Mounting cord D10P-61 provides connection to the telephone terminal block for all Data Sets 601-type except for Data Sets 601A and 601B. Mounting cord D10H-61 provides the
 ↘ connections for these two sets.

2.07 The connection between the business machine and the data set will be by means of a 25-conductor cord and plug provided by the customer.

2.08 Table A gives the interface pin assignments.

2.09 A simplified block diagram of the data system is shown in Fig. 2. Data Set 601-type contains switching and electronic circuits for connecting the business machine or telephone set to a central office or PBX line for generating answer-back signals during the auto mode and filtering and limiting data signals.

2.10 The key and relay circuits, in the talk mode, connect the telephone set to the data line permitting normal operation of the telephone set when the TALK button is depressed. These circuits also provide for transfer from the talk

to the write mode. In the auto (or unattended) mode, the relay circuits detect the ringing signal and hold the line. A timed answer-back signal is then sent to the calling station after which the transmission path is transferred to the business machine.

TABLE A

PIN NO.	SIGNAL NAME	
	601A1	601B1
1	Frame Ground	Frame Ground
2	Channel A1	Channel A
3	Channel A2	Reserved
4	Channel B1	Channel B
5	Channel B2	Reserved
6	Reserved	Channel C
7	Reserved	Common
8	Not Used	Not Used
9	Oscillator Ground	Oscillator Ground
10	Not Used	Not Used
11	Not Used	Not Used
12	Not Used	Not Used
13	Not Used	Not Used
14	Write	Write
15	Write Common	Write Common
16	Non Write	Non Write
17	Auto Answer 1	Auto Answer 1
18	Auto Answer 2	Auto Answer 2
19	Remote Release	Remote Release
20	Remote Control	Remote Control
21	Ready	Ready
22	Ring Indicator 1	Ring Indicator 1
23	Ring Indicator 2	Ring Indicator 2
24	Not Used	Not Used
25	Not Used	Not Used

2.11 The answer-back oscillator generates a 1785-Hz signal for 3 to 5 seconds which indicates to the calling station that the receiving business machine is in a ready state. The receiving business machine is, at the end of the answer-back signal, connected to the telephone line. The

connection is made through a filter network consisting of a repeat coil and two or more bandpass filters. The network provides the proper impedance match between the business machine and the telephone line. Two or more tones received from the business machine are used to transmit analog information. The amplitude of these tones is controlled by the limiter. The frequency band is controlled by the filter in the data set.

3. OPERATION

3.01 To use the data set for voice communication, depress the TALK key (or SPARE key if a line is connected to it) and proceed in a normal telephone manner.

3.02 Data Transmission:

- (1) Depress the TALK key and dial the receiving station.

Note: To answer automatically and switch the incoming call to the data mode, the attendant is required to depress the AUTO button.

- If the receiving station is attended, a verbal agreement must be reached to begin data transmission.
- If the receiving station is unattended, a 4-second answer-back tone will be returned to the transmitting station indicating that the receive equipment is ready to receive data.

- (2) With the transmitting business machine in ready condition, depress WRITE key. The WRITE lamp lights to indicate that the line is transferred from the telephone set to the business machine. The handset may be placed on the switch hook.

- (3) At the end of the data transmission, the transmitting attendant sends an end-of-message signal from the business machine. This causes both the transmitting and receiving data sets to release the line.

3.03 *Data Reception:* The data set may be arranged for either attended or unattended operation by the customer.

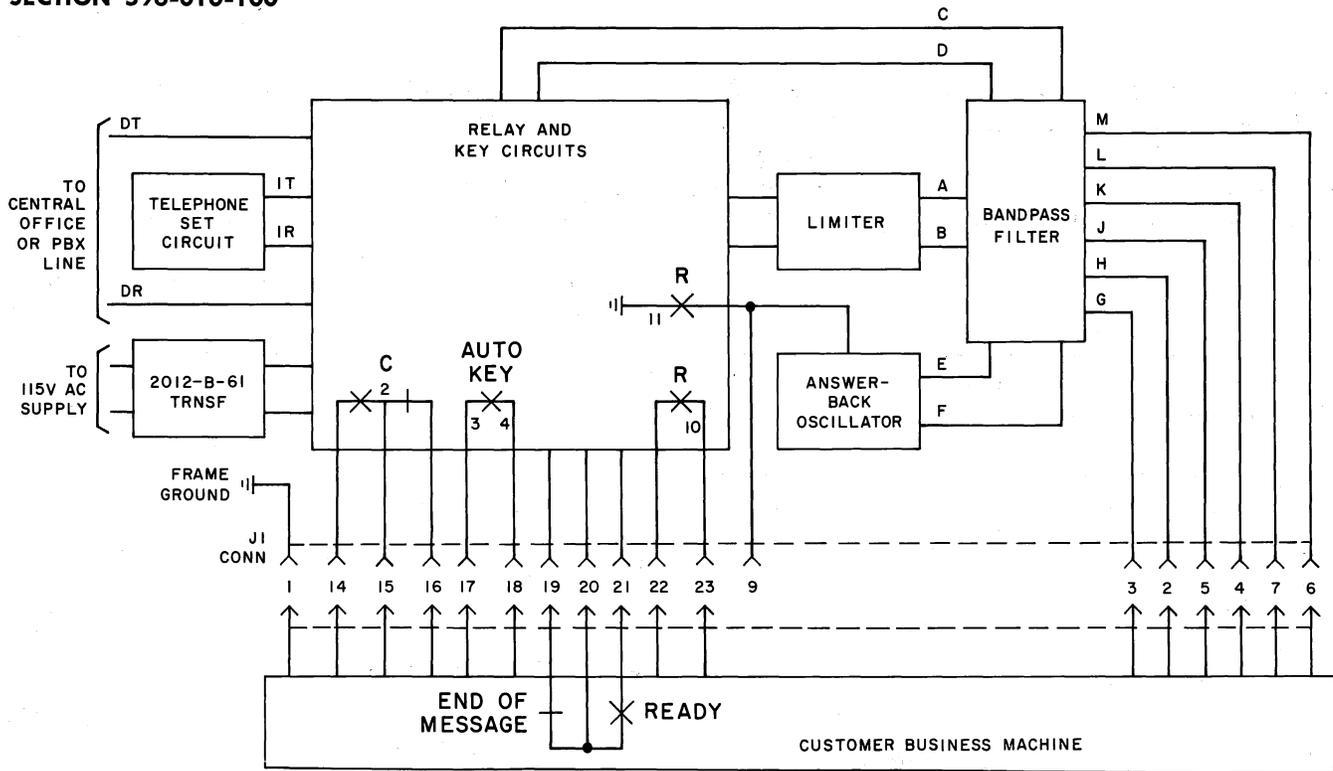


Fig. 2 — Data Set 601-Type — Block Diagram

(a) Attended Operation:

(1) Depress the TALK key to answer the originating station. Agree orally to begin data transmission.

(2) When the business machine is in the ready condition, the receiving attendant depresses the WRITE key. The WRITE lamp will light to indicate that the line is transferred to the business machine. The handset may be replaced on the switch hook.

(3) At the end of data transmission, the end-of-message signal from the transmitting business machine will cause the receiving data set to release the line and extinguish the WRITE lamp.

- Release of the receiving line may also be accomplished by lifting the handset, depressing the TALK key, then replacing the handset on-hook.

(b) Unattended Operation:

(1) The receiving business machine must be in ready condition.

(2) Depress AUTO key. AUTO lamp will light.

(3) When an incoming call is received, the data set automatically trips the ring and places a holding bridge across the line.

(4) An answer-back tone, about 3 to 5 seconds long, is returned to the originating station to indicate that the business machine equipment is ready to receive data.

(5) The receiver WRITE lamp will light to show that it is in the data mode.

(6) At the end of data transmission, the end-of-message signal from the transmitting station will cause the receiving data set to release the line and extinguish the WRITE lamp. The receiver is then ready to accept the next call.

(7) In all cases when end-of-message signal is not received, release of the line may be accomplished by removing the handset off-hook, transferring to TALK, and placing handset on-hook.

3.04 When a spare line is connected to the spare key, the telephone set may be used for normal telephone service by depressing the SPARE key.

3.05 Ordering information for Data Sets 601-type is as follows:

(Quantity) 601A Data Set*
 (Quantity) 601A1 Data Set
 (Quantity) 601A2 Data Set
 (Quantity) 601B Data Set*

(Quantity) 601B1 Data Set
 (Quantity) 601B2 Data Set
 (Quantity) 601A Conversion Kit (to convert any 601-type to A)
 (Quantity) 601B Conversion Kit (to convert any 601-type to B)
 (Quantity) ED-1D012-30, Group 1 Wiring Board Assembly*
 (Quantity) CPS ED1 ←

*Manufacture Discontinued