DATA SET 202E-TYPE

REFERENCE GUIDE

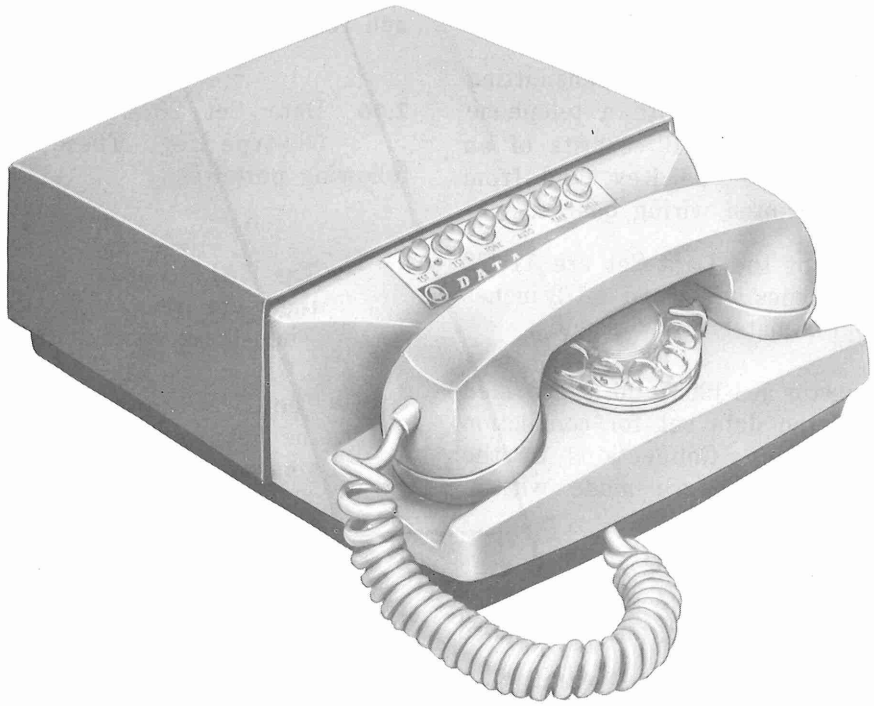

Fig. 1—Data Set 202E Type

1. GENERAL

1.01 Data Set 202E-type provides low-cost, serial-transmit only data service. These sets are compatible with existing 202 series data sets capable of up to 1200 bits per second (bps) over the switched network (DDD), and up to 1800 bps on Type 3002 private lines with C2 conditioning. Data Set 202E-type is designed for voltage signal interface with the exception of the 202E1 which has a wiring option (Y option) for a contact interface Data Set 202E1 is factory-wired with Z option which provides for a voltage signal interface. The maximum bit rate for Data Set 202E1 with contact interface is 600 bps.

1.02 The transmitting business machine provides either contact closure or voltage interface signals over the Transmitted Data lead to the serial modulator in the data set. The serial modulator converts either type of signal to a frequency-shift signal which is passed through the line coupler to the telephone line. Data Set 202C-type at the receiving terminal converts the mark and space frequencies into interface signals which are processed by the receiving business machine.

1.03 Data Set models 202E1, E2, E7, and E9 have a rotary dial and differ in basic features on a modular basis. Their functional equivalents in a TOUCH-TONE® dial version are 202E10, E11, E12, and E13 respectively. These sets are identical except for the dial mechanisms.

1.04 These sets are designed on a modular basis so that the customer can be provided with and charged for only those features required. The basic Data Set 202E-type consists of a serial modulator and a line coupler. Optional modules include a reverse-channel, automatic answer, EIA

voltage interface, power rectifier, and remote test. Combinations of features can be obtained by ordering a specific model of this series.

1.05 Table A lists the features provided by each code of data set presently available.

2. PHYSICAL AND ELECTRICAL CHARACTERISTICS

2.01 Data Set 202E-type (Fig. 1) is a transmitting data terminal integrated with a telephone set in a 2-tone gray housing. It consists of an 11C Apparatus Unit, a 589-type Key, and from two to seven modular printed wiring boards.

2.02 The dimensions of the Data Set are 11-1/2 inches deep, 9 inches wide, and 4-1/2 inches high. It weighs approximately 7-3/4 pounds.

2.03 A 25-pin connector KS-19087 L6 is provided at the rear of the data set for connection to the business machine. Connections to the telephone line and ac power are made with a D4BJ-61 cord.

2.04 Power for Data Set 202E1 is supplied over the telephone loop from a central office battery. Data Sets 202E2, E7, E8, and E9 require a power rectifier and an external transformer to power additional circuit packs.

2.05 External transformer KS-16886 L2 requires standard 115-volt ac power and supplies 24 volts ac to the power rectifier module which provides dc to the EIA interface, reverse-channel, and remote test circuit packs.

2.06 Data Set 202E-type is provided with a 589-type Key. These key buttons have the following purposes:

- The TALK button is used on all models of the data set. This button is depressed when voice communication is required.
- The TONE button is used on all models of the data set. This button is depressed to generate an answer-tone when Data Set 202E-type answers a data call manually. This answer-tone signals the receiving data set operator that data transmission is about to begin. The answer-tone is also used to condition the telephone line (operate

TABLE A

AVAILABLE DATA SETS

DATA SET	SERIAL MODULATOR	REVERSE CHANNEL	AUTOMATIC ANSWER	EIA INTERFACE	ROTARY DIAL	TOUCH-TONE DIAL
202E1	X				X	
202E2	X	X			X	
202E7	X		X	X	X	
202E8 *	X	X	X	X	X	
202E9	X	X	X	X	X	
202E10	X					X
202E11	X	X				X
202E12	X		X	X		X
202E13	X	X	X	X		X

* Data Set 202E8 has been replaced by Data Set 202E9.

echo-suppressor disablers) for reverse-channel reception of the supervisory tone in the presence of foward data transmission.

- The AUTO button is used on Data Sets 202E7 and 202E9. This button is depressed for unattended operation.

- The DATA button is used on all models of the data set. This button is depressed to begin data transmission.

- The TST A button is used on all models of the data set. This button is employed when testing the data set from a remote location. On Data Sets 202E7, E8, and E9, a test lamp lights under the TST A button during the remote test.

- The TST B button is used on Data Sets 202E1 and 202E7. This button is employed when testing the data set from a remote location.

2.07 All buttons are the locking-releasing type except the DATA button (nonlocking-releasing type) which releases all other buttons on the up-stroke. Depression of a locking-releasing button releases all other buttons on the down-stroke.

3. OPERATION

3.01 A typical method of operation of Data Set 202E-type is as follows:

(a) To originate a data call, the attendant depresses the TALK button and places a call to the receiving station in the normal manner. The receiving station must be placed in the data mode first. When this occurs, the attendant will hear a high-pitched tone. When this tone changes to a lower pitch or goes off, the attendant will insure that the business machine is ready to transmit data and will depress the DATA button. To answer a data call, the attendant must depress the TALK button and answer in the normal manner. When verbal agreement is made to transmit data, the attendant must depress the TONE button, wait approximately 2 seconds, and depress the DATA button.

(b) To prepare Data Set 202E-type for automatic operation, the attendant places the handset on-hook, depresses the AUTO button, and causes the transmitting business machine to place the DTR interface lead in the ON state. The data set can then detect ringing, answer a call, condition the data set, and notify the business machine to transmit data.

3.02 For manual operation of all sets, the handset must be kept off-hook during data transmission. A call is terminated by placing the handset on-hook. The 202E7, 9, 12, and 13 will terminate a call when an OFF condition (-5 to -25 volts) is placed on the DTR lead by the business machine for a minimum of 50 milliseconds.

3.03 To switch to the talk mode with Data Sets 202E7, 9, 12, and 13 after the data set has automatically answered a call, the telephone handset is placed off-hook and the TALK button is depressed.

4. SERVICE ORDER INFORMATION

4.01 Refer to Section 590-000-101 entitled Reference Guide—Description of Data Set Features and Options for a more detailed explanation of options common to most data sets. Service offerings and customer options are outlined in Table B and Table C, respectively. The ITEM column provides a reference to descriptive information contained in Section 590-000-101.

4.02 The following paragraphs provide detailed information on customer options.

(a) ***EIA or Contact Interface:***

(1) ***EIA Interface (Option Z):*** A voltage signal on the Transmitted Data lead within the range of -5 to -25 volts (with respect to Signal Ground) is interpreted as a marking condition. A signal within the range of +5 to +25 volts is interpreted as a spacing condition. All 202E data sets, with the exception of the 202E1 and 202E10, are arranged to operate with EIA interface only.

(2) ***Contact Interface (Option Y):*** This option is available only in data sets 202E1 and 202E10. Although factory-wired to operate with the EIA interface, the installer may change the wiring in the field to convert to contact keying. If this method is used, the customer either closes or opens a contact across two interface leads (Transmitted Data and Signal Ground) to indicate a marking or spacing condition respectively. ***The maximum speed capability using this method of keying is 600 bits per second.***

4.03 There are no Telephone Company options; however, the line build-out network and the power-level network on the line coupler circuit board must be adjusted after the data set has been installed. This compensates for the length of the loop to the central office. Refer to Section 592-018-200, Table B, for screw adjustments based on line current measured at the station. The nominal power levels should be used unless otherwise specified by Engineering.

TABLE B

SERVICE OFFERINGS — CURRENT STANDARD MODELS

CODE	FEATURE	USOC	ITEM
202E1	Send Only — Rotary Dial EIA or Contact Interface	DUD	
202E2	Send Only — Rotary Dial with Reverse Channel	DUE00	A3
202E7	Send Only — Rotary Dial with Automatic Answer	DUL00	B3
202E9	Send Only — Rotary Dial with Reverse Channel and Automatic Answer	DUS00	A3, B3
202E10	Send Only — TOUCH-TONE Dial EIA or Contact Interface	DAW	B2
202E11	Send Only — TOUCH-TONE Dial with Reverse Channel	DBE00	A3
202E12	Send Only — TOUCH-TONE Dial with Automatic Answer	DWC00	B3
202E13	Send Only — TOUCH-TONE Dial with Reverse Channel and Automatic Answer	DWQ00	A3, B3

TABLE C

CUSTOMER OPTION DECISION TABLE
(202E1 and 202E10 Only)

USOC SUFFIX CODE	OPTION	DESIGNATION	ITEM
OA	EIA Interface	Z *	BZ
OB	Contact Interface	Y	

* Factory wired.

5. COMPATIBLE DATA SETS

5.01 Any member of the 202E series with rotary dial (202E1, 2, 7, 9) can be changed to any other member if the appropriate circuit packs are available.

5.02 Any member of the 202E series with TOUCH-TONE dial (202E 10, 11, 12, 13) can be changed to any other member if the appropriate circuit packs are available.

5.03 Data Set 202E8 is rated manufacture discontinued and since the 202E8 cannot be converted to any other 202E-type set, it is not recommended for substitution.

6. REFERENCES

6.01 The following drawings, specifications, and sections provide additional information on Data Set 202E-type and associated equipment.

(a) Schematic Diagram SD-1D078-01

(b) Circuit Description CD-1D078-01

(c) EL158 - Data Sets 202E1, 2, 7, and 9

(d) EL68 - Data Sets 202E8

(e) Technical Reference Manual - Data Set 202E

(f) BSP 592-018-Series