DATA SET 402D-TYPE

REFERENCE GUIDE

DATA SET 402D TYPE

DATA AUXILIARY SET
804A TYPE
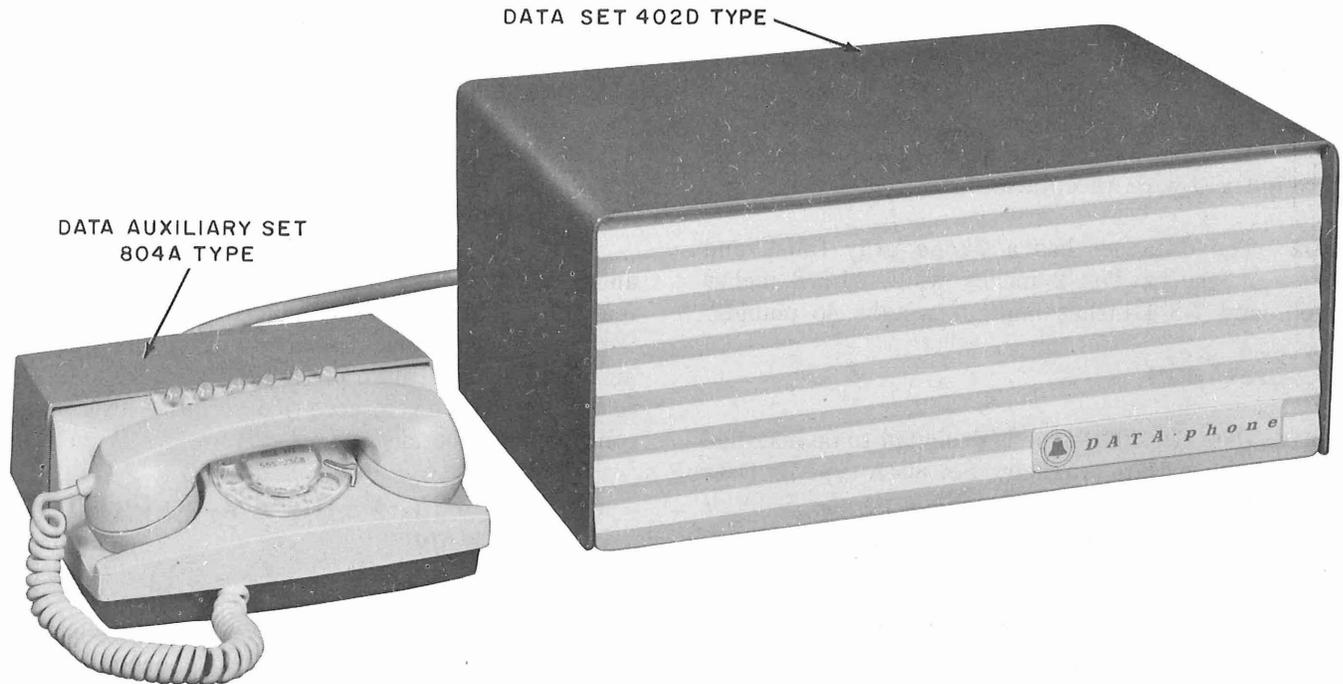
DATA·phone

Data Set 402D-Type With Data Auxiliary Set 804A-Type

1. GENERAL

1.01 Data Set 402D-type is a medium speed, parallel, 8-channel binary receiver used in conjunction with a Data Set 402A or 402C transmitter. A ninth channel provides timing signals, permitting asynchronous operation at any speed up to 75 characters per second per channel.

1.02 Data Set 402D-type is designed primarily for use on the switched network; however, it can be used on private lines.

1.03 It is installed with Data Auxiliary Set 804A-type when a receive-only terminal is specified. The 804A is required for talking, line control functions, and automatic answering, and Automatic Calling Unit (ACU) compatibility, when used with the 402D on the switched network.

1.04 All signals, both data and control, are interchanged with the business machine by means of contact closures.

1.05 The 402D transmits one of three answer-back states to the transmitting data set at a maximum speed of 20 two-bit characters per second.

1.06 Data Sets 402D1 and 402D2 are rated Manufacture Discontinued (MD). Data Sets 402D3 and 402D4 have the same features as the 402D1 and 402D2, and also have a feature that makes them compatible with TOUCH-TONE® telephone sets functioning as a data transmitter.

1.07 Data Sets 402D1 and 402D3 are not equipped with a reverse-channel unit. Data Sets 402D2 and 402D4 are equipped with a reverse-channel unit.

1.08 Remote test capability is provided, as well as an echo suppressor disabling circuit.

1.09 Data Set 402B which was designed for receive only, attended operation (USOC—DQWOO) has been rated MD; Data Set 402D-type is the recommended replacement.

2. PHYSICAL AND ELECTRICAL CHARACTERISTICS

2.01 Data Set 402D-type requires 26 watts of 117-volt, 60-Hz power supplied by the customer through a 3-wire receptacle.

2.02 The data set has a 2-tone gray finish and measures 17-1/2 inches wide, 11-5/8 inches deep, and 7-3/4 inches high; it weighs 45 pounds.

3. OPERATION

3.01 Data Set 402D-type is designed to be installed with a Data Auxiliary Set 804A-type or Data Set 402C-type (transmitter). Keys on the 804A or 402C are used for attended control of the station and are labeled TALK, DATA, and TEST.

3.02 *To Originate a Data Call:* Depress TALK key (TALK lamp lights), lift handset, and establish connection in the usual telephone manner.

(a) *Manually:* After distant terminal answers and verbal agreement is reached on sending data, both stations go to data mode at the same time.

(b) *Automatically:* A 2025-Hz tone should be heard, indicating distant set is ready to send data. Depress DATA key until associated lamp lights, then release.

(c) Releasing Data key restores TALK key to normal and extinguishes TALK lamp. The set is now in the data mode and transmission can begin. Replace handset on cradle.

3.03 *To Terminate Call:* Depress TALK key and momentarily lift handset from cradle.

3.04 *To Answer Incoming Call:*

(a) *Manually:* Depress TALK key and answer in the usual manner. When verbal agreement is reached to begin transmission, depress DATA key until DATA lamp lights. Releasing DATA key restores TALK key to normal and extinguishes TALK lamp. The set is now in the data mode and transmission can begin. Replace handset on cradle.

(b) *Automatically:* Data sets equipped for automatic answer require no operation by an attendant. After transmitting the answer tone, the station goes into the data mode independent of the position of keys.

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 features and options common to most data sets. Service offerings and customer options are outlined in Table A and Table B, respectively. The ITEM column provides a reference to descriptive information contained in Section 590-000-101.

(a) *DECISION A—Attended or Unattended Answering:*

(1) *1. Attended (Remove Option N):* The Remote Operate lead is disabled and all incoming calls must be answered by the attendant.

(2) *2. Unattended (Option N):* When interface leads Remote Operate and Remote Release are connected to Control Ground by the business machine, Data Auxiliary Set 804A will answer incoming calls automatically. The call is released when the business machine opens Remote Release from Control Ground. Attendant is not required.

(b) *DECISION B—With or Without Data Auxiliary Set 804A-Type:*

(1) *3. With DAS 804A (Option W):* When the TR relay of the 402D is operated, the 402D is connected to the line as a data receiving terminal. This option causes the TR relay to be continuously operated and should be specified when Data Set 402C is not used with a 402D in a transmit-receive installation.

(2) *4. Without DAS 804A (Remove Option W):* Option W is not required when a 402C is used with a 402D in a transmit-receive

TABLE A

SERVICE OFFERINGS

CURRENT STANDARD MODELS

MODEL	FEATURE	USOC	ITEM
402D3	Receive only — without reverse-channel signaling.	DYA	
402D4	Receive only — with reverse-channel signaling.	DF3	A3

Note: DYA and DF3 above can be provided with TOUCH-TONE — indicated in USOC for class of service (use TOUCH-TONE DAS 804).

TABLE B

CUSTOMER OPTION DECISION TABLE

DECISION	OPTION	DESIGNATION	ITEM
A	1. Attended answering 2. Unattended answering	Remove option N N*	B3
B	3. Used with 804A 4. Used without 804A	W* Remove option W	B7
C	5. With out-of-service controlled by customer 6. Without out-of-service controlled by customer	V Remove option V	

* Factory wired.

station. The TR relay is controlled by interface lead TR Control. Operation of the TR relay places the 402D receiver on the line. When the TR relay is not operated, the 402C transmitter is on the line.

(c) *DECISION C—Out-of-Service Feature Used or Not Used:*

(1) *5. Out-of-Service Feature Used (Option V):* When Data Set 402D is used on receive-only lines, Option V provides a means for the business machine to make the station appear busy to incoming calls. Thus, routine maintenance may be performed on the business machine without loss of incoming data.

(2) *6. Out-of-Service Feature Not Used (Remove Option V):* When Data Set 402D is used in a transmit-receive station, Option V is not required.

4.02 Telephone Company Engineering Options are listed in Table C.

5. SUBSTITUTE DATA SETS

5.01 Data Sets listed in Table D may be substituted to supply the services previously described in this section. Customer and Telco options described in this section do not necessarily apply to the substituted data sets.

TABLE C

TELCO ENGINEERING OPTIONS

OPTION	DESIGNATION	ITEM
Reverse channel* and answer-back power output level:		C3
—3 dBm	Z	
—6 dBm	Y	
—9 dBm	X**	

* Reverse channel level applies only where reverse channel is used.

** Factory wired.

TABLE D

SUBSTITUTE DATA SETS

USOC	SUBSTITUTE	REMARKS
DYA	402D1 (MD)	Note 1
	402D2 (MD)	Notes 1 and 2
	402D4	Note 2
DF3	402D2 (MD)	Note 1
	402D1 (MD)	Notes 1 and 3
	402D3	Note 3

Note 1: Reusable where transfer from external telephone is not required (see EM651).

Note 2: Reverse channel not used.

Note 3: Convert by adding 2A1 reverse-channel unit.

6. REFERENCES

6.01 The following references provide additional information on Data Set 402D-type and associated equipment:

(a) PEL 7288 dated 11-13-64

(b) BSPs 594-020-100, -200, -300, -500

(c) BSRS 480.052

(d) Data Sets 402C and 402D Interface Specification

(e) EM 651.