

DATA SETS 108A- AND C-TYPES
MULTIPLE PRIVATE LINE STATION ARRANGEMENT
USING DATA AUXILIARY SET 820E-TYPE
DESCRIPTION

CONTENTS	PAGE
1. GENERAL	1
2. PHYSICAL DESCRIPTION	2
A. Data Sets 108A and C	2
B. Data Auxiliary Set 820E2	3
C. KS-20018-Type Cabinet	3
D. 590B Power Panel	3
E. 6041G Keypad	3
3. FUNCTIONAL DESCRIPTION	4
4. REFERENCES	5

- data auxiliary set 820E-type (AR17 circuit packs)
- 590B power panel (when required)
- 6041G keypad (if required)
- KS-20018-L1, -L2, -L3, -L4, or -L7 cabinet (or equivalent).

Table A shows the components required to provide multiple service for up to twelve lines.

1. GENERAL

1.01 This section provides information on the data set 108A- and C-type multiple private line station arrangement using data auxiliary set (DAS) 820E-type. (See Fig. 1.) Data sets 108A- and C-type and data auxiliary set 820E-type are rated Manufacture Discontinued. Data sets 108E- and D-types, 28A1 data mounting, and 27B1 data unit are the respective replacements for use in multiple private line station arrangements. See Section 591-023-102 entitled Data Sets 108D- and E-Types, Multiple Private Line Station Arrangement Using 28A1 Data Mounting and 27B1 Data Unit—Description. In this section, data sets 108A- and C-type will be referred to as data sets 108A and C.

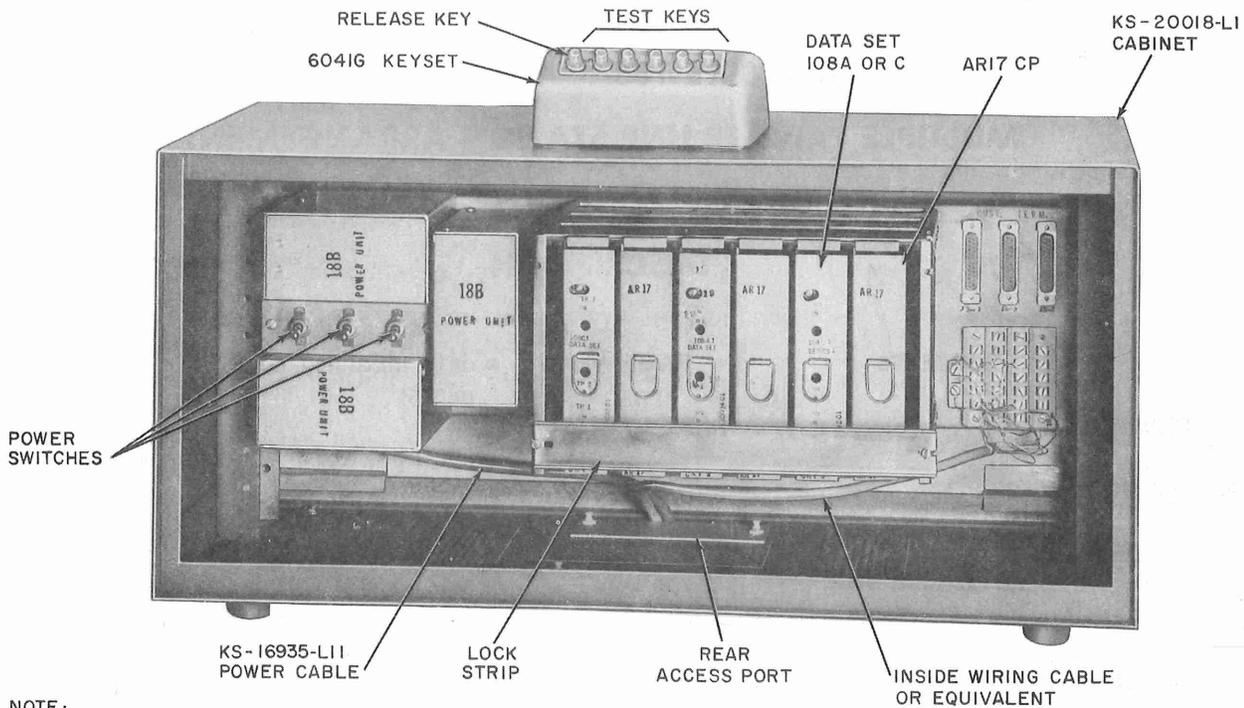
1.02 A multiple private line station arrangement consists of the following units:

- data set 108A or C (as required)

1.03 Data sets 108A and C are low-speed, full-duplex, serial data sets that employ frequency-shift-keyed modulation. Detailed information pertaining to data sets 108A and C may be found in the section entitled Data Set 108-Type Private Line System Station Application—Description (591-023-100).

1.04 Data auxiliary sets (DAS) 820E-type are designed to work in conjunction with data sets 108A and C and are intended for multiple private line station applications. DAS 820E-type provides interface circuits between Bell System or customer-provided terminals and data set 108A or C. There are two models of DAS 820E-type: DAS 820E1 and DAS 820E2 and either may be mounted in KS-20018-type cabinet or equivalent. Present station configurations require the utilization of DAS 820E2, with the 108A or C station, which is described in this section.

Note: Data sets other than the 108A and C may be used in a mixed DAS 820E-type installation with data set 108A or C, such as data sets 109E-type.



NOTE:
POWER SWITCHES AND CUST TERM. JACKS ARE ASSOCIATED WITH DATA SETS 1-3 FROM LEFT TO RIGHT RESPECTIVELY.

Fig. 1—Data Set 108A- or C-Type, Data Auxiliary Set 820E2, and 6041G Keypad Mounted in a KS-20018-L1 Cabinet

TABLE A

MULTIPLE DATA STATION COMPONENTS

KS-20018 CABINET LIST NO.	DAS 820E2	6041G KEYSETS	NO. OF DATA SETS 108-TYPE	590B POWER PANEL
1	1	1	1-3	—
2	2	2	4-6	—
3	3	2	7-9	1
4 or 7	4	3	10-12	1

2. PHYSICAL DESCRIPTION

A. Data Set 108A or C

2.01 Data set 108A or C is a single AR-type circuit pack that plugs into the 927A connector

of DAS 820E-type. Each data set requires approximately 5 watts of filtered +24 and -24V dc power which is supplied by the DAS. Each data set is 5-1/2 inches high, 7-3/32 inches deep, 1-1/4 inches wide, and weighs approximately 2 pounds.

B. Data Auxiliary Set 820E2

2.02 DAS 820E2 which mounts on a 23-inch by 6-inch relay rack mounting plate consists of the following:

- three AR17 CPs (which must be ordered separately)
- three 18B power units with their respective power switches
- a 59B apparatus mounting
- three KS-19087-L2 connectors (to interface with the terminal equipment)
- a terminal board (TB1) to interface with the 6041G keyset control leads and the 2-wire private line facility.

2.03 AR17 CP (which replaces AR16 CPs) is a single AR-type circuit pack that also plugs into the 927A connector of DAS 820E2.

2.04 The 59B apparatus mounting provides six 927A connectors for accepting three data sets 108A or C and three AR17 CPs.

2.05 The three KS-19087-L2 connectors provide the interface connections between DAS 820E2 (Fig. 2) and Bell System or customer-provided terminals. The incoming private line facility (2-wire) and the control leads from the 6041G keyset terminate at TB1 on DAS 820E2.

2.06 Each 18B power unit provides +24 volts, -24 volts, and ground to power one data set 108A or C and its associated AR17 CP. When DAS 820E2 is partially equipped (less than the full complement of three data sets and three AR17 CPs), the power switch associated with the circuits not in use should be turned off. In the KS-20018-L1 and -L2 cabinets, the KS-16935-L11 power cord (furnished with DAS 820E2) connects to a customer-provided, 117-volt ac 60-Hz power receptacle. In the KS-20018-L3 and -L4 cabinets, the KS-16935-L11 power cord connects to a 590B panel which, in turn, connects to the customer-provided power receptacle.

C. KS-20018 Type Cabinet

2.07 The KS-20018-type cabinet is made of aluminum and has a 2-tone gray-textured vinyl finish (the framework housing is dark covert gray; the front and rear panels are light olive gray). Refer to Fig. 1 for view of KS-20018-L1 cabinet.

2.08 The four cabinets (KS-20018-L1 through -L4) have the same depth and width dimensions, varying only in height.

Note: KS-20018-L7 is similar to KS-20018-L4 but is deeper. The L7 cabinet may be used in places where the L4 cabinet is not available.

2.09 The KS-20018-L3 and -L4 cabinets are provided with a 2-inch high skirt which extends completely around the base of the cabinet and has a 6-inch opening in the rear for cables. Four levelers are provided with the skirt.

2.10 The KS-20018-L1 and -L2 cabinets are provided with four tapered circular legs which are equipped with rubber feet to prevent slippage.

D. 590B Power Panel

2.11 The 590B power panel, used in the KS-20018-L3 and -L4 cabinets, is designed to provide distribution of ac power. The panel consists of four duplex outlets and one Hubbell "twist lock" receptacle, all mounted within a common cover and affixed to the rear of a modified No. 189A mounting plate. The panel is equipped with a 10-foot KS-14532-L16 power cord.

E. 6041G Keyset

2.12 The 6041G keyset (Fig. 1) contains six keys which provide test mode control for up to five private line (PL) data sets. The RELEASE key is used to release the selected data set from the test mode. The 6041G keyset is not supplied with a mounting cord. The mounting cord for the 6041G keyset must be locally engineered. See Section 591-023-202 for details.

2.13 Only one data set 108A or C may be placed in the test mode because of the interlocking keys on the 6041G keyset. Local engineering is necessary if more than one data set, associated

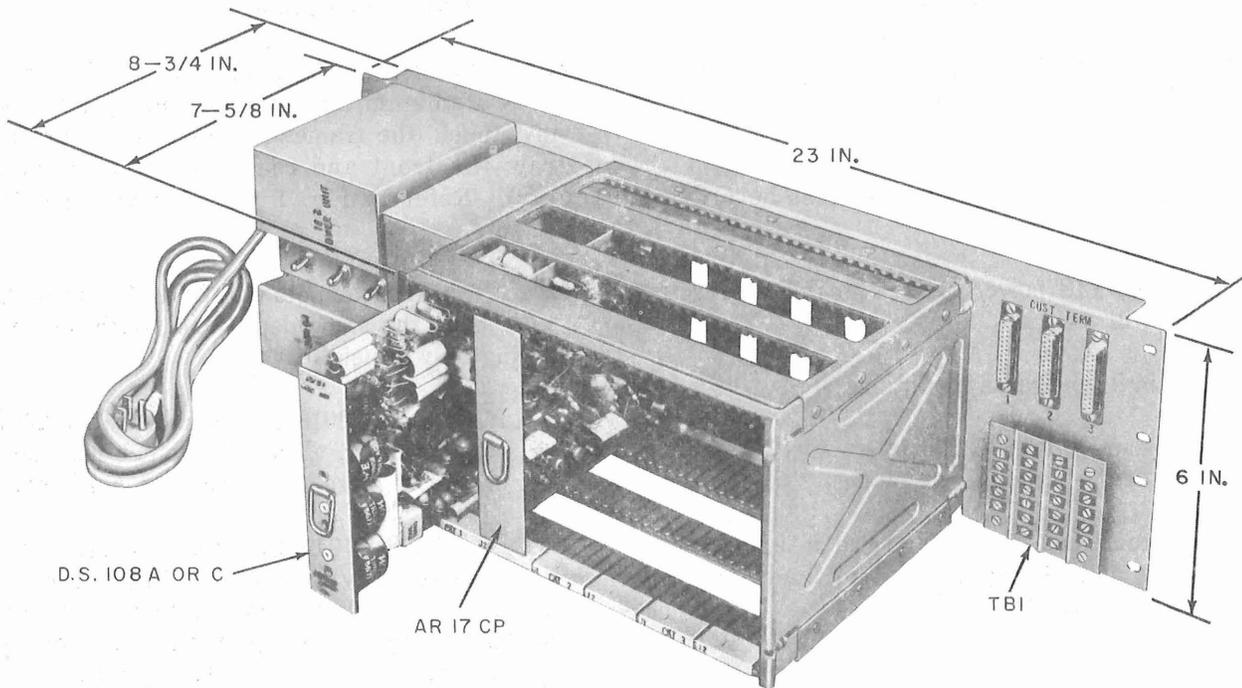


Fig. 2—Data Set 108A- or C-Type and Associated Data Auxiliary Set 820E2, One Circuit Installed

with the same 6041G keyset, is to be placed in the test mode.

2.14 The 108A and C multiple private line station arrangement operates in an ambient temperature range of 40 to 120°F and a relative humidity range of 20 to 95 percent.

3. FUNCTIONAL DESCRIPTION

3.01 The data set 108A and C multiple private line station arrangement (Fig. 3) provides up to 12 interface circuits (Table A) between the Bell System or customer-provided terminals (CPTs) and the data sets.

3.02 Data set 108A or C accepts and delivers voice frequency tones to a remote station. The data set delivers data in the form of EIA voltages to the terminal. The EIA leads are as follows:

- BA—Transmitted Data
- BB—Received Data
- CF—Data Carrier Detector.

One additional non-EIA lead to the DAS is provided for squelching the outgoing carrier.

3.03 The data set transmitting level is continuously adjustable from 0 dBm to -14 dBm to compensate for differences in local loop losses. This adjustment is made by R11 which is accessible from the front of the data set. Detailed information pertaining to the adjustment of the data set transmitting level may be found in Section 591-023-202.

3.04 The data sets will operate satisfactorily over private line voiceband facilities which allow the received carrier frequencies to arrive at a signal strength greater than -40 dBm.

3.05 The data sets incorporate a carrier detector which permits prompt recognition of transmission interruptions due to signal fading, line opens, etc. Upon detecting loss of received carrier, the data set responds as follows:

- (1) Provides loss-of-carrier indication to the associated DAS on the CF lead
- (2) Clamps the BB lead marking to the associated DAS

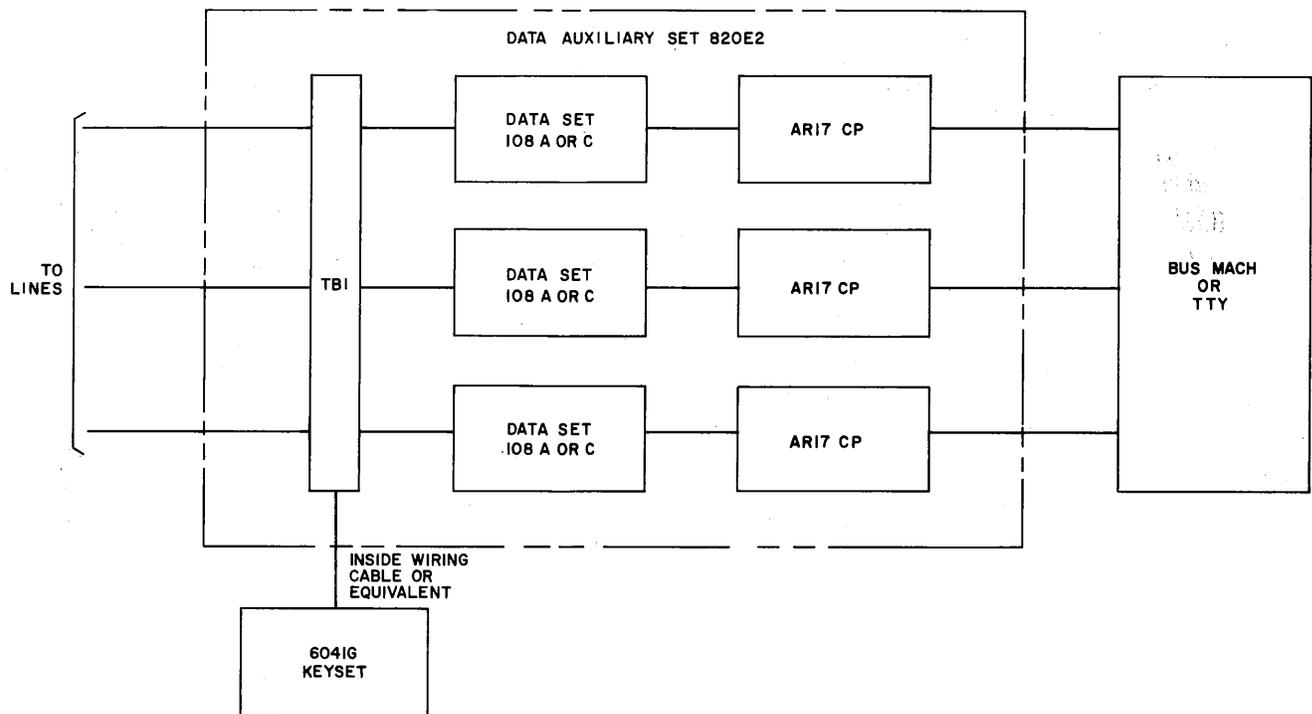


Fig. 3—Functional Block Diagram, Data Set 108A- or C-Type, Multiple Private Line Station Using Data Auxiliary Set 820E2

- (3) Assumes a preconnect mode and monitors for incoming marking carrier.
- 3.06** When steady marking carrier is received for at least one-half second, the data sets are restored to their normal mode of operation.
- 3.07** The data signals from the terminal pass through the AR17 CP and DAS. If current signals are involved, they are converted to EIA signals by the AR17 CP and fed to data set 108A or C. If EIA signals are used, the DAS and AR17 CP pass these signals directly to the data set. Either interface is selected on an option basis on the AR17 CP.
- 3.08** Data set 108A or C converts the EIA signals on the transmitted data (BA) lead into voice-frequency tones for transmission over the private line facilities. The voice-frequency tones transmitted from the distant station are received by data set 108A or C and converted into EIA voltage signals on the received data (BB) lead.

3.09 Data sets 108A or C are capable of being placed in a test mode by operating the TEST key on the associated 6041G keyset. The key will operate the *test* relay on the associated AR17 CP, thereby allowing the data set to be tested.

3.10 To restore the data set to normal mode, the *test* relay is released by operation of the RELEASE key on the 6041G keyset.

4. REFERENCES

4.01 The following documents pertain to data set 108A or C multiple private line station arrangement.

SD- & CD-3D024-01 Data Set 108A

SD- & CD-3D032-01 Data Set 108C

SD- & CD-3D031-01 Data Auxiliary Sets 820D and 820E.

SECTION 591-023-102

SECTION	TITLE	SECTION	TITLE
591-023-100	Data Set 108-Type Private Line System Station Application—Description		Auxiliary Set 820E-Type—Maintenance
591-023-202	Data Sets 108A- and C-Types Multiple Private Line Station Arrangement Using Data Auxiliary Set 820E-Type — Installation and Connections	591-023-502	Data Sets 108A- and C-Types Multiple Private Line Station Arrangement Using Data Auxiliary Set 820E-Type—Test Procedures
591-023-300	Data Set 108-Type Private Line System Station Application—Maintenance	598-059-100	Data Auxiliary Set 820E-Type—Identification
591-023-302	Data Sets 108A- and C-Types Multiple Private Line Station Arrangement Using Data	512-210-103	6041G Keypad—Identification, Installation, and Connections
		590-010-201	Data Set Multiple Installation Information