

**DATA SET 109F TYPE**  
**SUMMARIZING SPECIFICATION**  
**DATA SYSTEMS**  
**STATION**

**1. GENERAL**

**Scope**

**1.01** This specification, together with the supplementary information listed herein, summarizes the design requirements and information to be used for the application and ordering of Data Set 109F type for use in private line and DATREX service.

**Capacity**

**1.02** Data Set 109F-L1 is a low-cost, low-speed (up to 300 bauds) full-duplex, serial transmission data set for use over a 2-wire metallic loop of 2000 ohms resistance and 1 microfarad capacitance or less.

**1.03** The data set is used with 33- and 35-type teletypewriters for communication with another dc data set 109 type.

**Description**

**1.04** Data Set 109F-L1 consists of a baseplate bracket, a 635T2 key, and an EU2 circuit pack designed to fit inside a 33- or 35-type teletypewriter. The circuit pack is equipped with screw terminals as a means of attaching to a cord from the key and from the teletypewriter UCC-29 call control unit. The following features are furnished as part of the basic set:

- (a) Compatibility with any other FDX data set 109 type. Communication with an HDX data set 109 type must be half-duplex.
- (b) Provision for local copy.

(c) Ability to cause a mark or space on incoming data lead when loop current is at 0 milliampere.

(d) Use of current (primitive) interface.

(e) Half- or full-duplex operation.

(f) Powered with +24 volt direct current from teletypewriter call control unit.

(g) Optional private line or DATREX arrangement.

(h) Operation over 2000-ohm, 2-wire, 3-milliampere dc polar loop of 1-microfarad maximum capacity when operating in the FDX mode, or 2500 ohms with reduced current in the HDX mode.

**1.05** The overall size is 7.38 inches long, 3.75 high, and 4.25 wide. List 1 weighs 1 pound 9 ounces.

**1.06** Data Set 109F-L1/2 consists of Data Set 109F-L1 with the addition of an ET1 circuit pack. The ET1 circuit pack provides the following features:

(a) Circuitry to stop the teletypewriter motor when the teletypewriter indicates the receipt of an end-of-transmission (EOT) character

and/or

(b) A send-space timer (SST) used to protect quasi-ternary channels from false operation.

**1.07** The ET1 circuit pack measures 1.7 by 4 inches. It fastens to the EU2 circuit pack (which is part of the basic data set) by means of four snap-on spacer/bushings. Connection is made by means of spade-ended leads and screw terminals.

**SECTION 591-035-180**

**1.08** Data Set 109F-L1/3 consists of Data Set 109F-L1 with the addition of a rotary dial for use in placing calls via the telephone switched network, a receive-only headset for monitoring call progress tones, a set of 106A brackets used to mount the dial to the baseplate, and a headset hanger that is attached to the side of the teletypewriter housing.

**1.09** Data Set 109F-L1/4 consists of Data Set 109F-L1 with the addition of a TOUCH-TONE® dial for use in placing calls via the telephone switched network, a receive-only headset for monitoring call progress tones, a hanger for the receiver which attaches to the side of the teletypewriter housing, an ET2 circuit pack that couples the dial to the telephone line and data set, and a set of 106B brackets for mounting the dial to the baseplate.

**1.10** The ET2 circuit pack measures 1.7 by 4 inches. It fastens to the EU2 circuit pack (which is part of the basic data set) by means of four snap-on spacer/bushings. Connection is made by means of spade-ended leads and screw terminals.

**2. SUPPLEMENTARY INFORMATION**

- A-157100 Common Features Drawing for Printed Wiring Boards
  - A-836330 Terminal Area Configurations for Printed Wiring Boards
  - 591-035-100 Description (Private Line)
  - 591-035-101 Description (DATREX)
  - 591-035-200 Installation (Private Line)
  - 591-035-201 Installation (DATREX)
  - 591-035-300 Maintenance (Private Line)
  - 591-035-301 Maintenance (DATREX)
  - 591-035-500 Tests (Private Line)
  - 591-035-501 Tests (DATREX)
  - 800-610-158 Packaged Electronic Products—Wiring, Cabling, Numbering and Lettering
- Bell Telephone Laboratories, Incorporated

Dept 5325

- 800-610-159 Printed Wiring Assemblies—General Equipment Requirements
- X-17428 Plated-Through Holes on Printed Wiring Boards
- X-17624 Manufacturing Testing Requirements

**3. DRAWINGS**

- SD-1D199-01 Data Set 109F Type

**4. PRODUCT**

**Data Set 109F Type Transmitter/Receiver**

- List 1**—Common equipment, assembly, and wiring for basic full-duplex data set per SD-1D199-01, App Fig. 1.
- List 2**—Adds to basic data set (L1) EOT and SST features using an ET1 circuit pack per SD-1D199-01, App Fig. 2.
- List 3**—Adds to basic set (L1) rotary dial, including listen-only receiver, receiver hanger, and a set of 106A dial mounting brackets per SD-1D199-01, App Fig. 3.
- List 4**—Adds to basic set (L1) TOUCH-TONE dial, including listen-only receiver, receiver hanger, a set of 106B dial mounting brackets, and an ET2 circuit pack per SD-1D199-01, App Fig. 4.

**TABLE OF AUTHORIZED**

**ORDERABLE CODE NUMBERS**

DATA SET	RATING	REPLACED BY
109F-L1	AT&TCo Std	—
109F-L1/2	AT&TCo Std	—
109F-L1/3	AT&TCo Std	—
109F-L1/4	AT&TCo Std	—
109F-L1/2/3	AT&TCo Std	—
109F-L1/2/4	AT&TCo Std	—

**5. GENERAL NOTES**

- 5.01** When ordering data set, show full code.  
Example: Data Set 109F-L1/2