

## DATA SET 604B-TYPE INSTALLATION AND CONNECTIONS

### 1. GENERAL

**1.01** This section provides installation information and wiring connections for Data Set 604B-type.

**1.02.** This section is reissued to indicate the change to the reverse-channel output and answer-back level option in compliance with the tariff requirements of FCC 263, and also to change the rating of the section from Special to Standard with limited distribution. The AT&T Special rating is no longer used to limit the distribution of Bell System Practices. This does not affect the rating of the apparatus, which remains Special. Since this constitutes a general revision, arrows ordinarily used to show changes have been omitted.

**1.03** Data Set 604B-type is designed primarily for DATA-PHONE® service over local switched network or private line facilities.

**1.04** Data Sets 604B1 and 604B2 series 2 are identical to the series 1 data sets with the exception that the later models contain the newer 48B power unit and the 3A2 data unit. The 3A2 data unit provides the capability for working with ESS offices and Unigauge lines.

**1.05** Later models of Data Set 604B-type also have a reduced output level for reverse channel operation as indicated in Table A.

**1.06** Information concerning the associated business machine is not covered in this section.

**TABLE A  
OPTION CONNECTIONS**

FEATURE	OPTION	DESIG	AVAIL ON		CONNECTIONS ON TB2		QUANTITY
			604B1	604B2	FROM TERM	TO TERM	
Termination	600 ohms	N	†	†	11	12	One Per Circuit
	900 ohms	Q	*	*	12	13	
Reverse Channel Output and Answer-Back Output Level	-12 dBm	R‡	†	†	2	3	One Per Circuit
					4	5	
	-3 dBm	S	†	†	15	16	
					17	18	
-6 dBm	T	*	*	28	29		
				30	31		
-9 dBm	V	†	†	41	42		
				43	44		
Grounding Arrangement	SG & FG Connected	Z	*	*	64	65	One Per Circuit

\* Identifies options supplied and installed by the factory.

† Identifies options which may be installed at the time of data set installation by removing the non-compatible factory-supplied option and wiring as shown.

‡ Data sets identified as Series 1 models have an option level of 0 dBm when option R is designated.

**2. OPTION CONNECTIONS**

**2.01** The procedures for removing the covers of Data Set 604B-type and for replacement of the covers are given in Section 596-018-300.

**2.02** The wiring options are specified by the type of service requested by the customer. The option connections are normally made prior to the installation of the data set, but can be changed to meet changes in customer service or operations.

**2.03** The options that are applicable to either model of the data set are made in the same manner.



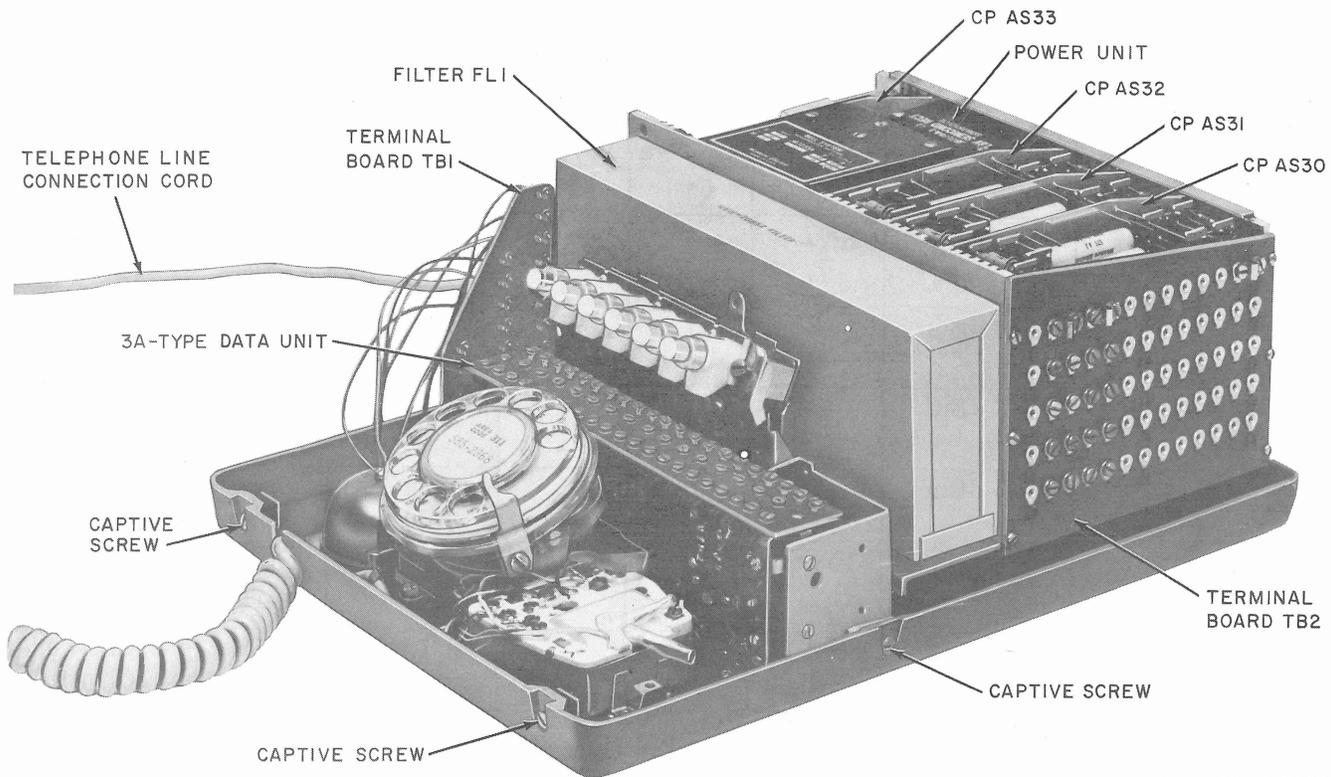
*To eliminate possible damage to electronic components in the data set, do not make power connections until all other connections have been completed.*

**2.04** The procedure for connecting the options is as follows:

- (a) Remove the covers as outlined in Section 596-018-300.
- (b) Connect the necessary options as shown in Table A on terminal board TB2, which is shown in Fig. 1.
- (c) Replace the covers as outlined in Section 596-018-300.

**2.05** The reverse-channel output and answer-back output of series 1 data sets may require padding to meet the signal level requirements of FCC 263. Refer to Fig. 2 for pad construction, connections, and ordering information.

**2.06** Table B shows the padding required to ensure that Data Set 604B-type conforms to the level requirements for different values of local loop loss.



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**Fig. 1—Data Set 604B1, Covers Removed**

TABLE B

OUTPUT LEVEL AND PAD LOSS REQUIRED FOR LOOP LOSS ON EARLIER MODEL DATA SETS

DATA SETS 604B1 SERIES 1, 604B2 SERIES 1		
LOOP LOSS AT 1 kHz (dB)	DATA SET OUTPUT LEVEL	PAD LOSS REQUIRED
0-1	-9	3
1-2	-9	2
2-3	-9	1
3-6	-9	None
6-9	-6	None
9-12	-3	None

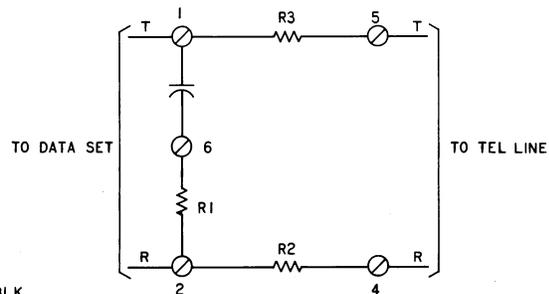
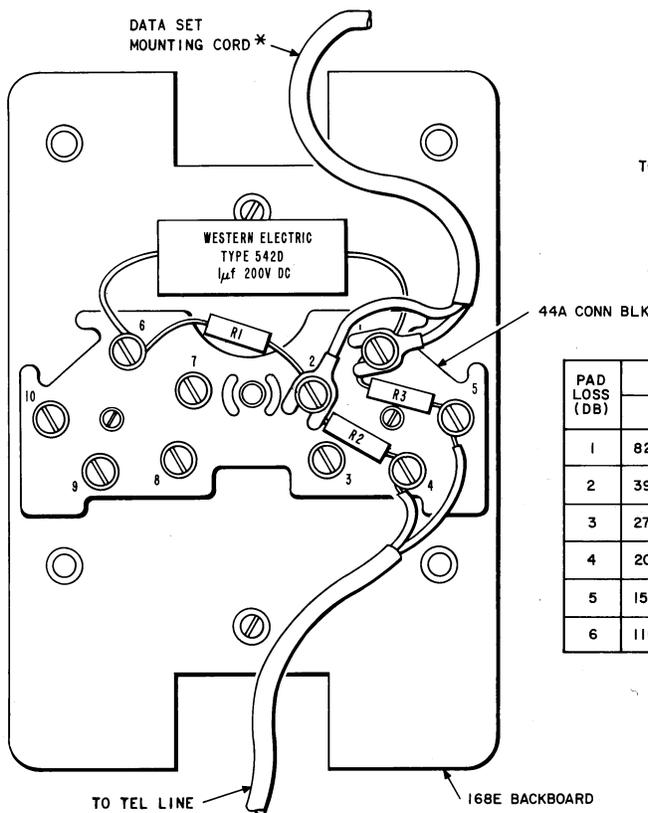
3. INSTALLATION PROCEDURES

3.01 No special tools are required for installation of the data set.

3.02 To avoid interference during data transmission, the following restrictions apply to the data line where practicable:

- (a) Use only on individual lines.
- (b) Do not connect extension telephones.

3.03 To minimize inductive interference to the data signal on the telephone (data) line, the line should not be carried in the same run or



PAD LOSS (DB)	RESISTOR VALUE (OHMS)				ORDERING INFORMATION
	R1		R2 AND R3		
1	8200	GRAY RED RED	47	YELLOW VIOLET BLACK	F-58101
2	3900	ORANGE WHITE RED	110	BROWN BROWN BROWN	F-58102
3	2700	RED VIOLET RED	160	BROWN BLUE BROWN	F-58103
4	2000	RED BLACK RED	220	RED RED BROWN	F-58104
5	1500	BROWN GREEN RED	240	RED YELLOW BROWN	F-58105
6	1100	BROWN BROWN RED	270	RED VIOLET BROWN	F-58106

NOTES:

1. RESISTORS ARE ALLEN BRADLEY, 1 WATT, 5% TOLERANCE (KS-19151 L1). CAPACITOR IS WESTERN ELECTRIC CO. 542D TYPE, 1/2 μf, 200VDC.
2. A 101C TYPE COVER SHOULD BE USED TO PROTECT THE PAD.
3. THE PAD VALUE SHOULD BE STENCILED ON COVER FOR FUTURE REFERENCE.

\* STORE UNUSED CONDUCTORS ON VACANT TERMINALS

Fig. 2—Pad Construction and Connections

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raceway with the interface cable between the data set and business machine or lines carrying teletypewriter services. If this requirement cannot be met, it will be necessary to run the telephone (data) line in SK (shielded) wire between the data set and cable distribution terminal or building entrance.

**3.04** The data set shall be installed in conformance with existing practices covering installation of station sets.

**3.05** The customer must furnish a standard ac power receptacle. This receptacle must be on a circuit that is not controlled by a switch.

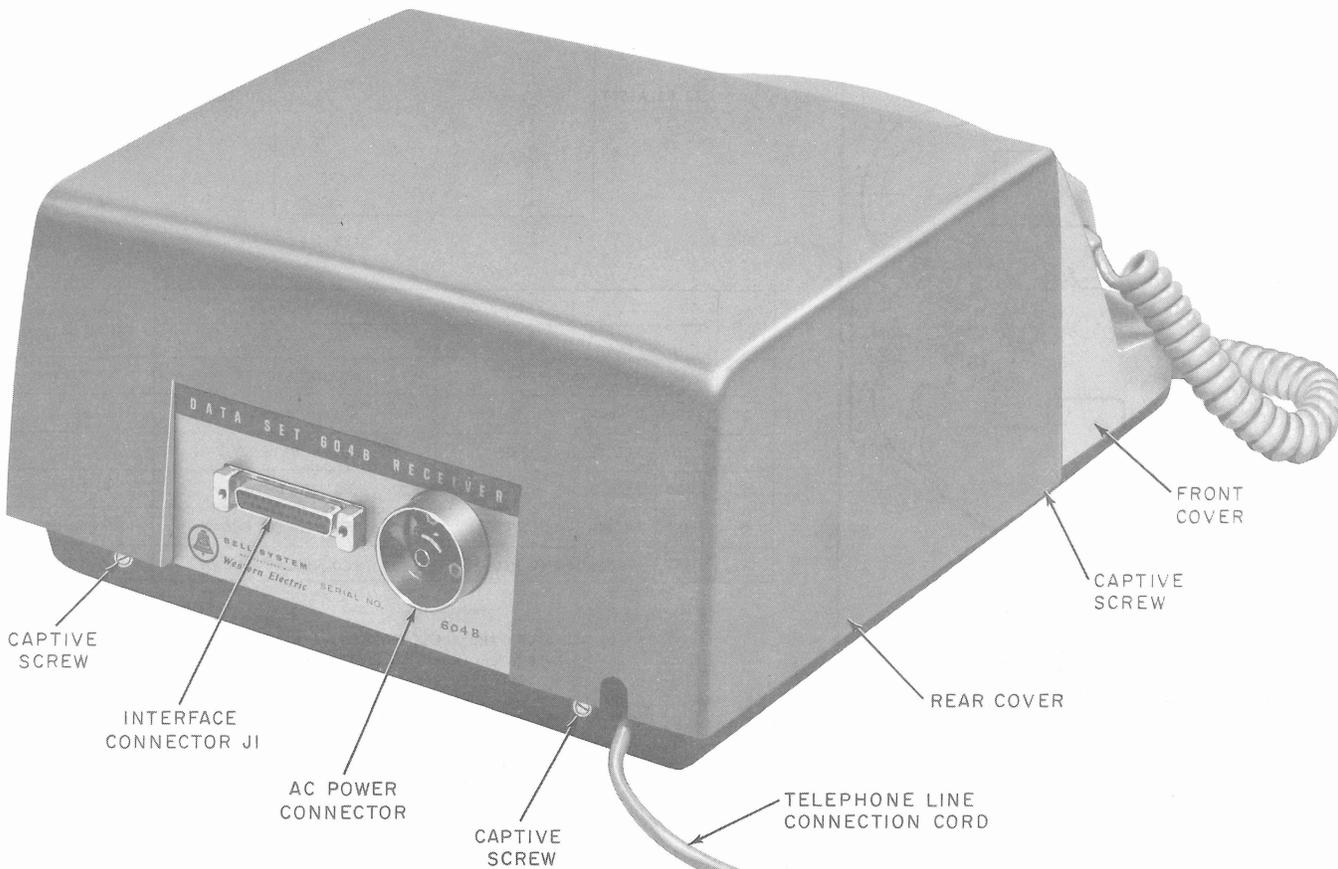
**Note:** To minimize noise and interference, the business machine and the data set should be served from the same ac distribution panel. A test using the 6A impulse counter should

be made to detect any noise, as outlined in Section 596-018-500. If the test requirements are not met, a bond must be provided to improve the grounding conditions for the business machine and the data set. The method of providing this bond should be in accordance with local instructions.



*To ensure the proper operation of the data set, the interface connection cable (provided by the customer) should provide separate ground leads for the following.*

- One for each received data lead, receive data channel A (RDA), receive data channel B (RDB), and receive data channel C (RDC). These grounds should be connected to the signal ground (SG) at interface connector J1, shown in Fig. 3.



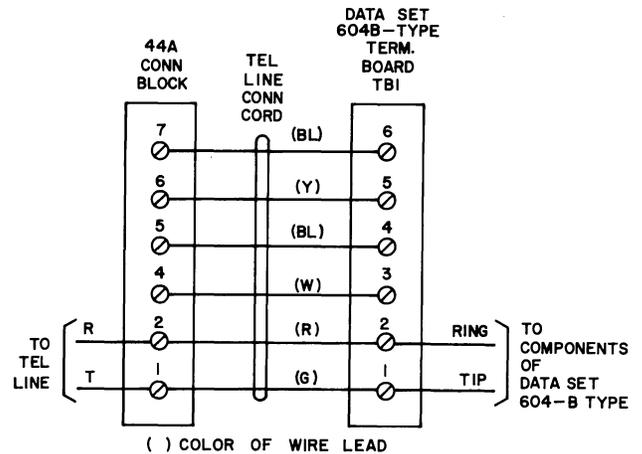
**Fig. 3—Data Set 604B-Type—Rear View**

- One which is connected to the signal ground (SG) at interface connector J1 for grounding the lead data terminal ready (DTR) and automatic answer (AA). This ground lead may also be used for a ground return for reverse channel send (RCS).

**3.06** Locate the data set within the range of the business machine connection cord (provided by the customer). This cord should not exceed 50 feet in length, and connects to the interface connector J1 shown in Fig. 3. The interface leads that connect to the associated business machine via this cord are shown in Table C. The pins of interface connector J1 not shown in Table C are not used.

**3.07** Figure 4 shows the connections of the data set telephone line cord to the telephone line connector block.

**3.08** To complete the installation, apply power by connecting the ac power cord, which is shipped with the data set, between the ac power connector of the data set and the local ac power receptacle.



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**Fig. 4—Data Set 604B-Type—Telephone Line Connection Diagram**

**4. INSTALLATION TESTING**

**4.01** Upon the completion of the installation procedure for the data set, it must be tested as outlined in Section 596-018-500. The testing is required to ensure the proper operation of the data set following installation.

**TABLE C**

**INTERFACE CONNECTOR LEAD ASSIGNMENTS**

PIN NO.	DESIGNATION	LEAD ASSIGNMENT
21	AA	Automatic Answer
20	DTR	Data Terminal Ready
22	RI1	Ring Indicator 1
23	RI2	Ring Indicator 2
6	DSR	Data Set Ready
11	RCS	Reverse Channel Send
25	RDC	Receive Data (Channel C)
24	RDB	Receive Data (Channel B)
3	RDA	Receive Data (Channel A)
7	SG	Signal Ground
1	FG	Frame Ground
9	+18	Positive Supply Voltage (test)
10	-18	Negative Supply Voltage (test)