DATA SET 212A-L1A/2A
TRANSMITTER-RECEIVER
INSTALLATION AND CONNECTIONS

CONTENTS PAGE

1. GENERAL

1.01 This section contains information needed to install options and to install and connect a data set (DS) 212A-L1A/2A. The data set should be installed in conformance with the general instructions given in Section 590-010-200. Refer to Section 590-010-202 for installation of multiset arrangements in 40A-type data mountings.

1.02 This section is reissued to provide BSP coverage for the new version of DS 212A-L1A/2A. The new version provides all the features and options of the older DS 212A and in addition provides additional interface circuits, options, and simplified testing. These features are described as follows:

- Test Voltages—Plus and minus 14 Vdc have been provided on pins 9 and 10 of the customer interface to facilitate data set testing.

- Test Mode (TM) Indication and Make Busy/Analog Loop (CN)—A new customer option enables either pin 25 or pin 18 of the customer interface to control the CN circuit. When CN is optioned for pin 18, the TM circuit can be optionally installed on pin 25. CN on pin 18 and TM on pin 25 would be used to implement an interface which would be compatible with the proposed International Organization for Standardization 25-pin interface.

- Interface Controlled Remote Digital Loop (RL)—When this new customer option is activated, the RL test may be activated through pin 21 of the customer interface.

- Speed Control—This new customer option enables high-speed or low-speed operation of an originating data set to be controlled through pin 23 of the customer interface or with the front panel HS button.

1.03 Prior to installing the data set, verify that the overall facilities meet type 2 requirements specified in the section entitled Data Systems—DATAPHONE® Service—Direct Distance Dialing Network—Test Requirements for Subscriber, Foreign Exchange, and Remote Exchange Lines (314-205-501).

1.04 Data set 212A should be located near the customer-provided equipment (CPE) because the interface cord provided by the customer must not exceed 50 feet in length (to reduce stray capacitance and conform to Electronic Industries Association [EIA] standards). To minimize inductive interference to data signals on the telephone (data) line, the line should not be carried in the same run as the cable between the data set and CPE or lines connected to teletypewriter services. If this condition cannot be met, it will be necessary to run the telephone (data) line in type SK (shielded), or equivalent, station wire between the data set and cable distribution terminal or building entrance. Ground the shield at one end only, preferably the distribution terminal end.

1.05 Low voltage alternating current is supplied to the data set by the KS-21239-L5 plug-mounted transformer. The customer must provide a standard 3-wire, grounded 105 to 129V at 57 to 63 Hz, power receptacle that is easily accessible to the data set. The power required is approximately 9 watts.

Caution: If the outlet has a metal cover, do not remove the center screw to mount the transformer. When this screw is removed, it is possible for the metal cover to fall across the prongs of the transformer.

1.06 A 25-pin female connector is provided at the rear of the data set for connection to the CPE. The customer must provide a cord terminated with a Cinch or Cannon DB-19604-432 plug equipped with a DB-51226-1 hood (or equivalent). Data set connections to the CPE are in accordance with Table A.

1.07 A 25-pin male connector is provided at the rear of the data set for connection to telephone company (telco) equipment via the M13F cord. Data set connections to telco equipment are in accordance with Table B.

1.08 To gain access to the circuit packs and option switches, it is necessary to remove the data set from the housing:

(a) Remove the front cover by gently depressing it at the top and rotating it down and out of the housing.

(b) Remove the data set from the housing by pulling on the wire handle on the faceplate.

Note: Figure 1 shows the data set unfolded for locating option switches. Change options without unfolding CM1.

1.09 To reassemble the data set, proceed as follows:

(a) Slide the data set into the housing. Ensure that the data set is completely plugged into the connector in the rear of the housing.

(b) Replace the front cover by hooking the tabs on the bottom of the cover into the detents in the bottom of the housing.

(c) Gently rotate the top of the front cover into the housing until it snaps into place.

1.10 A label (E-6550) and holder (841 788 292) are available for use with DS 212A-L1A to permit identification of the circuit number and trouble call number. The label has a pressure sensitive adhesive which can be used to adhere to the bottom of the front cover. Mount the holder below the center of the front cover and flush with the front edge.

2. OPTIONS

2.01 Before the data set is placed in service, it should be disassembled and checked to make sure proper options are installed. The factory-provided options are designated in Table C.

2.02 Options are installed and removed by means of multiple section rocker assemblies (Fig. 2) strapping plugs and by a screw switch on the backplane (signal ground to frame ground connection). A long screwdriver (6-inch) is needed to operate the screw switch that controls the grounding option. If the appropriate screwdriver is not available, the backplane may be taken out of the housing by removing the two screws on the bottom of the housing.

2.03 Refer to Table C for a summary of data set options.

2.04 ***Tip, Ring Make Busy:*** When option F (IN) is selected, a resistor is connected from tip to ring when the data set is made busy. It is recommended for use on terminate-only lines used behind line hunting equipment.

2.05 ***CC Indication for Analog Loop:*** When option ZF (ON) is selected, the CPE receives a CC (data set ready) ***on*** indication while the data set is in the analog loop mode.

2.06 ***Speed Control:*** When option XJ (interface) is selected, it enables high-speed or low-speed operation of an originating data set to be controlled through pin 23 of the customer's interface. When option XK (HS button) is selected, high-speed or low-speed operation is controlled by the front panel HS button.

2.07 ***Interface Controlled Make Busy/Analog Loop-CN:*** When option YE (IN) is selected,

TABLE A

CUSTOMER INTERFACE

PIN NO.	EIA DESIG	FUNCTION	SIGNAL ORIGINATED BY CPE OR BY DS
2	BA	Send Data (SD) (Note 1)	CPE
3	BB	Receive Data (RD) (Note 1)	DS
5	CB	Clear-to-Send (CS) (Note 2)	DS
6	CC	Data Set Ready (DSR) (Note 2)	DS
7	AB	Signal Ground (SG)	Ground
8	CF	Received Line Signal Detector (RLSD) (Note 2)	DS
9	—	+P	DS
10	—	—P	DS
12	CI	Speed Indication (CI) (Note 3)	DS
15	DB	Transmit Clock (SCT)	DS
17	DD	Receive Clock (SCR)	DS
18	(CN)	Make Busy/Analog Loop (Optional Pin)	DS
20	CD	Date Terminal Ready (DTR) (Note 2)	CPE
21	RL	Remote Digital Loopback	DS
22	CE	Ring Indicator (RI) (Note 5)	DS
23	CH	Speed Select Originate	DS
24	DA	External Transmit Clock (SCTE)	CPE
25	CN or TM	Make Busy/Analog Loop or Test Mode (Note 4)	CPE

Note 1: Space = +V; Mark = —V

Note 2: ON = +V; OFF = —V

Note 3: High Speed = +V; Low Speed = —V

Note 4: Loopback = +V; Normal Use = —V

Note 5: Ringing = +V; No Ringing = —V

the CN (make busy/analog loop) interface lead from the CPE can be used to make the telephone line appear busy; or if the data terminal ready lead is ***on,*** to place the data set in the analog loop test mode.

2.08 ***Transmitter Timing:*** This option must be selected when the data set is to be used in the high-speed mode. The option selects one of three possible sources for the transmitter timing signal. The state of this option does not affect operation in the low-speed mode.

- YC (INTERNAL)—The transmitter clock is derived from a master oscillator within the data set. This option is recommended for 1200-bps character-asynchronous operation.

- YD (EXTERNAL)—The transmitter clock is phase-locked to an external source provided

TABLE B

TELEPHONE AND ACU INTERFACE

PIN NO.	DESIGNATION	FUNCTION
1	L	Telephone set line lamp control from data set
2 3	MB1 MB	Make busy relay contact in data set
4	LG	Ground from data set for telephone set line lamp
5	TD	Talk/data lead from telephone set to data set
7	T	Telephone line tip
8	R	Telephone line ring
12	RD	Data set ring detector contact closure to ground
14	C	Data mode indication contact closure to ground for DAS 801C
16	D1	Data mode contact closure to ground to data set from DAS 801-type
21	T1	Tip of telephone set
22	R1	Ring of telephone set
23 24	A A1	"A" lead control for KTU or ACU applications
25	TDG	Data set ground return for TD control signal

by the CPE on the DA circuit (transmit signal element timing, data terminal equipment source).

- WI (SLAVE)—The transmit clock is phase-locked to the DD (receive clock) interface circuit. This option is provided for possible use with multiplexers or other systems requiring slave timing.

2.09 ***1200-bps Operation:*** When option YG (ASYNC/START-STOP) is selected, the data set operates in the 1200-bps character-asynchronous format. When option YH (SYNC) is selected, the data set operates in the 1200-bps synchronous format. Transmit and receive clocks which are provided for synchronous operation are not provided for character-asynchronous operation. The state of this option must be the same for any pair of DSs 212A-L1A/2A which communicate with each other. The state of this option does not affect operation in the low-speed mode.

Note: When option YH is selected, the 1200-bps transmit and receive clocks are present on the DB (pin 15) and DD (pin 17) circuits at all times, even when the data set is in the low-speed mode.

2.10 ***Character Length:*** A decision must be made on this option whenever option YG (1200-bps operation-ASYNC/START-STOP) is selected. The state of this option does not affect operation in the low-speed mode.

- YI (Character length 9)—When this option is selected, the total number of bits per character (including start and stop bits) must be nine.

- YJ (Character length 10)—When this option is selected, the total number of bits per character (including start and stop bits) must be 10.

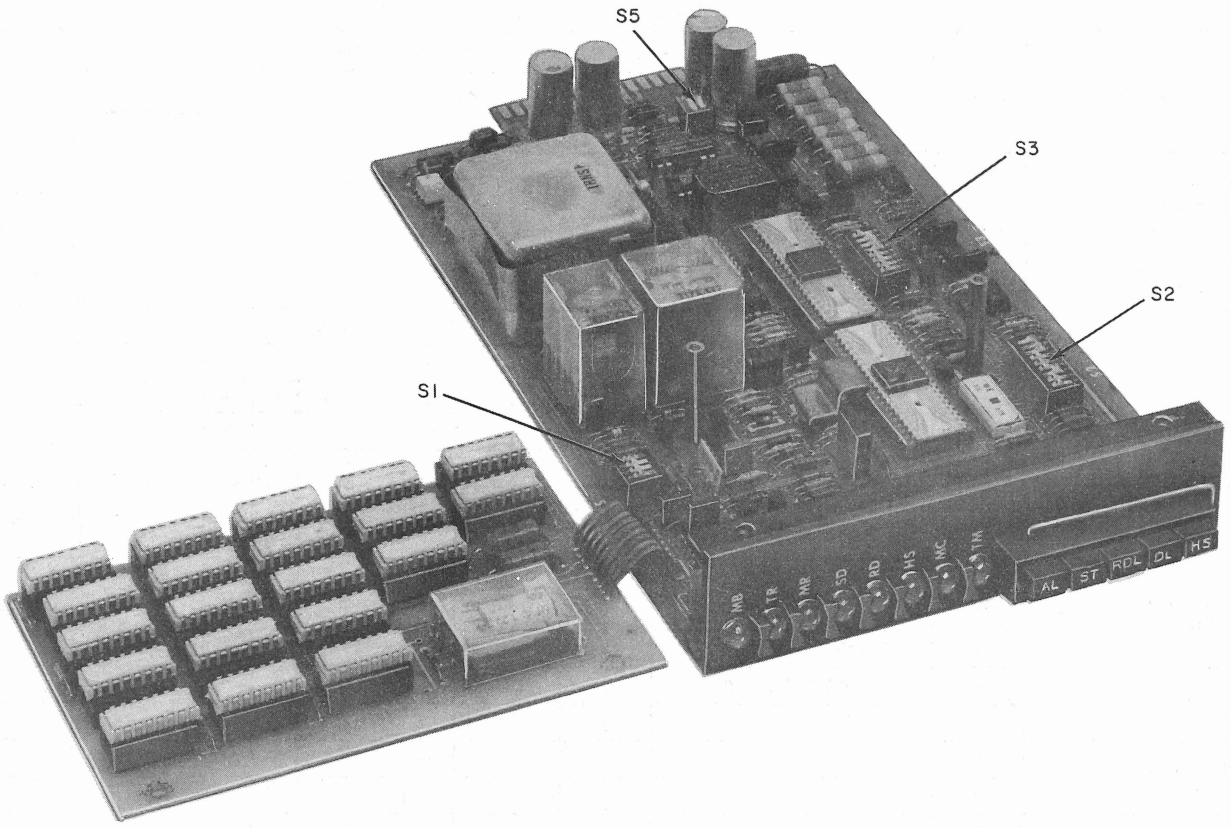


Fig. 1—Data Set Unfolded for Location of Option Switches

The bits between the start and stop bits do not have to conform to any coding system. The setting of this option must be the same for any pair of DSs 212A-L1A/2A which communicate with each other. If option YH (SYNC) is selected, the character length option has no effect on data set operation.

2.11 ***Receiver Responds to Digital Loop:*** This option is active only when the data set is in the high-speed (1200-bps) mode. When option YK (IN) is selected, the data set responds to a request for a digital loop from the distant data station. When option YK (OUT) is selected, the data set cannot be put into the digital loop test mode remotely. This option does not affect the operation of the DL switch on the front panel and does not affect operation in the low-speed mode.

2.12 ***Interface Controlled Remote Digital Loop (RDL):*** When option XL (IN) is selected, a positive voltage on pin 21 will enable the RDL circuitry the same as depressing the RDL button on the front panel. When option XM (OUT) is selected, the RDL circuitry can be enabled only by depressing RDL button on the front panel.

2.13 ***Loss of Carrier Disconnect:*** When option S (IN) is selected, the data set terminates the call if carrier disappears from the line for approximately 350 ms.

2.14 ***Receive Space Disconnect:*** When option V (IN) is selected, the data set terminates the call upon receiving approximately 1.6 seconds of spacing signal.

2.15 ***CB and CE Indications:*** When option A (COMMON) is selected, the CB (clear-to-send) interface lead is forced ***off*** whenever the CF (received line signal detector) lead goes ***off.*** When option B (SEPARATE) is selected, the state of the CF lead has no effect on the state of the CB lead.

TABLE C

DATA SET 212A OPTIONS

FEATURE	OPTION	DESCRIPTION	SWITCH SETTING											PROVIDE
			S1 SWITCH CONTACTS											
			1	2	3									
Tip, Ring Make Busy	F	IN	X	—	—									One per set
	E*	OUT	O	—	—									
CC Indication for Analog Loop	ZF*	ON	—	—	X									One per set
	ZE	OFF	—	—	O									
			SWITCH CONTACTS											
			S2									S5		
			1	2	3	4	5	6	7	8	9	1	2	
Speed Control	XJ	INTERFACE	O	—	—	—	—	—	—	—	X			One per set
	XK*	HS BUTTON	X	—	—	—	—	—	—	—	O			
Interface Controlled Make Busy/Analog Loop-CN	YE	IN	—	O	—	—	—	—	—	—	—			One per set
	YF*	OUT	—	X	—	—	—	—	—	—	—			
Transmitter Timing	YC*	INTERNAL	—	—	O	O	—	—	—	—	—			One per set
	YD	EXTERNAL	—	—	O	X	—	—	—	—	—			
	WI	SLAVE	—	—	X	O	—	—	—	—	—			
1200-bps Operation	YG*	ASYNC/START-STOP	—	—	—	—	O	—	—	—	—	O	O	One per set
	YH	SYNC	—	—	—	—	X	—	—	—	—	X	X	
Character Length (Use With YG)	YI	9-BIT	—	—	—	—	—	O	—	—	—			One per set
	YJ*	10-BIT	—	—	—	—	—	X	—	—	—			
Receiver Responds to Digital Loop	YK*	IN	—	—	—	—	—	—	O	—	—			One per set
	YL	OUT	—	—	—	—	—	—	X	—	—			
Interface Controlled Remote Digital Loop	XL	IN	—	—	—	—	—	—	—	X	—			One per set
	XM	OUT	—	—	—	—	—	—	—	O	—			
			S3 SWITCH SETTINGS											
			1	2	3	4	5	6	7	8				
Loss of Carrier Disconnect	S*	IN	X	—	—	—	—	—	—	—				One per set
	R	OUT	O	—	—	—	—	—	—	—				
Receive Space Disconnect	V*	IN	—	X	—	—	—	—	—	—				One per set
	Y	OUT	—	O	—	—	—	—	—	—				
CB and CF Indications	A*	COMMON	—	—	X	—	—	—	—	—				One per set
	B	SEPARATE	—	—	O	—	—	—	—	—				
Send Space Disconnect	T*	IN	—	—	—	X	—	—	—	—				One per set
	U	OUT	—	—	—	O	—	—	—	—				
Automatic Answer	ZH*	IN	—	—	—	—	O	—	—	—				One per set
	ZG	OUT	—	—	—	—	X	—	—	—				
Answer Mode Indication	X	CE ON	—	—	—	—	—	X	—	—				One per set
	W*	CE OFF	—	—	—	—	—	O	—	—				
Speed Mode	YO	HIGH	—	—	—	—	—	—	X	—				One per set
	YP*	DUAL	—	—	—	—	—	—	O	—				
Interface Speed Indication - CI	YQ	IN	—	—	—	—	—	—	—	X				One per set
	YR*	OUT	—	—	—	—	—	—	—	O				
			STRAPPING OPTIONS											
CN and TM Assignments	XO*	CN 25, TM NC	INSTALL E1 - E2, E3 - E4											One per set
	XN	CN 18, TM NC	INSTALL E1 - E2, E4 - E5											
	XR	CN 18, TM 25	INSTALL E2 - E3, E4 - E5											
Signal Ground to Frame Connection	Q*	IN	S1 CLOSED											One per 47D2 DM
	P	OUT	S1 OPEN											

X = Contact Closed — = Contact Not Applicable O = Contact Open * = Factory-Provided

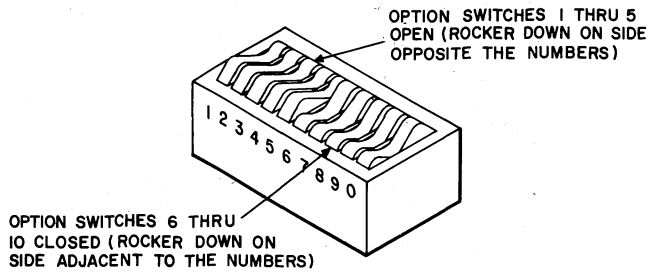


Fig. 2—Details of Option Switch

2.16 ***Send Space Disconnect:*** When option T (IN) is selected, the data set transmits approximately 4 seconds of spacing signal at the end of a data call. This causes the distant data set to disconnect if it is equipped with option V (receive space disconnect—IN).

2.17 ***Automatic Answer:*** If option ZH (IN) is selected, the data set answers a telephone call without manual assistance if the CD (data terminal ready) interface lead is ***on.*** This feature is disabled when the AL switch on the front panel is pressed or when the CN (make-busy/analog loop) interface circuit is ***on*** and option YE (CN circuit—IN) is installed.

2.18 ***Answer Mode Indication:*** This option provides a means whereby the user can determine if the data set answered or originated the call. When option X (ON) is selected, the CE (ring indicator) lead at the answering station remains ***on*** after the call has been answered. This option does not affect normal operation of the CE lead. For the originating data set, the CE circuit remains ***off*** regardless of the state of the option.

2.19 ***Speed Mode:*** If option YO (HIGH) is selected, low-speed operation is prevented because the BB (received data), CB (clear-to-send), and CF (received line signal detector) leads are clamped ***off*** if an attempt is made to operate in the low-speed mode. If option YP (DUAL) is selected, the data set operates normally for both speed modes.

2.20 ***Interface Speed Indication:*** When option YQ (IN) is selected, the data set provides an indication of the data set speed mode on the CI (speed mode indicator) lead. The high-speed mode is indicated by an ***on*** condition on the CI lead. It is ***off*** in the low-speed mode and at all other times. The CI lead is disconnected from the CPE interface when option YR (OUT) is selected.

2.21 ***"CN and TM Assignments":*** This group of options is provided by strapping plugs. They allow the user to configure the customer interface to be compatible with the ISO standard or to be compatible with data set interfaces that use the CN function on pin 25. When option XO is selected, the CN function is assigned to pin 25, but the TM function is not available. When option XN is selected, the CN function is assigned to pin 18, but the TM function is not available. When option XR is selected, the CN function is assigned to pin 18, and the TM function is assigned to pin 25.

Note: If analog loop control through the customer interface is required, option YE must be selected.

2.22 ***Signal Ground to Frame Ground Connection:*** When option Q is selected, (signal ground) interface lead is connected to frame ground. This arrangement provides additional margin against longitudinal power line noise. When option P is selected, the AB (signal ground) interface lead is disconnected from the frame ground. Due consideration should be given to possible noise conditions, ground potential differences, safety conditions, local electrical codes, and the data terminal manufacturer's recommendations.

3. INSTALLATION

3.01 The procedure for installing a DS 212A-L1A/2A is as follows:

(1) Unpack the data set and remove the protective covering from the housing.

This is important to prevent damage due to overheating.

(2) Disassemble the data set as directed in paragraph 1.08.

(3) Install the required options called for on the service order. Refer to Table C.

(4) Mark the installed options on the option label (E-6898) and attach it to the bottom of the housing.

(5) Reassemble the data set as directed in paragraph 1.09.

(6) Connect the data set to the telephone line and to power as directed on the appropriate connection diagram.

(7) Perform installation tests as directed in Section 592-034-500.

4. CONNECTIONS

4.01 The data signal power level reaching the serving central office (SCO) should be no greater that -12 dBm. Usually the average loop loss between the SCO and the data set is -3 dB or greater. This -3 dB loop loss combined with the fixed -9 dBm output level of the data set ensures that the signal reaching the SCO is not greater than -12 dBm. In some cases the loop loss is less than -3 dB, and should be padded down. To meet the required power level, it may be necessary to install a pad external to the data set. The necessary pad may be ordered assembled or may be made up in the field and installed in accordance with Fig. 3.

4.02 In the event the actual loop loss is not known, it may be determined as follows.

(1) Dial the central office milliwatt supply or request the local testboard to send 1000-Hz tone at 0 dBm on the loop.

(2) Use a transmission test set with 600-ohm termination to measure the level of the incoming signal. The numerical reading is equal to the loop loss in dB (for example, -6 dBm on the meter is equal to 6 dB loop loss).

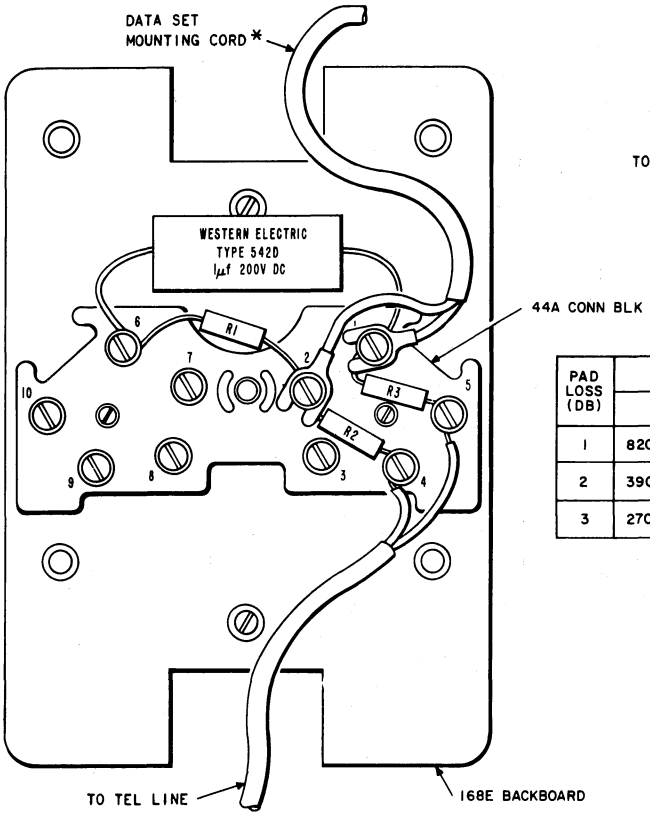
4.03 When the loop loss has been determined, the pad value may be selected as follows:

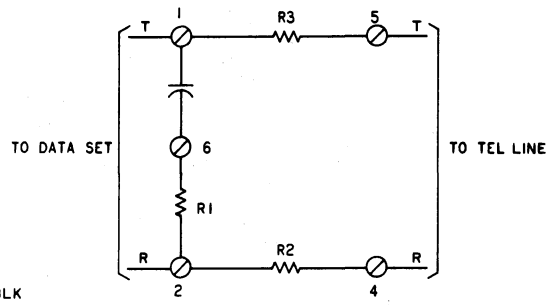
LOOP LOSS	USE
0.0 to 2.0 dB	2-dB pad
2.0 to 3.0 dB	1-dB pad
Greater than 3.0 dB	No pad

4.04 ***DS 212A-L1A/2A Without Automatic Calling Unit (ACU):*** When a single DS 212A-L1A/2A is installed without an ACU, connect cables and connect tip and ring as shown in Fig. 4. Figure 5 provides detailed wiring which may be useful in troubleshooting this arrangement.

4.05 ***DS 212A-L1A/2A With ACU:*** When a single DS 212A-L1A/2A is installed with an ACU, connect cables and connect tip and ring as shown in Fig. 6. Figure 7 provides detailed wiring which may be useful in troubleshooting this arrangement. Figure 8 shows an alternate connection which requires an M15H cord (order separately).

4.06 ***Single Data Set With Shared Telephone Set:*** If DS 212A-L1A/2A shares the telephone set with other DSs 212A or other new family data sets, the connections are made as shown in Fig. 9. To eliminate the need for several 110-Vac outlets, the individual KS-21239-L5 transformers can be plugged into a multiple power outlet strip. A 602-15 Waber Electric power outlet strip accommodates three transformers. A 1A2 power panel accommodates six transformers. A KS-14532-L20 or equivalent cord is required with the 1A2 power panel. Figure 10 shows the KS-21253-L3 adapter used with this arrangement. Figure 11 shows the internal wiring of this adapter, and may be useful in troubleshooting.





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

NOTES:
1. RESISTORS ARE ALLEN BRADLEY, 1 WATT, 5% TOLERANCE (KS-19151 L1). CAPACITOR IS WESTERN ELECTRIC CO. 542D TYPE, 1UF, 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.

Fig. 3—Connections to Insertion Loss Pad

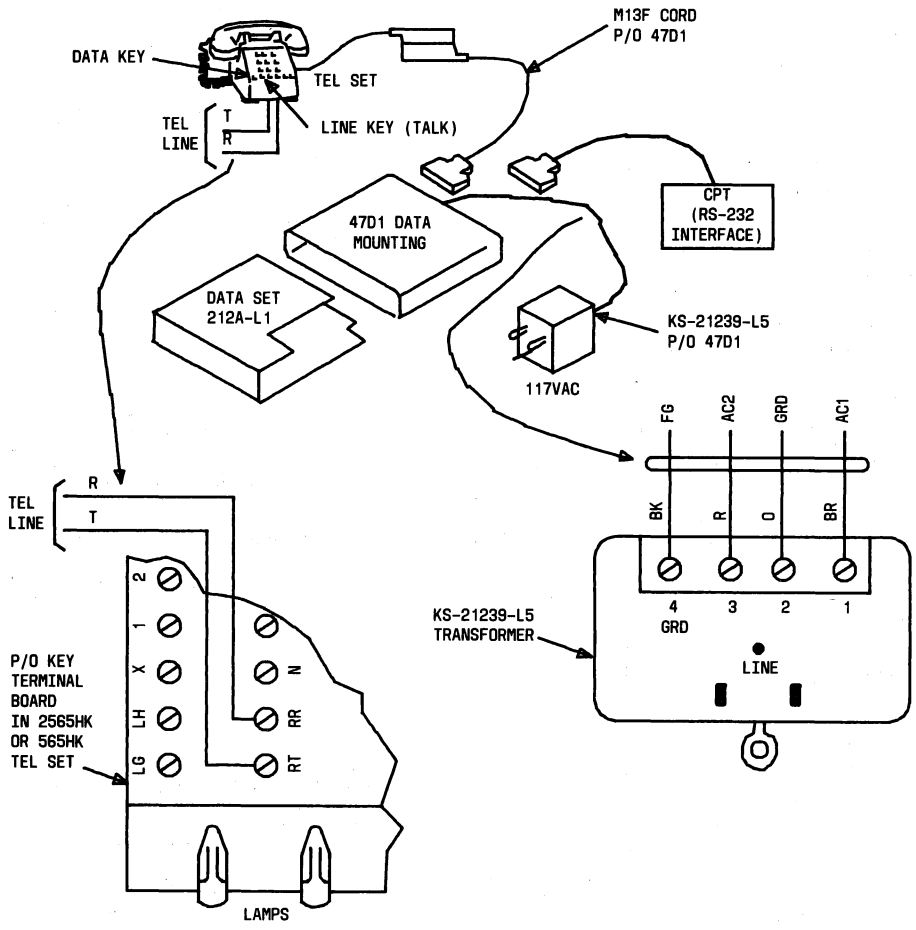
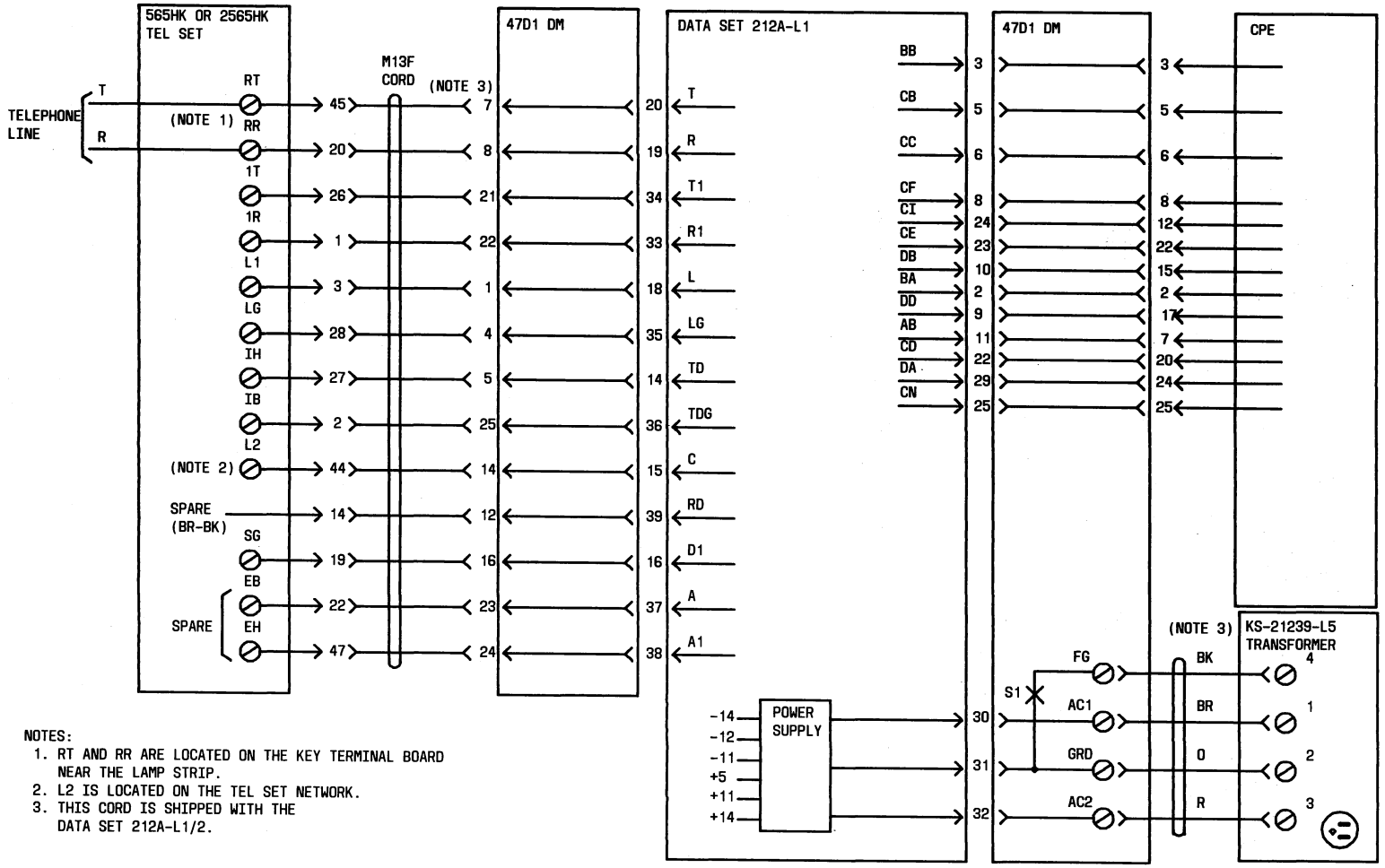


Fig. 4—Installation of DS 212A-L1/2 Without an ACU

5. REFERENCES

5.01 The following Bell System Practices contain additional information which may be useful when installing DS 212A-L1A/2A.

SECTION	TITLE
502-500-120	Telephone Sets—540, 560, 1560, and 2560 Series—Common Installation and Maintenance Information
590-010-202	Data Sets—Station Arrangements for Mixed Data Set Types in 40A2 Data Mounting
592-034-100	Data Set 212A Transmitter-Receiver—Description and Operation
592-034-500	Data Set 212A Transmitter-Receiver—Test Procedure
598-010-011	Data Auxiliary Set 801A5 and 801A6 for Automatic Calling—Description and Operation
598-012-101	Data Auxiliary Sets 801C3 and 801C4—Description and Operation
598-012-102	Data Auxiliary Set 801C-L1/2—Description and Operation



NOTES:
1. RT AND RR ARE LOCATED ON THE KEY TERMINAL BOARD NEAR THE LAMP STRIP.
2. L2 IS LOCATED ON THE TEL SET NETWORK.
3. THIS CORD IS SHIPPED WITH THE DATA SET 212A-L1/2.

Fig. 5—Connection Wiring for DS 212A-L1/2 Without an ACU

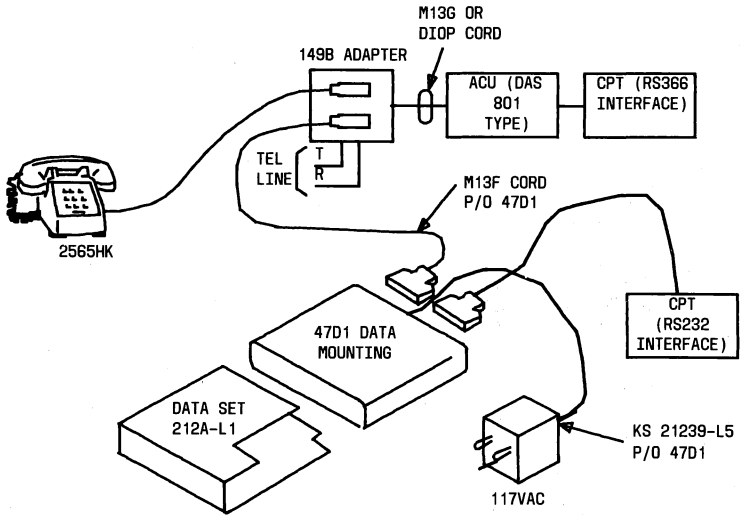


Fig. 6—Installation of DS 212A-L1/2 With an ACU

DAS 801-TYPE ACU OPTIONS

	DAS 801C-L1/2 (BSP 598-012-202)	DAS 801C4 (BSP 598-012-201)	DAS 801A6 (BSP 598-010-201)
REQUIRED	X, T, B, ZG, ZP	X, T, B, ZG, ZB, ZH, ZM, M	X, T, B, ZB, ZF, ZG, M
NOT USED	W, S, E, Q, ZA, ZN	W, S, E, Q, F, ZA, ZC, ZJ, ZK, ZL, N, G, Z	W, S, E, Q, F, ZA, ZC, ZE, N, G, Z
CHOOSE	V OR Y, R OR H, G OR Z, ZU OR ZV, ZQ OR ZR OR ZS OR ZT	V OR Y, R OR H, ZD OR A	R OR H, ZD OR A

NOTES:
1. OPTIONS DAS 801 PER ADJACENT TABLE. REFER TO 598-010-201, 598-012-201 OR 598-012-202 FOR INSTALLATION AND REMOVAL OF OPTIONS.
2. DAS 801C-L1/2 IS EQUIPPED WITH AN M13G CORD. DAS 801C4 AND DAS 801A6 ARE EQUIPPED WITH A D10P CORD.
3. IF EITHER DAS 801C-L1/2 OR 801C4 IS USED, THE TELEPHONE LINE MUST BE ARRANGED FOR TOUCH-TONE SERVICE. IF DAS 801A6 IS USED OR IF DAS 801C-L1/2 OR 801C4 HAS OPTION V INSTALLED, THE TELEPHONE LINE MUST BE ARRANGED FOR GROUND-START OPERATION.
4. INSTALLER STRAPS.
5. TERMINAL DESIGNATIONS SHOWN ARE FOR 565HK AND 2565HK TELEPHONE SETS. ADD STRAP IN TELEPHONE SET AS SHOWN. FOR THE 662A1 OR 2662A1 TELEPHONE SET, CONNECT THE INSULATED AND STORED (V-BR) LEAD OF THE D50K MOUNTING CORD TO TERMINAL 1. NO STRAPPING IS REQUIRED.
6. L2 IS LOCATED ON THE TEL SET NETWORK.
7. THIS CORD AND TRANSFORMER SHIPPED WITH DATA SET 212A-L1/2.

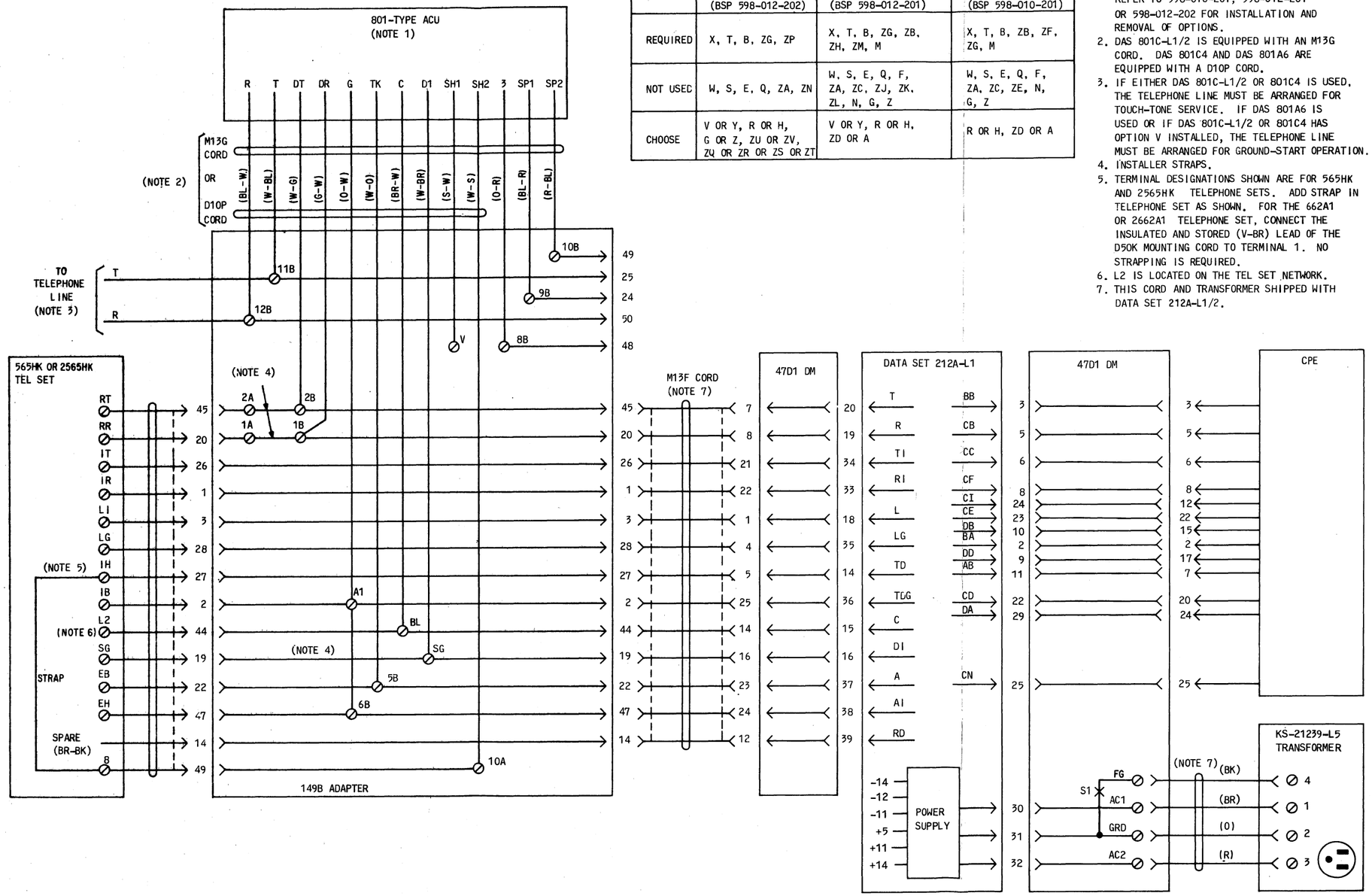


Fig. 7—Connection Wiring for DS 212A-L1/2 With an ACU

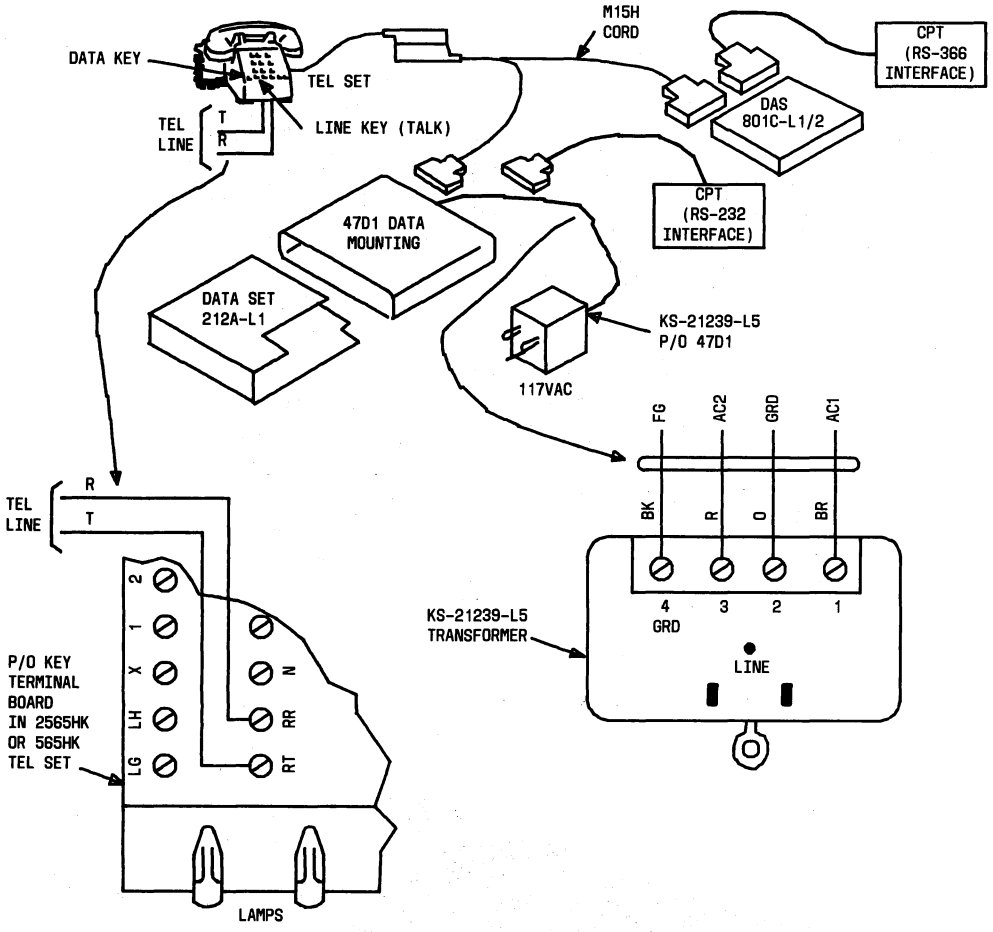


Fig. 8—Alternate Method of Installing DS 212A-L1/2 With 801C-L1/2 ACU

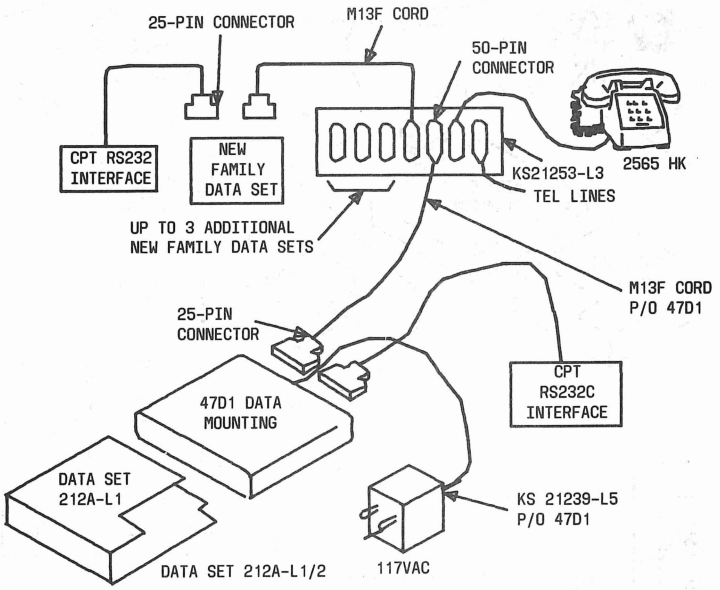


Fig. 9—Single Data Set With Shared Tel Set

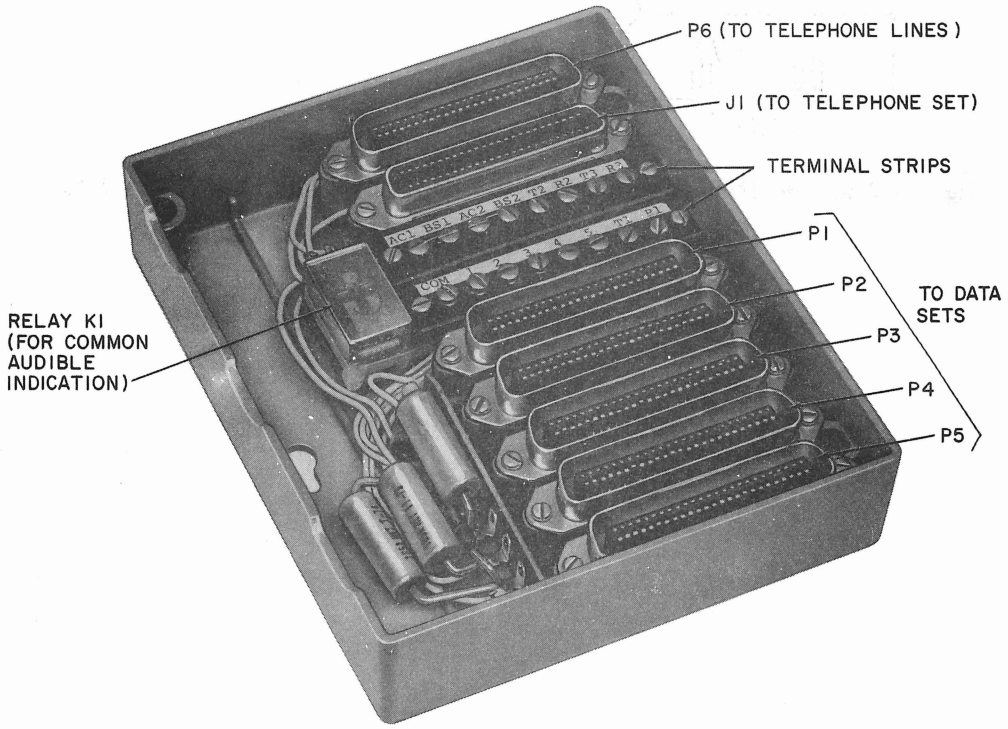
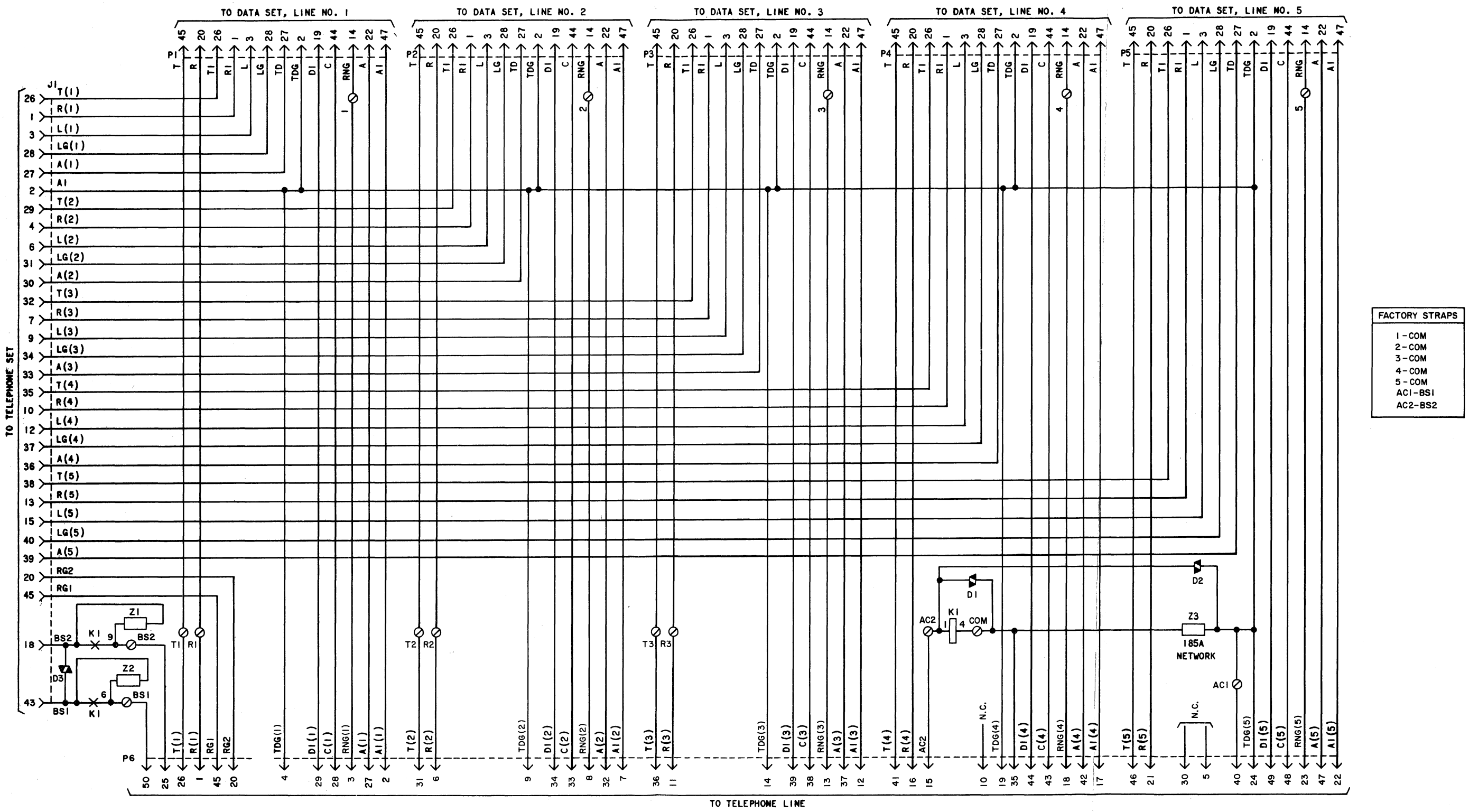


Fig. 10—KS-21253-L3 Adapter With Cover Removed



FACTORY STRAPS
1-COM
2-COM
3-COM
4-COM
5-COM
AC1-BS1
AC2-BS2

Fig. 11—Internal Wiring of KS-21253-L3 Adapter