551A-TYPE CHANNEL SERVICE UNIT
INSTALLATION AND CONNECTIONS

1. GENERAL

1.01 This section contains information concerning the installation and connection of a 551A-type channel service unit (CSU), Fig. 1. This section also contains option installation information and a list of tests to be performed at time of installation.

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 Refer to the section entitled Data Sets—General Installation and Connection Information (590-010-200).

1.04 The CSU can be installed in a KS-20018-type cabinet or in a 23-inch relay rack. The CSU will operate in an ambient temperature range of +40 to 120°F and a relative humidity less than 95 percent.

1.05 The CSU is normally line powered and is not provided with a power supply and one must be provided if line power is not utilized. Refer to the option discussion to aid in proper power selection.

1.06 To gain access to the terminal boards, option terminals, and fault location filter, it is necessary to remove the top and rear covers. To remove the top cover, remove the six retaining screws and lift off the top. To remove the rear cover, remove the six retaining screws and slide off the rear cover.

1.07 A 598-type fault location filter must be installed in the CSU if the repeater is to be tested from a remote location.

2. OPTIONS

2.01 The 551A CSU is provided with a number of options which must be installed prior to placing the CSU in service.

2.02 The S option is provided in manufacture and should be installed when the 598 fault location filter is not used. When the 598 fault location filter is used, the S option should be removed and the R option installed. Refer to Fig. 2 and Table A.

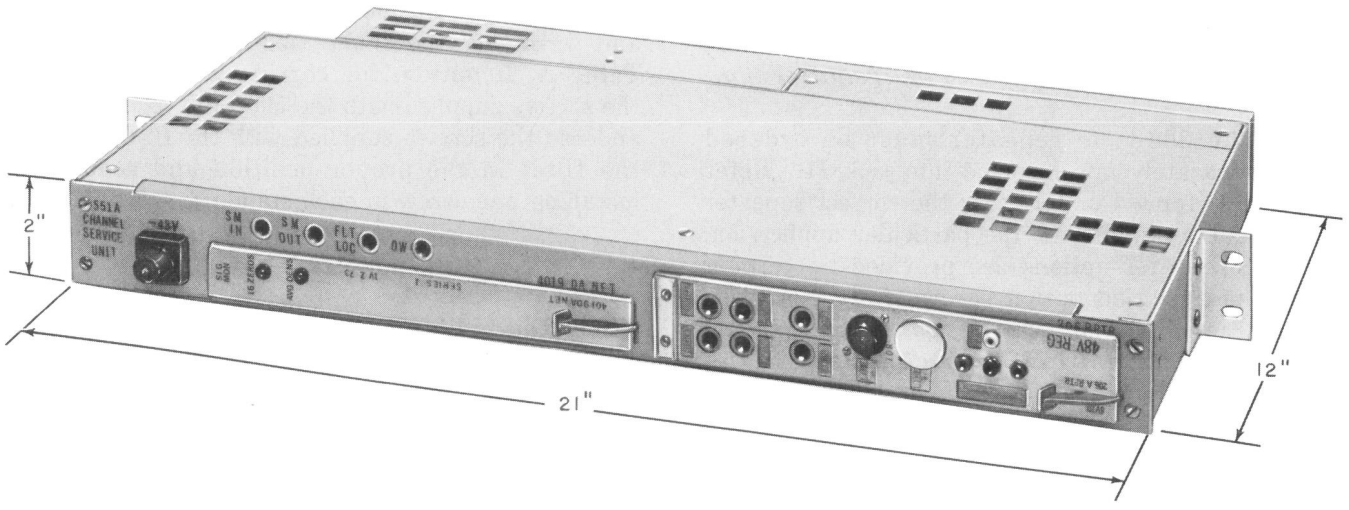

Fig. 1—551A Channel Service Unit

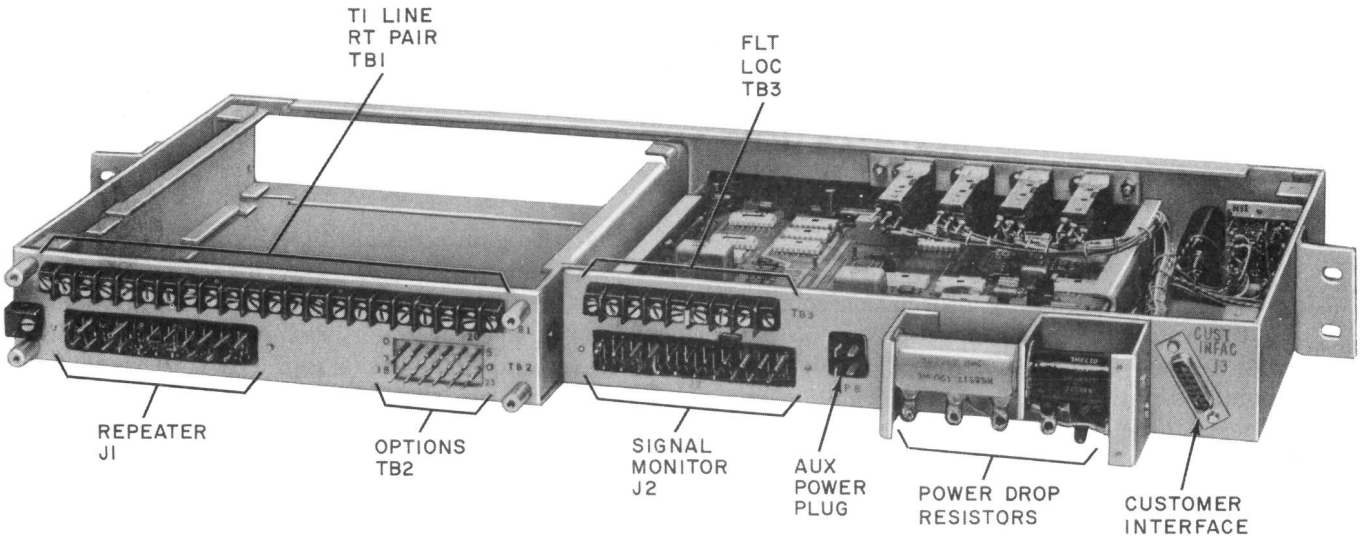

Fig. 2—551A CSU—Rear View With Covers Removed

2.03 The 551A CSU is usually line powered and equipped with 206D- or 206K-type repeaters and wiring option Z in the CSU. In cases where it is necessary to extend the local loop beyond the central office powering capability, the CSU and part of the line can be powered at the customer's end by locally provided power supplies. If required, these auxiliary power supplies must be locally engineered. Powering options are provided by installing the proper strapping. Refer to Table A for the strapping connection and Table B for the specific option or combination of options required for the powering combinations.

Before installing the 206-type repeater, the repeater must be equipped with the proper 836-type network as determined by the T1 line requirements.

2.04 The 206-type repeater must be ordered separately and inserted into jack J1. Refer to Table C for aid in selecting the correct repeater and repeater options for the particular application. The 206 repeater options are provided by turning down the specified option screws fully clockwise (IN position). Option screws not specified should be in the up position (two complete turns counterclockwise).

3. INSTALLATION

3.01 The 551A CSU is designed to mount in a 23-inch relay rack or a KS-20018 cabinet. The two required 841570815 mounting brackets are factory provided.

3.02 The chassis accepts, on a plug-in basis, the 4019DA signal monitor and 206-type repeater. The 206 repeater is not part of the 551A CSU and must be ordered separately.

3.03 A 598-type fault location filter is provided on an optional basis (Fig. 3). The fault location filter is not part of the 551A CSU and must be ordered separately. The particular code of the fault location filter is determined by the T1 line installation. To install the fault location filter, remove the top and rear covers and the 4019DA circuit pack. Connect the four spade tipped leads (stored in the chassis) to the terminal board on the filter. Dress the opposite ends of these wires through the holes provided in the chassis and terminate the spade tips on TB3. Refer to Table A, R option, for correct wiring. Discard the screws supplied with the 598 fault location filter and use the screws supplied with the CSU. Locate the filter in the proper position and secure by installing one screw in each standoff.

4. CONNECTION

4.01 The 551A CSU connection to the T1 lines, order wire, and remote test pair (when provided) is made by screw connection to TB1 (Fig. 2 and 4). Connection to the fault location pair is made by screw connection to TB3. It will be necessary to remove the rear cover to gain access to TB1 and TB3.

4.02 The customer interface connections are made at the rear of the CSU (J3). The CSU is

TABLE A

551A CSU OPTION CONNECTIONS

OPTION	FEATURE	CONNECTION	
		FROM	TO
R	598-type fault location filter installed	Terminal 1* Terminal 2* Terminal 3* Terminal 4*	TB3:7 TB3:6 TB3:5 TB3:4
S	598-type fault location filter not installed	TB3:4 TB3:6	TB3:5 TB3:7 through 1000Ω resistor (see Fig. 4)
T	Station powered†	TB2:6 TB2:8 TB2:9	TB2:7 TB2:10 TB2:13
V		TB2:9	TB2:11
W		TB2:6	TB2:10
X		TB2:0 TB2:1 TB2:2	TB2:5 TB2:4 TB2:3
Y		TB2:9	TB2:12
Z	Line powered	TB2:3 TB2:5	TB2:9 TB2:10

* These terminals are located on the 598-type fault location filter. Four wires have been provided and stored in the CSU for this option.

† These options are used singly or in combination to provide for station power supplies as shown in Table B.

equipped with a subminiature 15-pin female connector, DA-15S. The customer interface cable should be terminated in a 15-pin subminiature connector equipped with a right angle hood and sliding lock assembly that will mate and lock with the connector on the CSU. The maximum cable distance between the customer-provided equipment and the CSU is 500 feet, nominally 24-gauge shielded twisted pair.

4.03 Replace all CSU covers. Perform the procedure specified in 1.06 in reverse order.

5. TEST

5.01 After the CSU has been installed, it should be tested to determine if it is operating properly. Perform the remote loop-back test, repeater test using the fault locating pair from the remote location, and end-to-end test. Refer to Section 595-105-500 for the test procedures.

TABLE B

STATION POWER OPTIONS

STATION POWER	OPTIONS
−48 Vdc	T
+130 Vdc	V, W, X
+130 Vdc −48 Vdc	T, X
+130 Vdc −130 Vdc	W, X, Y

TABLE C

206 REPEATER OPTIONS FOR A ONE-CABLE SYSTEM

CHANNEL SERVICE UNIT			PROVIDE	
			REPEATER	REPEATER OPTION SCREW
Power	Line		206D or 206K	C, E, K
	Station supply*	−48 Vdc	206A or 206H	B, E, H, N
		+130 Vdc	206B or 206J	C, E, K
		+130 Vdc −48 Vdc		B, E, H, N
		+130 Vdc −130 Vdc		C, E, K

* Must be provided locally.

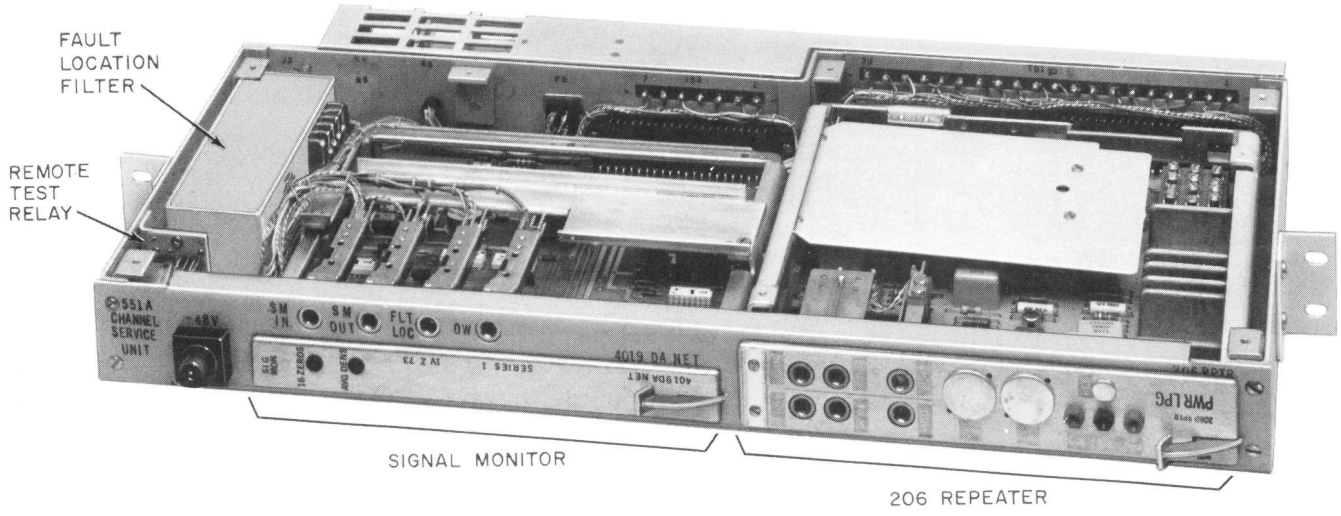

Fig. 3—551A CSU—Cover Removed

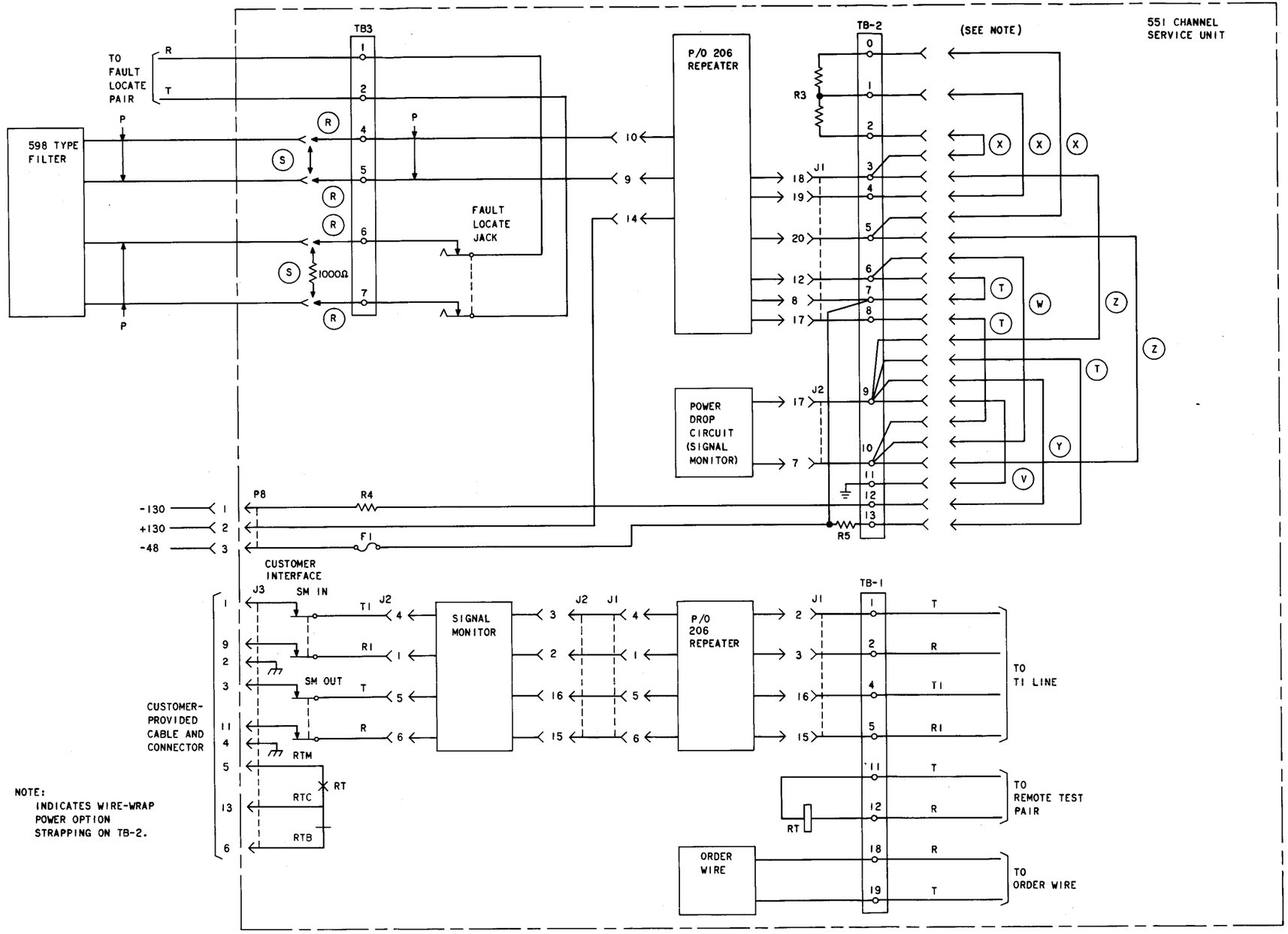

Fig. 4—551A CSU—Connection Diagram