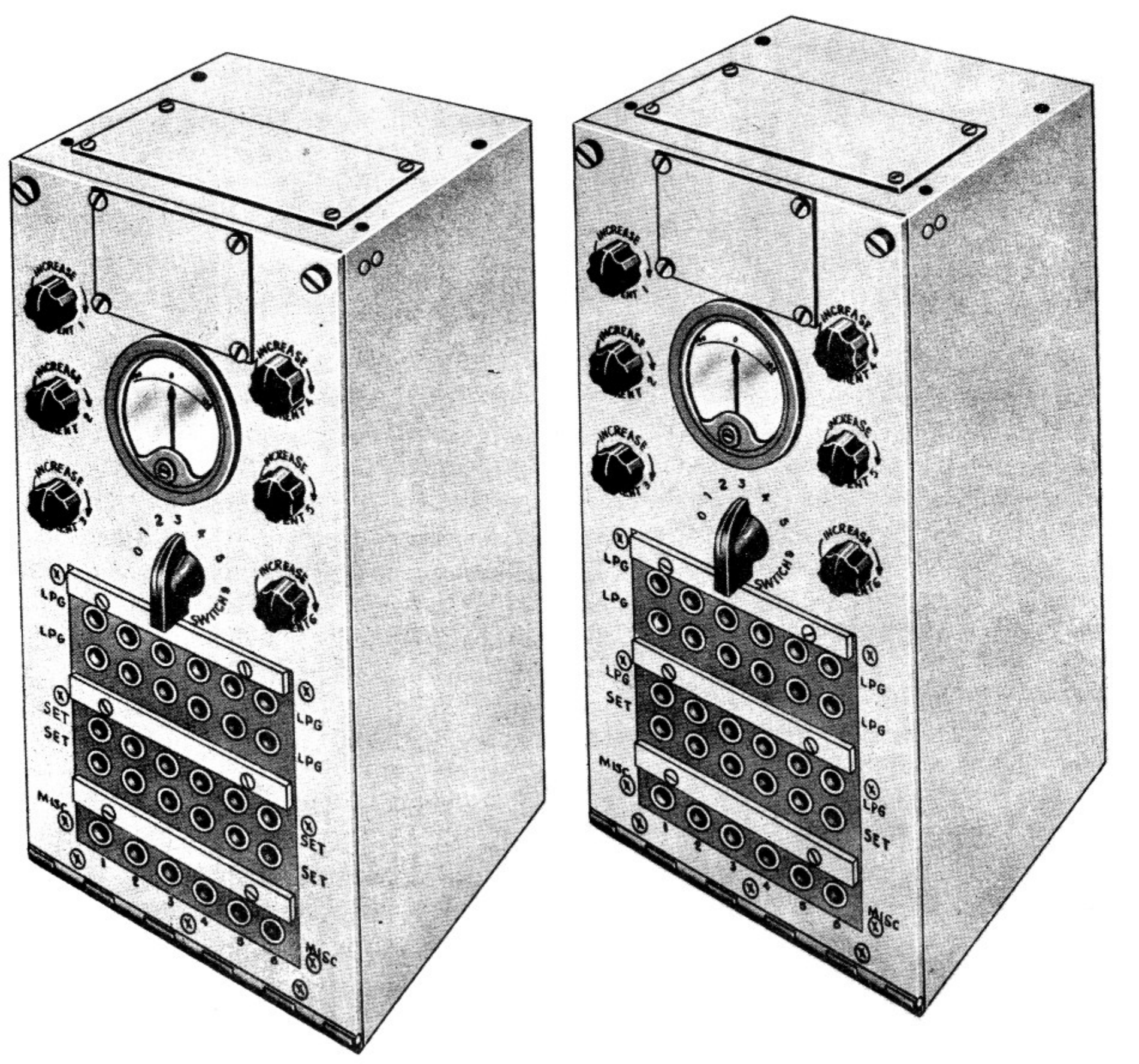
INCREASE
SWITCH
0 1 2 3 X G
LPG
SET
MISC
1 2 3 4 5 6

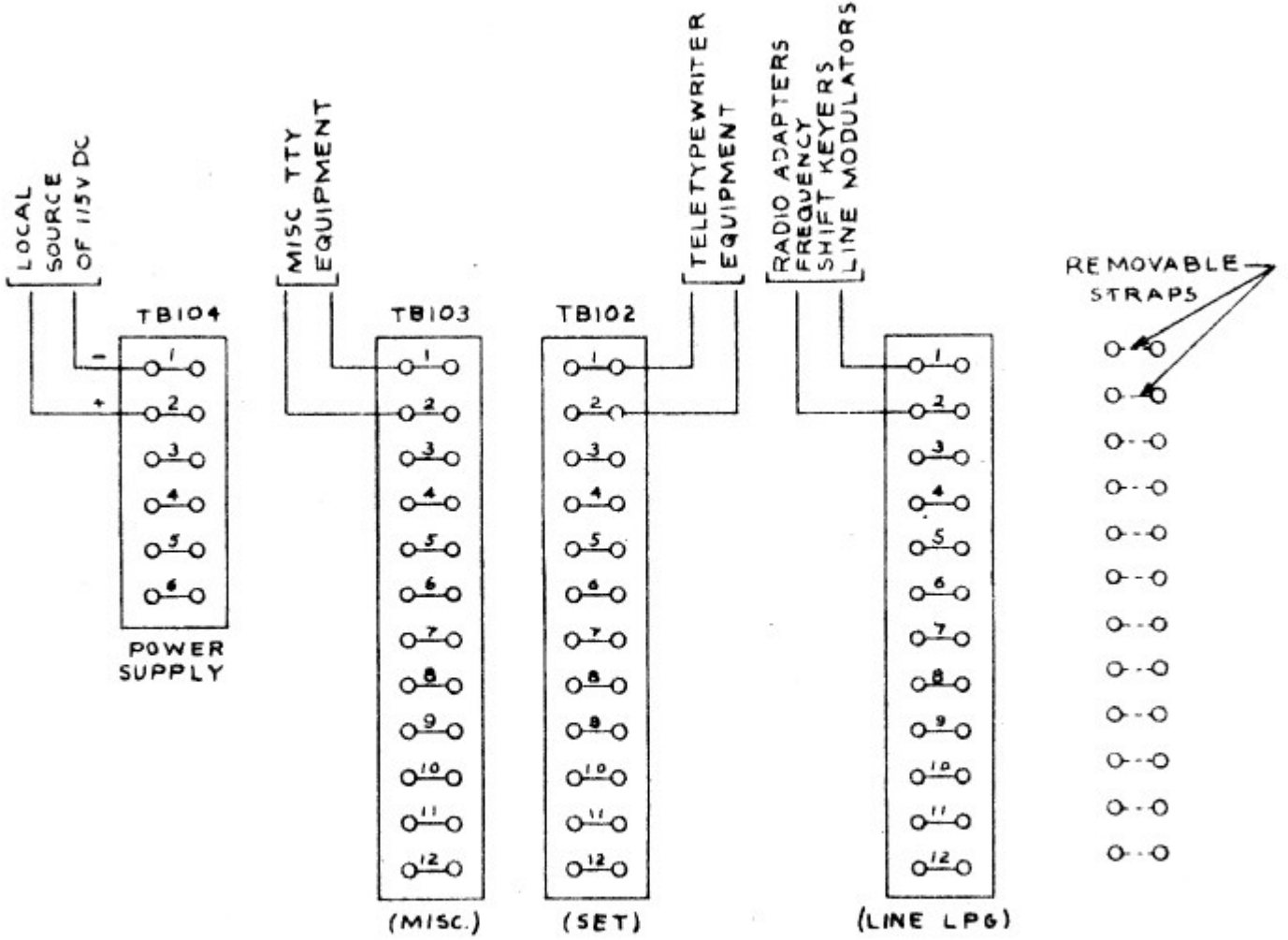

Figure 2-3. Communication Patching Panel, SB-1203A/UG, Interconnection Diagram

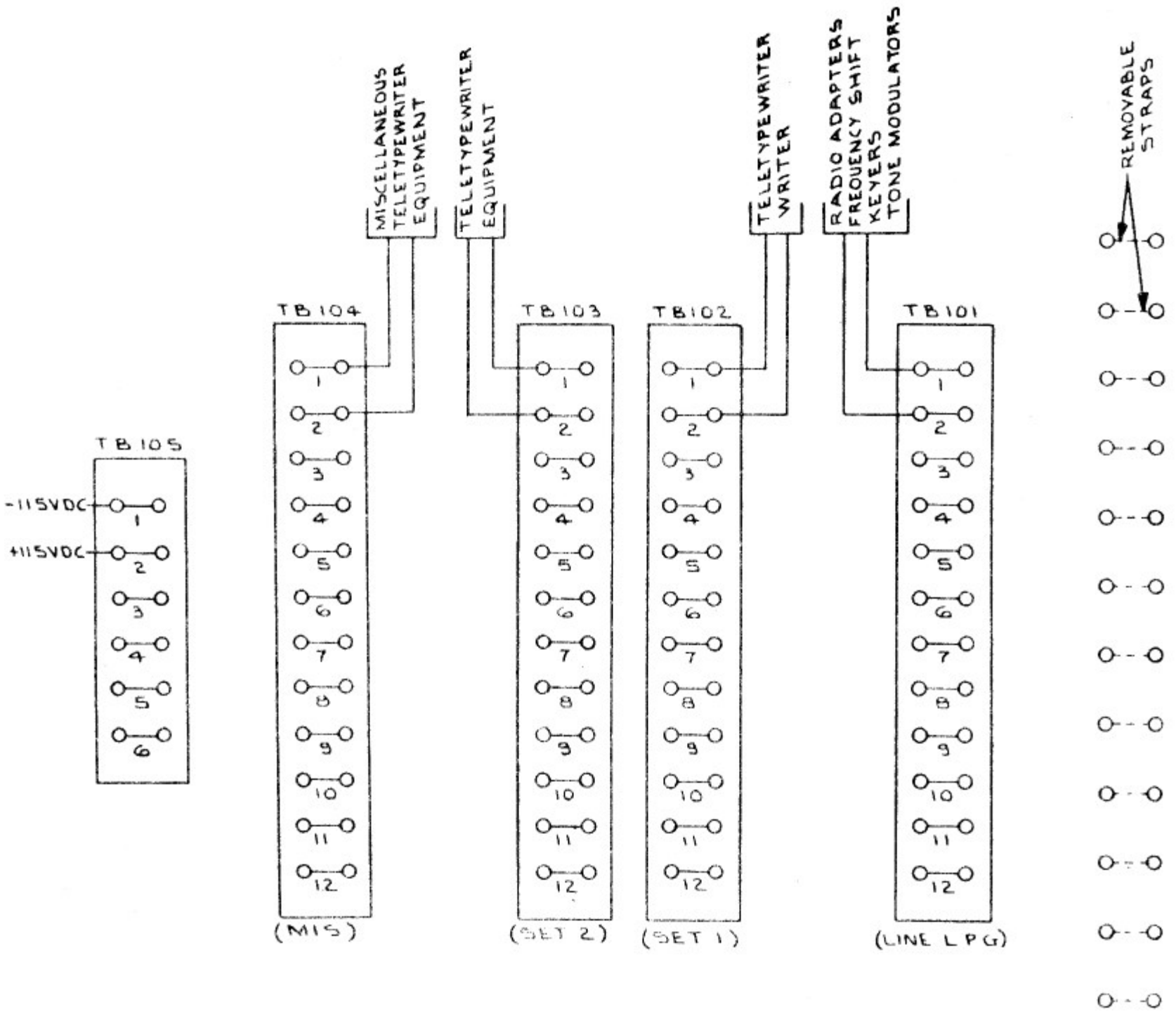

Figure 2-4. Communication Patching Panel, SB-1210A/UGQ, Interconnection Diagram

TABLE 2-1. COMMUNICATION PATCHING PANELS SB-1203A/UG and SB-1210A/UGQ LOOPING CIRCUIT TERMINAL BOARD CONNECTIONS

CONNECTIONS		CHANNELS					
		1	2	3	4	5	6
JACKS	TERMINAL BOARD	Term.	Term.	Term.	Term.	Term.	Term.
LOOPING SET - 1	TB - 101 (LINE)	1-2	3-4	5-6	7-8	9-10	11-12
	TB - 102 (SET)	1-2	3-4	5-6	7-8	9-10	11-12
SET - 2*	TB - 103 (SET)	1-2	3-4	5-6	7-8	9-10	11-12
MISCELLANEOUS	TB - 103 (MISC) SB-1203A/UG	1-2	3-4	5-6	7-8	9-10	11-12
	TB - 104 SB-1210A/UGQ	1-2	3-4	5-6	7-8	9-10	11-12
POWER SUPPLY	TB - 104 (BAT) SB-1203A/UG	1-2	1-2	1-2	1-2	1-2	1-2
	TB - 105 SB-1210A/UGQ	1-2	1-2	1-2	1-2	1-2	1-2

* Model SB-1210A/UGQ only.

OPERATOR'S SECTION

3-1. OVER-ALL FUNCTIONAL OPERATION

Each panel contains six channels. As shown in Table 3-1, there is a slight variation between models in the quantity of jacks assigned for each channel. These jacks are divided into three groups, set jacks (SET), looping jacks (LPG), and miscellaneous jacks (MISC). Permanent and patching connections provide many circuit possibilities. The panel also controls the line current in these circuits. Components which are common in both panels are: a line current meter with local selector switch, and a rheostat for adjusting the line current. Also common to each channel is a terminal block located within the panel cabinet.

TABLE 3-1.
LIMITATION AND CAPABILITY

Equip. Design	No. of Chan.	Set Jacks*	Loop Jacks*	Misc. Jacks*
SB-1203A/UG**	6	1	3	1
SB-1210A/UGQ***	6	2	2	1

*Number per channel.
**Designed for side-by-side mounting when more than six channels are required.
***Modification of SB-1203A/UG for secure teletypewriter channels.

3-2. OPERATING PROCEDURES

a. DESCRIPTION OF CONTROLS. - All controls are identified by the front panel markings for ease of identification, and are arranged for ease of operation. Figures 1-1 and 2-2 illustrate the meter, control knobs, switches, and the multiple rows of jacks.

(1) Six LINE CURRENT rheostats are located on the upper left and right sides of the front panel. Each control allows individual channel current to be adjusted. The current is usually set for 60 milliamperes.

(2) The METER SWITCH is located directly below the CURRENT METER in the center of the front panel. Its purpose is to place the CURRENT METER into any of the six channels. The METER SWITCH is a two-pole rotary type, seven-position control. Positions are marked from 0 to 6. The METER is not connected in any circuit in the 0 position.

(3) CURRENT METER. - The CURRENT METER is a d.c. ammeter which indicates the line current in each channel. When the METER SWITCH is turned to any of the six channels, line current in the selected channel will be indicated on the CURRENT METER scale. Calibration of the scale is 100-0-100 ma.

(4) The lower portion of the front panel is composed of multiple rows of JACKS for patching operations. The JACKS identified as LPG and MISC are identical and are the standard type phone jacks. The jacks labelled SET incorporate a double-throw-double-pole switch. By inserting a DUMMY PLUG into the SET jack, the teletypewriter originally in this channel is disconnected. If a teletypewriter is not wired into the same channel as the converter to be used, a patch-cord is inserted into the proper teletypewriter SET jack and the other end in either one of the looping (LPG) jacks in the converter channel.

b. SEQUENCE OF OPERATION. -

(1) Turn all line current rheostats counterclockwise to allow passage of minimum current.

(2) Turn on local line current supply at distribution panel. There are no ON-OFF switches in these panels; once panels are connected to local line current, they are operative.

(3) If the desired teletypewriter equipment is wired in the same looping channel as the radio adapter to be used, no patchcords are required.

(4) If the radio adapter supplies own line current, relocate the removable straps located inside the panel cabinet, as shown in figure 3-1.

(5) Turn meter selector switch to desired channel and adjust corresponding line current rheostat to 60 ma.

(6) If the desired teletypewriter is not wired in the same looping channel as the radio adapter to be used, insert one end of a moulded patchcord ([illegible]) in the proper teletypewriter jack and the other end in either one of the two looping jacks in the desired channel. The teletypewriter originally in this channel may be disconnected by inserting a dummy plug ([illegible]) in the set jack, or it may be patched to the looping jacks of another channel in the same manner as described above.

WARNING

~~When patchcords are plugged in, 110 volts d.c. may appear between a nut and surrounding panel. To prevent inadvertent contact, synthetic rubber sleeves should be on plugs.~~

If a patchcord is plugged first into a looping jack, it will interrupt the circuit and may place 110 volts d.c. on the plug at the free end. Always plug into the SET jack before plugging into the LPG jack.

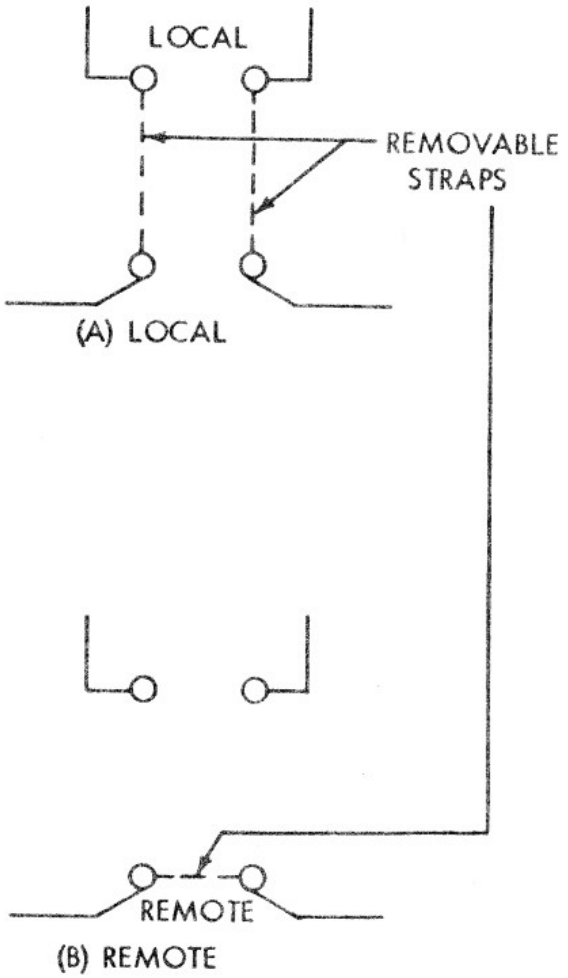

Figure 3-1. Method of Connecting Removable Straps for REMOTE or LOCAL Current

PRINCIPLES OF OPERATION

4-1. OVER-ALL FUNCTIONAL DESCRIPTION

Each panel contains facilities for six identical channels. The diagram shown in figure 4-1 is a simplified schematic drawing for one typical channel or circuit. For simplicity of explanation and brevity, no attempt has been made to show simplified schematics for models covered in this manual. However, the diagram shown can apply to all models, since all models are functionally alike. The slight circuit variations which exist between models are easily detected by comparing the over-all schematic diagrams shown in figures 4-1 and 4-2.

4-2. CIRCUIT ANALYSIS

The following circuit is for one typical channel. The remaining five channels are exactly the same with the exception of component symbol numbers. A radio adapter is connected to terminals 1 and 2 of terminal board TB-101 (LINE). When line current is not supplied by the loop, provisions are made to connect a local source of 115 volts d.c. across terminals 1 and 2 of TB-104. These connections are paralleled across the corresponding terminals of each loop and local current can be connected in or out of each loop by means of removable straps.

It should be noted that this local current is required for loops in which line current is not supplied. The 600-ohm resistor R-119 limits the current in any loop to a maximum of approximately ~~100~~ 190 milliamperes.

The meter circuit consists of the milliammeter M-101, and ~~900~~ 930-ohm resistor R-101, and a 10-ohm meter shunt resistor R-102. The meter selector switch S-101 is used to place the meter into any of the six channels or in the "0" position.

Line current in each channel is controlled by a 1500-ohm rheostat R-108. One terminal of the rheostat is connected to the first jack J-101 of a pair of looping jacks. The second looping jack J-107 is joined to a set jack J-113. The set jack is connected to the teletypewriter equipment at terminals 1 and 2 of TB-102. This completes the circuit between the radio adapter and the teletypewriter equipment.

By inserting a plug into the set jack J-119 the sleeve and tip of the plug are connected to terminals 1 and 2 of TB-102 respectively. Refer to figure 4-2. This action connects the plug to the teletypewriter equipment wired at terminals 1 and 2. In addition, the remainder of the channel circuit is simultaneously disconnected from terminals 1 and 2 and closed.

Thus, if it is desired to transfer a teletypewriter from one channel to any other channel, the teletypewriter is patched from its corresponding set jack to one of the two looping jacks in the channel to be used. If it is preferred that the teletypewriter equipment wired in this channel not operate, a dummy plug is inserted into the set jack J-119.

An additional teletypewriter may be connected to the miscellaneous jack and can be patched into any of the channels.

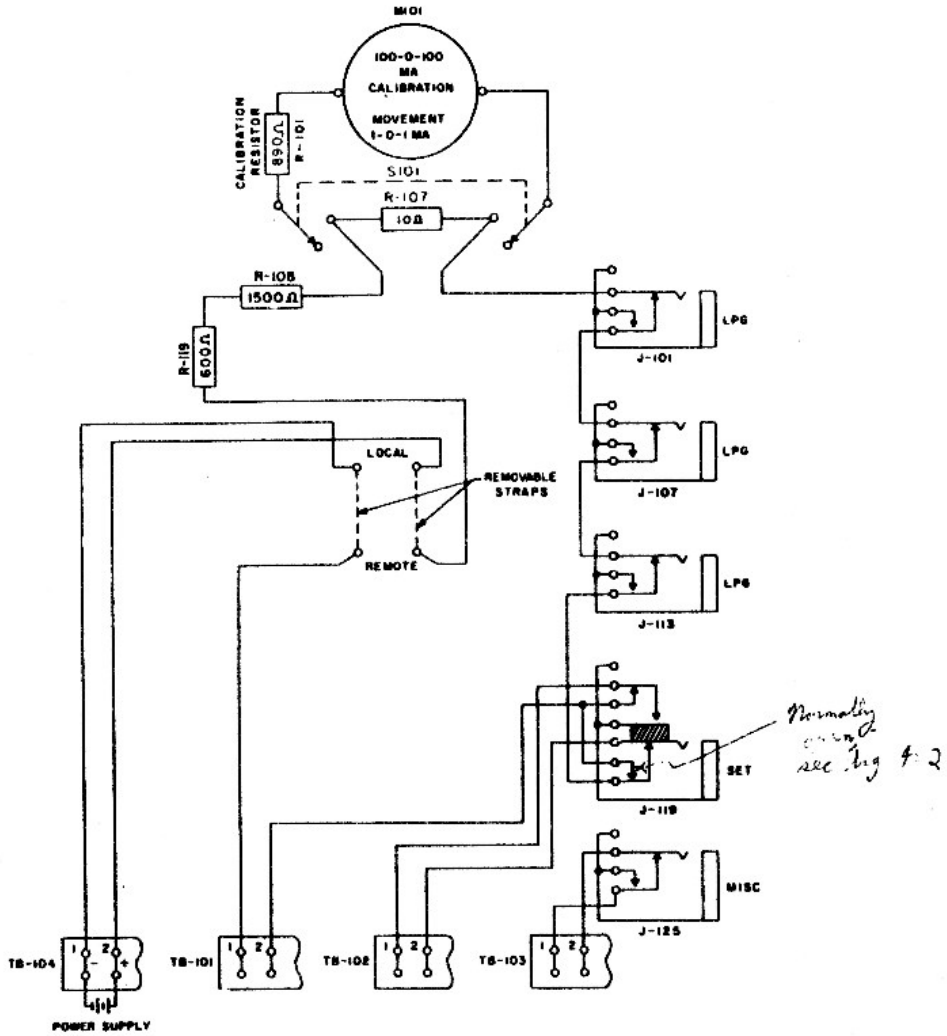

Figure 4-1. Communication Patching Panel SB-1203A/UG, Single Channel Simplified Schematic Diagram

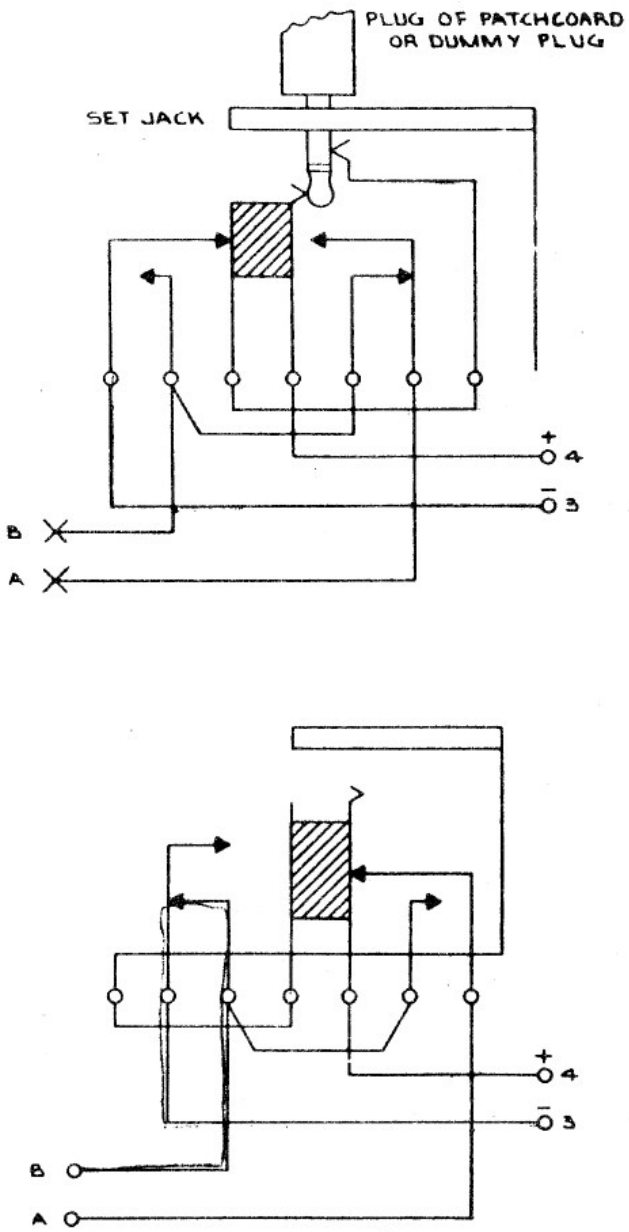

Figure 4-2. Set Jack Detail

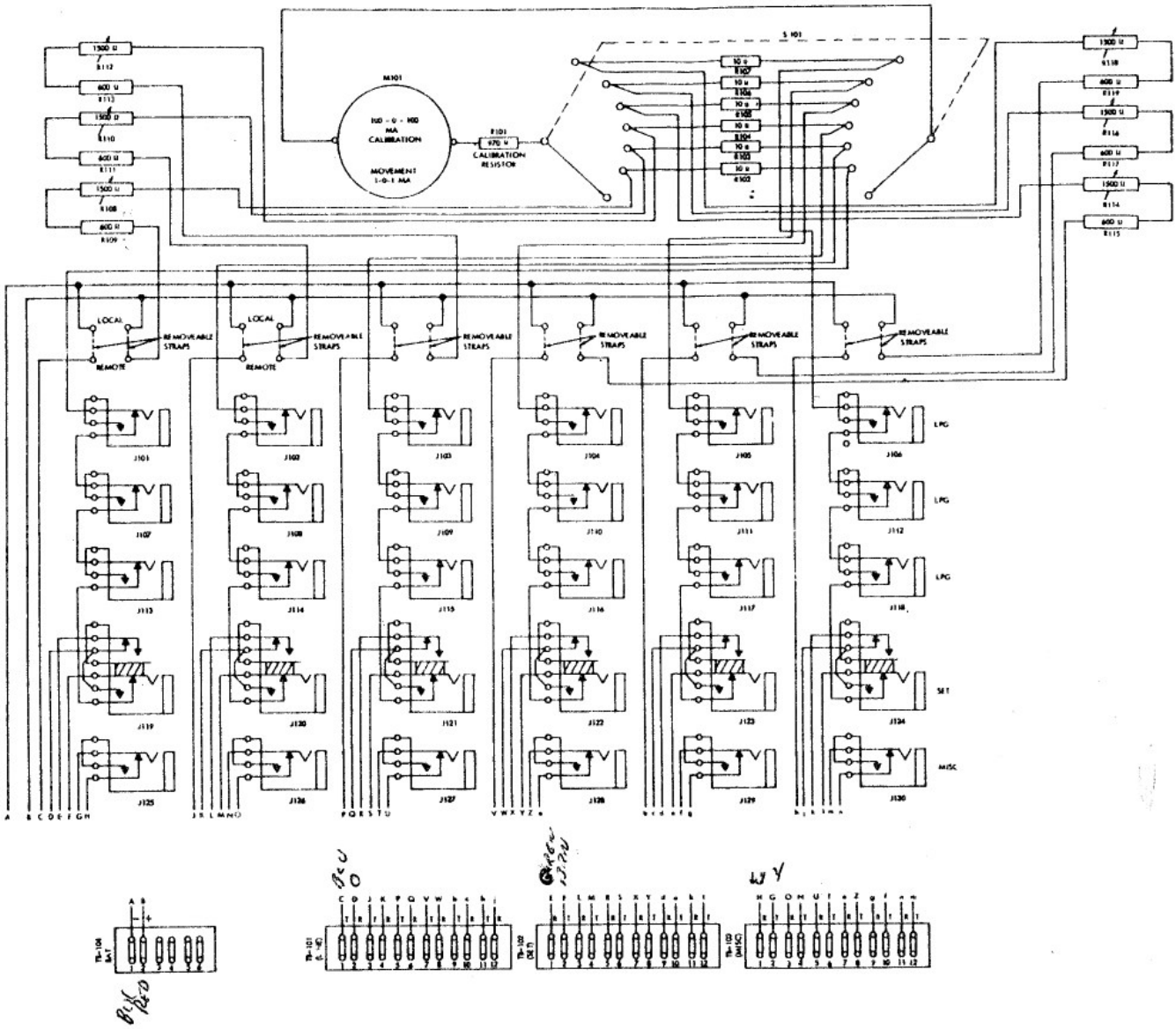

Figure 5-1. Communication Patching Panel SB-1203A/UG, Schematic Diagram

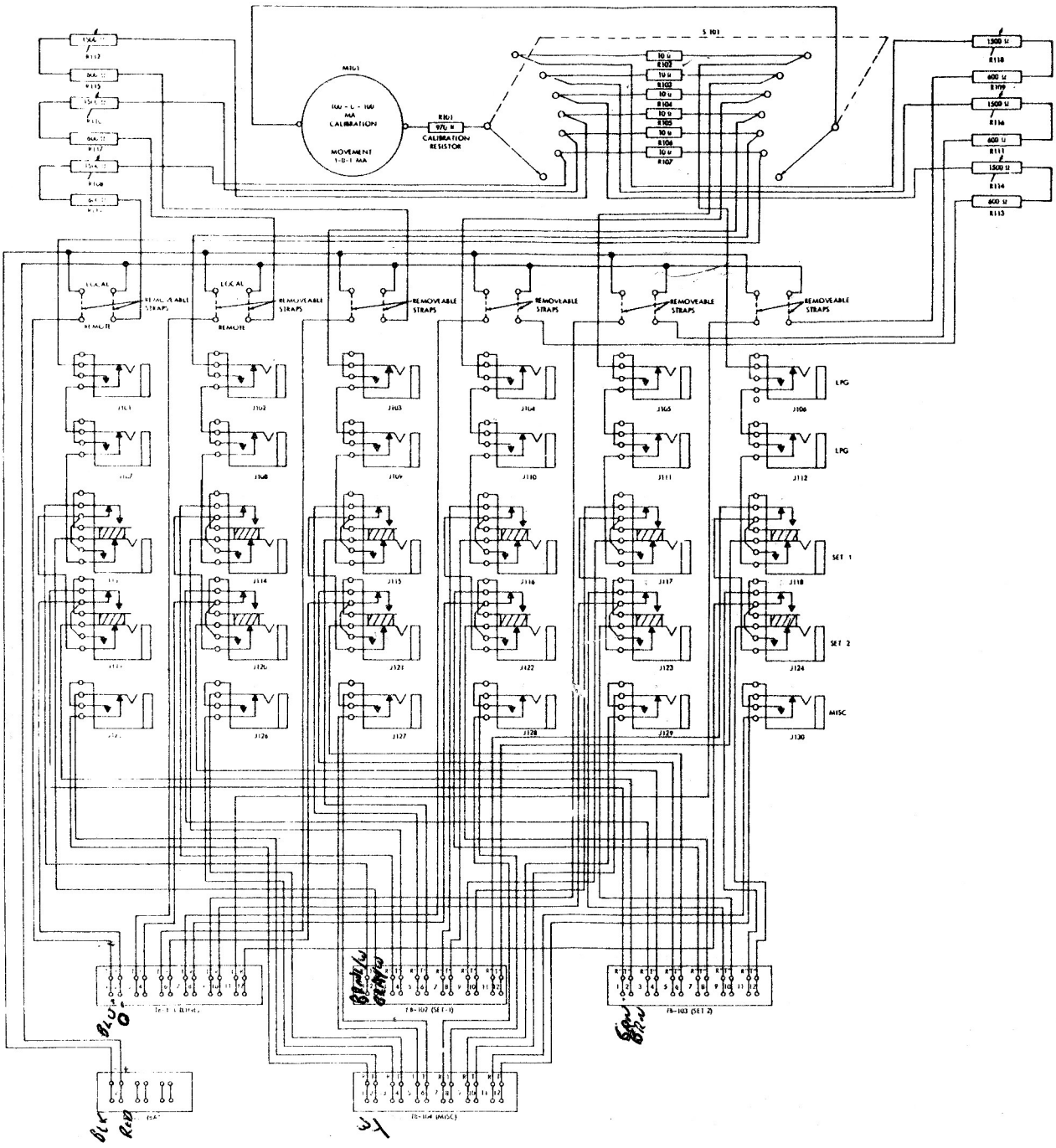

Figure 5-2. Communication Patching Panel SB-1210A/UGQ, Schematic Diagram