

“PULSE* 80/120” – SG-1/1A
ELECTRONIC PRIVATE AUTOMATIC BRANCH EXCHANGE
INTEGRATED POWER SHELF
QSP7L
DESCRIPTION, OPERATION, INSTALLATION

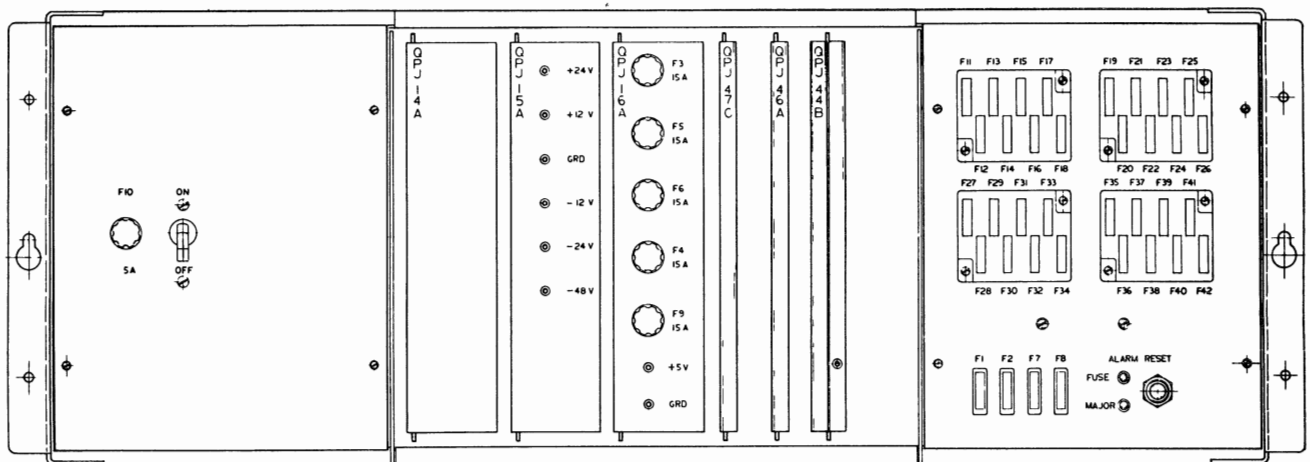


Fig. 1 – QSP7L Integrated Power Shelf

1. PURPOSE

1.01 The QSP7L integrated power shelf replaces power shelves 1 and 2 in both the Pulse 80 and 120-type private branch exchange (PBX). This new shelf is fully compatible with existing systems.

2. DESCRIPTION

2.01 The QSP7L power shelf consists of a shelf and the following six packs: the QPJ44, QPJ46, and QPJ47 which are standard packs in the Pulse PBX; and the QPJ14, QPJ15, and QPJ16 packs which are new.

- the QPJ14 provides the regulating, drive and switching signals which applied to the QPJ15 and QPJ16 form a dc-to-dc switched mode converter

- The QPJ15 provides 12-, 24-, 48-V power for the Pulse system.
- The QPJ16 provides 5-V power for the entire Pulse system.

2.02 The power supply is a pulse-width-modulated, switched-mode power converter operating from the rectified main voltage at a switching frequency of approximately 20 kHz.

2.03 The shelf itself is operated from the commercial power source which may be optionally 115 V 60 Hz or 230 V 50 Hz (refer to Fig. 2).

2.04 Refer to 553-5021-516 for QSP7L fault-clearing procedures.

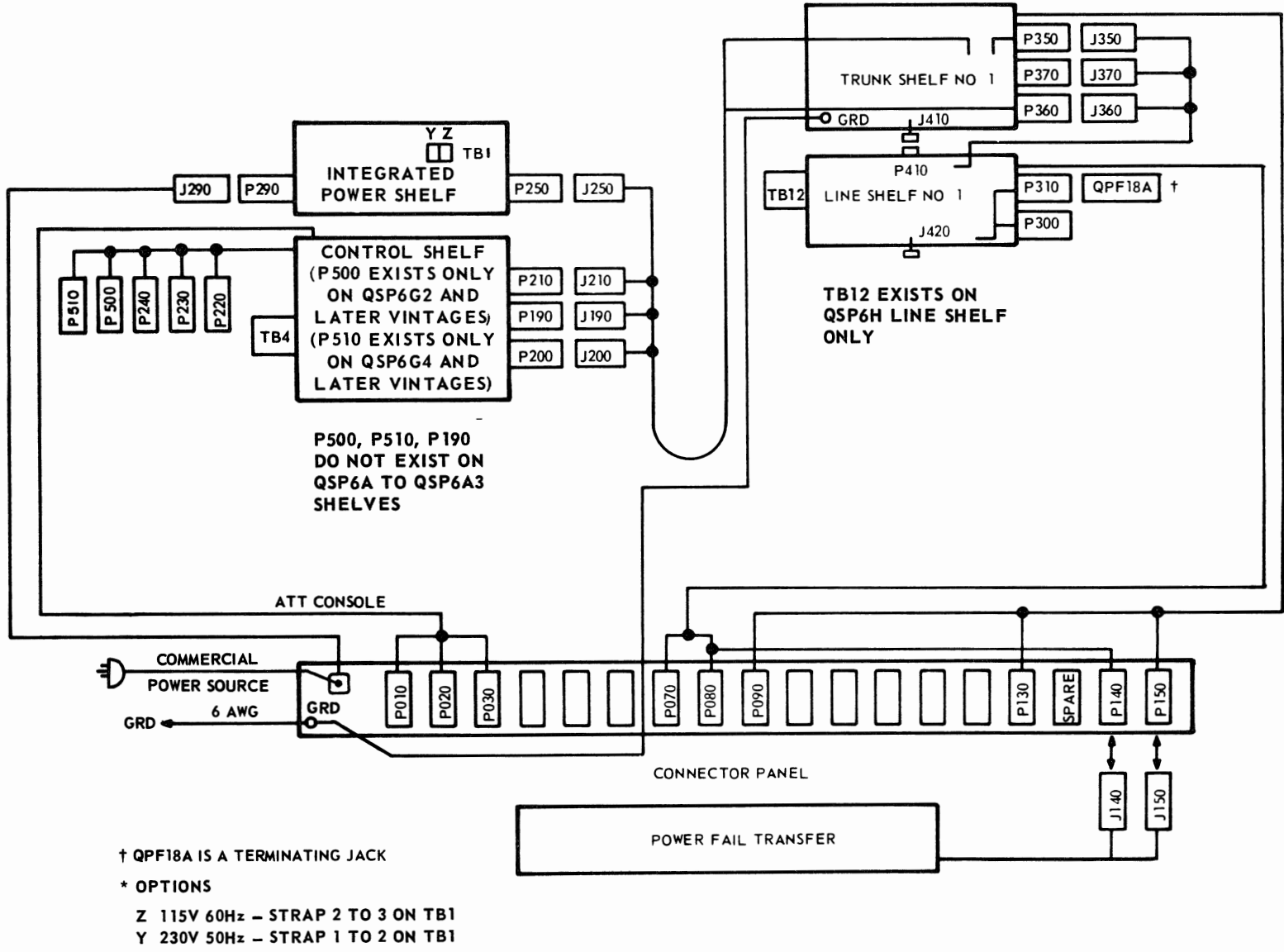


Fig. 2 — Internal Cabling of Basic Unit

**CHART 1
REMOVAL OF POWER SHELF NO. 1**

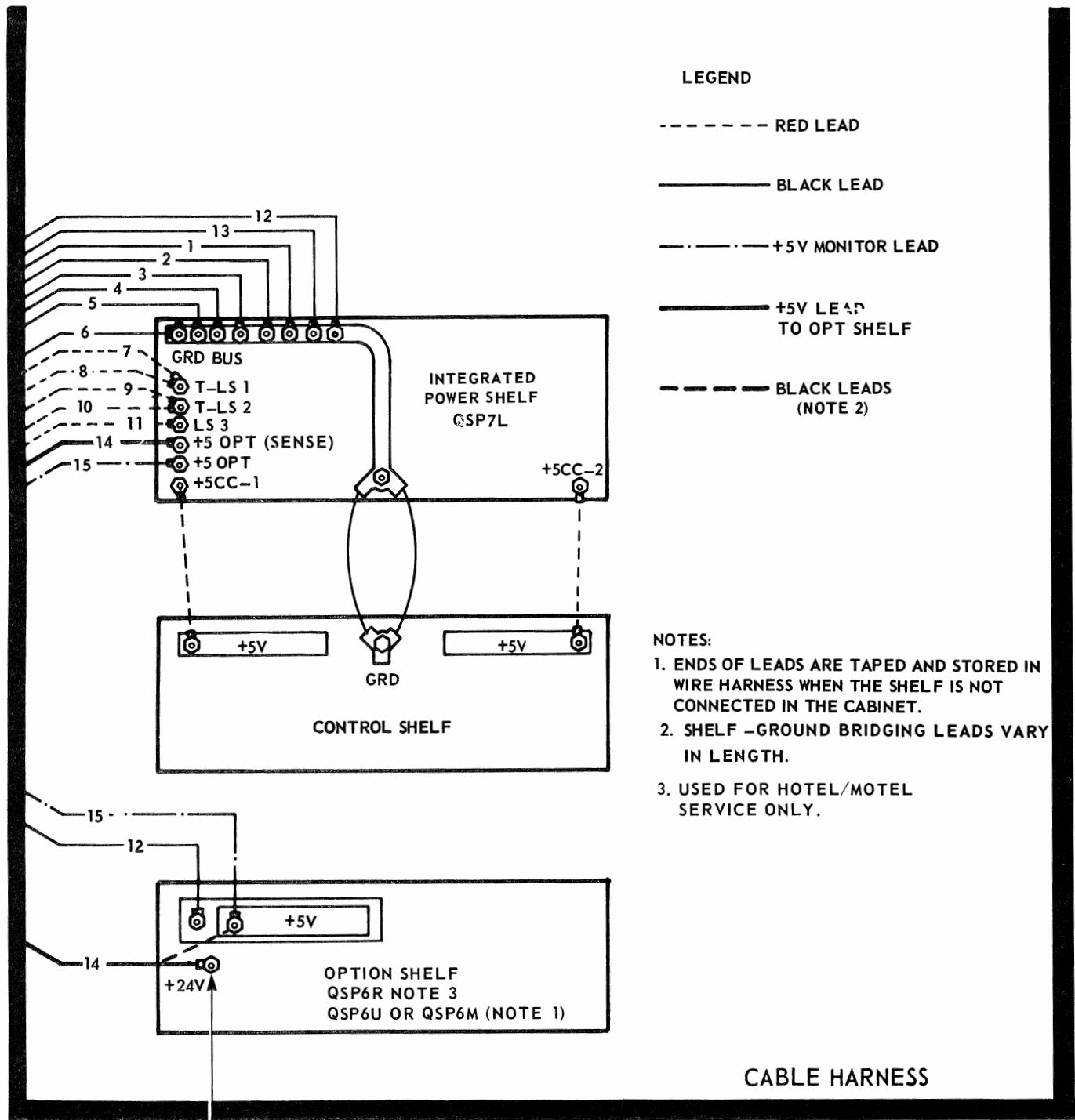
Power shelf no. 1 weighs approximately 60 pounds (27 kg).

STEP	PROCEDURE
1	Extend slide no. 1 to the fully open position.
2	Flick the power switch on power shelf no. 2 to the OFF position. This releases the PFT relays to provide emergency service only.
3	Loosen all screws on TB2 on QSP7E(2) or TB1 on QSP7B(2) at the rear of the power shelf no. 2. <i>Do not remove the screws.</i> Remove the spade connectors.
4	Remove P280 from J280 (twist-lock connection) at the rear end of power shelf no. 2.
5	Remove power shelf no. 1.

**CHART 2
REMOVAL OF POWER SHELF NO. 2**

Power shelf no. 2 weighs approximately 75 pounds (34 kg).

STEP	PROCEDURE
1	Remove P290 from J290 (twist-lock connection) at the rear of power shelf no. 2.
2	Remove J250 from P250 at the front end of power shelf no. 2.
3	Remove all the red +5 V leads and black ground leads to the control, option, line, and trunk shelves from power shelf no. 2.
4	Remove the +24 V lead and +5 V monitor lead (Fig. 3) to option shelf if these leads are connected.
5	Remove power shelf no. 2.



REMOVE CONNECTION FROM THIS TERMINAL AND CONNECT TO +5V TERMINAL ON BUS BAR AS SHOWN FOR QSP6R, QSP6U, OR QSP6M WHEN IN USE.

Fig. 3 — Cable Harness

**CHART 3
INSTALLATION OF INTEGRATED POWER SHELF**

Integrated power shelf weights approximately 60 pounds (27 kg).

STEP	PROCEDURE
1	Extend slide no. 1 to the fully opened position.
2	Install the integrated power shelf where power shelf no. 2 had previously been installed.
3	Connect and tighten the +5 V and ground leads on the bus bars at the rear of power shelf.
4	Connect lead (no. 14 or) to the terminal designated +5 opt and connect option sense lead from option shelf refer Fig. 2, as they had previously been connected.
5	Connect J250 to P250 at the front end of power shelf.
6	Connect P290 to J290 twist lock connection at the rear of power shelf.
7	Check that all fuses are present and are not faulty.
8	Flick the power switch to the ON position. Press RESET button to restore normal service.
	<i>Note:</i> If a QSP6R, QSP6U, or QSP6M option shelf is used, orange lead no. 14 must be removed from +24 V terminal on the option shelf and be placed on the +5 V terminal on the bus bar on the option shelf. The +5 V sense lead remains on the +5 V terminal on the bus bar. Remove the QPJ43 from the option shelf because +5 V is now supplied directly from the QSP7L integrated power shelf (refer to Fig. 3).

**CHART 4
REMOVAL OF INTEGRATED POWER SHELF**

STEP	PROCEDURE
1	Extend slide no. 1 to fully opened position.
2	Flick the power switch to OFF. This releases the PFT relays to provide emergency service only.
3	Remove P290 from J290 twist lock at rear end of power shelf.
4	Remove J250 from P250 at the front end of the power shelf.
5	Remove all the red +5 V leads and black ground leads to the control, option, line and trunk shelves.
6	Remove the orange lead +5 V and +5 V monitor lead to option shelf, if these leads are connected.
7	Remove the shelf.

**TABLE A
POWER SUPPLY CHARACTERISTICS**

COMMERCIAL AC INPUT

Z Option	115 V, single phase 50/60 Hz,
Y Option	805 W
INPUT VOLTAGE TOLERANCE (see Note 1)	230 V, single phase, 50/60 Hz, 805 W

Normal	± 10%
Short Periods (less than one hour)	+20% prolonged operation outside
Sustained Periods (several hours)	-25% normal limits reduces power supply life

FREQUENCY TOLERANCE

Normal	± 5%
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SAFETY APPROVAL

CSA Approved

SYSTEM POWER SUPPLY VOLTAGES

Voltage (V)	Current (A)	System Use
-48	2.0	Talking battery — trunks and recorded telephone dictation trunk (see Note 2)
-24	3.5	Talking battery — station lines (see Note 2)
+24	4.0	Talking battery — station lines and trunk relays (see Note 2)
-12	0.5	Shift register memory
+12	3.5	Console Lamps
+5	42	Logic
-48	1.5	External Equipment

Notes:

- Power supply maintains connections through momentary fluctuations of input voltage up to 160 ms in duration.
- 48 V talking battery for station lines —
Feeding Bridge: 800 Ω
Voltage: nominal 48 V (+24 V and -24 V)
Noise: 30 dB_{rnc} at power plant.