

4.4 MAIN SUPPLIES REMOTE CONTROL

Remote programming of specific supplies in the Power Supply is accomplished by using the remote input terminal block on the back of the Power Supply and the local /remote switches accessible through the rear access panel of the Power Supply. These supplies may be either voltage programmed or resistance programmed. The voltage signal can be obtained from any source (i.e., a computer with a digital to analog converter, or a simple analog supply). The supplies which can be programmed, such as Energy, Focus, Grid, ECC and Source, Blanking, Anode, X - Y Deflection etc., depend on the particular gun model. Separate, optional Power Supply units, for example a Rastering unit, may have additional supplies that can be similarly programmed.

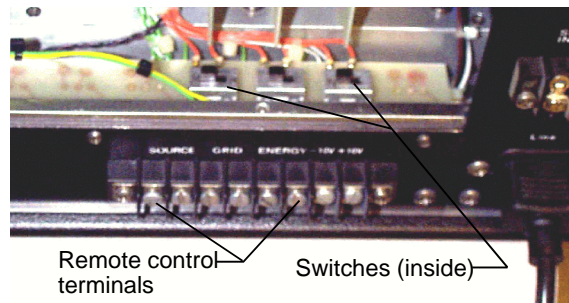


Figure 4.4.1 Typical power supply with rear access panel removed, showing remote switches

OPERATION OF SYSTEM IN THE REMOTE MODE

1. Set-up:
 - a. Ensure that the Power Supply is OFF.
 - b. Turn all front panel potentiometers fully counterclockwise, to avoid problems due to unexpected settings if the unit is switched back to local mode.
 - c. Remove the rear access panel of the Power Supply.
 - d. Change the position of the switches from L (Local=left) to R (Remote=right) as viewed from the rear of the Power Supply. **Set switch for each of the supplies to be remotely controlled.** (See Figure 4.4.2 below.) Separate, optional Power Supply units may have additional remote terminals and switches to be changed.

NOTE: Once in the Remote mode (switch in right position), the power supply is not controllable by the front panel potentiometers.

2. Voltage program or resistance program the Power Supply as follows:
 - a. **To voltage program** a supply in the remote mode:
 1. Provide a voltage source that produces a **0 to +10 V** signal to voltage program applicable supplies such as ECC/Source, Grid, Energy etc., according to Table 4.4.1 below.
 2. **For X and Y Deflection (or alignment) only:** Provide a voltage source that produces a **-10 V to +10 V** to voltage program X-Def and Y-Def.
 3. Attach the voltage source signal to the program terminal labeled **PROG** of the particular supply.
 4. Reference the system to ground on the terminal labeled **COM** of the supply.
 5. The voltage source signal maps linearly onto supply-dependant ranges shown in Table 4.4.1.

OR

- b. **To resistance program** a supply in the remote mode: Connect a **10 k Ω** potentiometer (or **100 k Ω** for deflection) to the appropriate terminals as indicated in Table 4.4.2.

4.4 MAIN SUPPLIES REMOTE CONTROL cont.

SAMPLE FIGURES AND TABLES FROM EFG-7 ELECTRON GUN

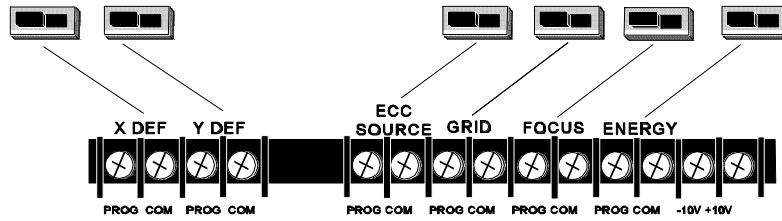


Figure 4.4.2: EGPS -7 Interior Local/Remote switches, shown in local mode (left), with their respective exterior terminals (including optional deflection)

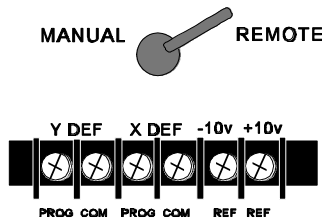


Figure 4.4.3: RGDU (optional) Manual(Local) / Remote switch and terminals

Table 4.4.1a: STANDARD ENERGY EFG-7 / EGPS-7
Programming Signal to Power Supply Output Equivalency Table

REMOTE CONTROL TERMINAL		VOLTAGE PROGRAMING		RESISTANCE PROGRAMING	
		0 V TO +10 V SIGNAL SUPPLIES:	-10 V TO +10 V SIGNAL SUPPLIES:	10 kΩ RESISTOR SUPPLIES:	100 kΩ RESISTOR SUPPLIES:
X - DEF		--	-150 V to +150 V	--	-150 V to +150 V
Y - DEF		--	-150 V to +150 V	--	-150 V to +150 V
SAME SWITCH	ECC	0 μA to 500 μA	--	0 μA to 500 μA	--
	SOURCE	0 V to 1.5 V	--	0 V to 1.5 V	--
GRID		0 V to 200 V	--	0 V to 200 V	--
FOCUS		0 V to 1500 V	--	0 V to 1500 V	--
ENERGY		0 eV to 1500 eV	--	0 eV to 1500 eV	--

Table for High Energy Option on next page

4.4 MAIN SUPPLIES REMOTE CONTROL cont.

SAMPLE FIGURES AND TABLES FROM EFG-7 ELECTRON GUN

Table 4.4.1b: HIGH ENERGY OPTION EFG-7 / EGPS-7
Programming Signal to Power Supply Output Equivalency Table

REMOTE CONTROL TERMINAL		VOLTAGE PROGRAMING		RESISTANCE PROGRAMING	
		0 V TO +10 V SIGNAL SUPPLIES:	-10 V TO +10 V SIGNAL SUPPLIES:	10 kΩ RESISTOR SUPPLIES:	100 kΩ RESISTOR SUPPLIES:
X - DEF		--	-150 V to +150 V	--	-150 V to +150 V
Y - DEF		--	-150 V to +150 V	--	-150 V to +150 V
SAME SWITCH	ECC	0 μA to 500 μA	--	0 μA to 500 μA	--
	SOURCE	0 V to 1.5 V	--	0 V to 1.5 V	--
GRID		0 V to 500 V	--	0 V to 500 V	--
FOCUS		0 V to 5000 V	--	0 V to 5000 V	--
ENERGY		0 eV to 5000 eV	--	0 eV to 5000 eV	--

Table 4.4.2: EFG-7/EGPS-7 Resistance Programming Terminal Connections

REMOTE CONTROL TERMINAL	POTENTIOMETER REQUIRED	CLOCKWISE POTENTIOMETER TERMINAL	COUNTERCLOCKWISE POTENTIOMETER TERMINAL	WIPER POTENTIOMETER TERMINAL
		ATTACH TO THE FOLLOWING POWER SUPPLY TERMINALS		
X-DEF	100 kΩ	+10 V Terminal	- 10 V Terminal	PROG Terminal
Y-DEF	100 kΩ	+10 V Terminal	- 10 V Terminal	PROG Terminal
ECC SOURCE	10 kΩ	+10 V Terminal	COM Terminal	PROG Terminal
GRID	10 kΩ	+10 V Terminal	COM Terminal	PROG Terminal
FOCUS	10 kΩ	+10 V Terminal	COM Terminal	PROG Terminal
ENERGY	10 kΩ	+10 V Terminal	COM Terminal	PROG Terminal

This completes the Remote Control Instructions.