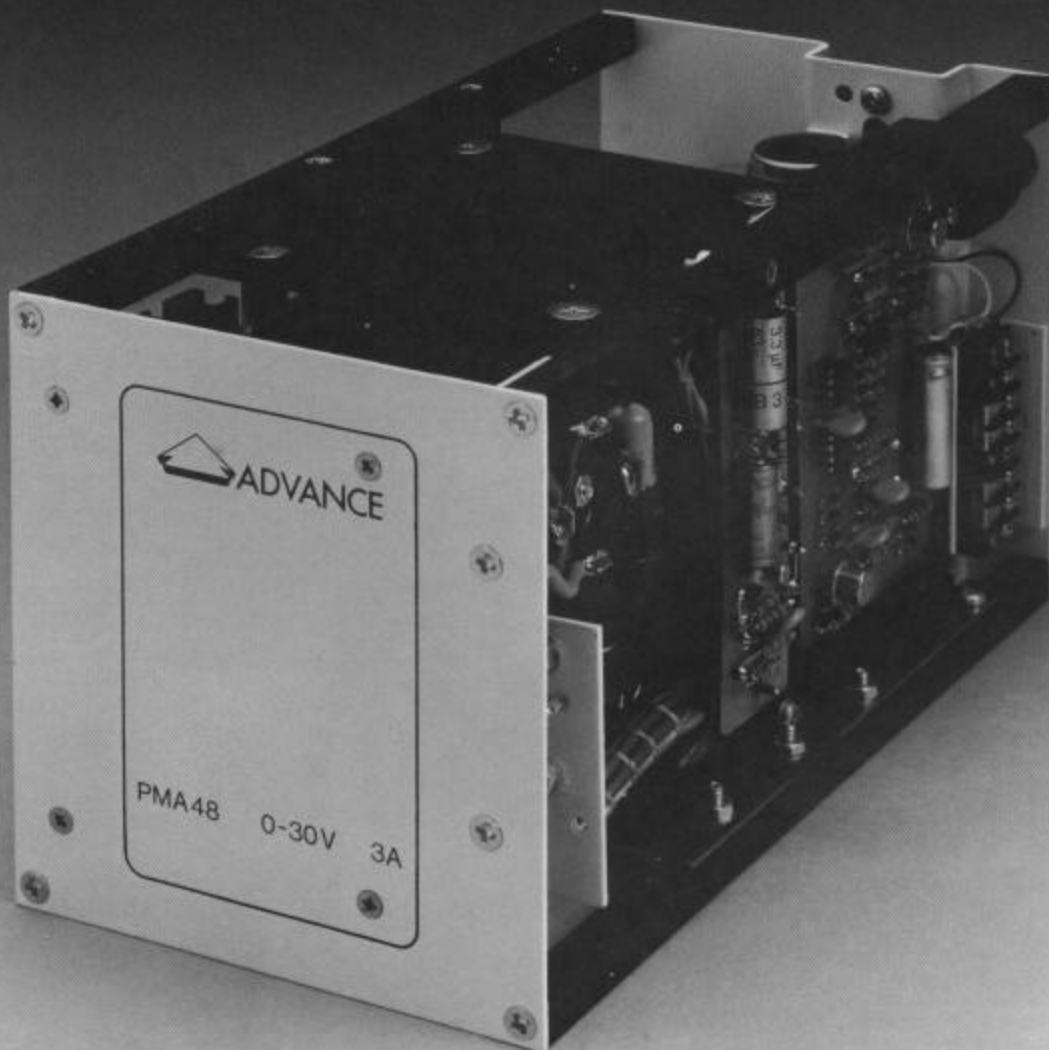


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PMA SERIES: LINEAR POWER SUPPLIES



Specification

Output Voltages and Currents

Output Current	Output Voltage		
	0-15V	15-30V	30-50V
1A	PMA44	PMA45	PMA46
3A	PMA47	PMA48	PMA49
5A	PMA50	PMA51	PMA52
10A	PMA53	PMA54	PMA55

Output voltage is pre-set in 1v steps, and adjustable $\pm 1\%$ by front panel potentiometer.

Input Voltage

100, 105, 110, 115, 120, 125, 200, 220, 230, 240, 250V $\pm 10\%$ 48-450 Hz.

Line Regulation

Less than ($\pm 0.001\% + 30\mu\text{V}$) for $\pm 10\%$ AC line variation at any specified tap.

Load Regulation

Less than ($0.001\% + 100\mu\text{V}$) for a no load to full load swing.

Ripple

Less than 400 μV pk-pk (typically 250 μV pk-pk).

Temperature Co-efficient

Less than ($0.01\% + 200\mu\text{V}$) per $^{\circ}\text{C}$.

Output Impedance

Less than 0.25 Ω at 100KHz.

Recovery Time

For a full load step change the output voltage will recover in approximately 50 μs to within 10mV of the regulation band.

Overload Protection

Re-entrant overload protection operates at 105% of full load.

Overvoltage Protection (Optional)

Overvoltage protection is by means of a high speed SCR crowbar with fuse. The trip voltage may be varied by potentiometer or programming resistors. This facility is an optional extra which can be built into the unit if required (Z). All units are set to $\pm 10\%$ of set voltage or 1V whichever is the greater.

Temperature Range

-10° to $+60^{\circ}\text{C}$.

Insulation

Floating output must not exceed $\pm 250\text{V}$ DC from ground. Input tested 500V DC live to ground, and live to output greater than 10M ohms.

Constant Current Operation

All units can be operated in the constant current mode at reduced ratings (Y). Further details can be found in figures 3 and 4.

Voltage/Current Programming

All units can be externally programmed, by means of resistors, from zero to maximum rated voltage. A limitation is imposed by the re-entrant or constant current protection characteristic of the unit. This mode of operation can best be illustrated by the family of curves shown in figure 1. It will be seen that as the output voltage is decreased so also is the available output current since the unit must follow its re-entrant characteristic.

Programming Resistances

Voltage mode - 1000 $\Omega/\text{V} \pm 1\%$		Constant current	
Current mode	Re-entrant	1050 Ω/A	350 Ω/A
1A	100 Ω/A	1050 Ω/A	350 Ω/A
3A	33 Ω/A	1050 Ω/A	350 Ω/A
5A	20 Ω/A	210 Ω/A	105 Ω/A
10A	10 Ω/A	105 Ω/A	105 Ω/A

All $\pm 3\%$

Current Mode

Two different modes of operation are available in the PMA44-55 range, these being re-entrant operation and constant current operation.

Programming in the re-entrant condition is achieved by connecting an external resistor (fixed or variable) across the current programming terminals.

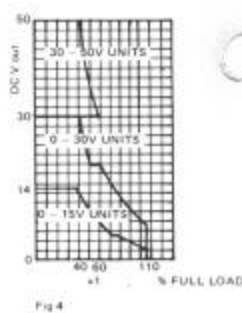
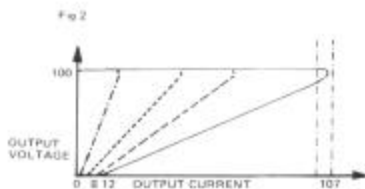
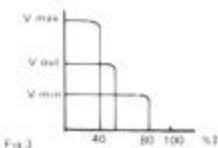
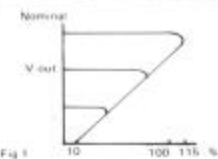
Variation of this resistance produces a change in the point at which the power unit begins to current limit (see figure 2). The option of constant current at switch-on for 200ms is still available, but may be linked out if preferred.

Constant current operation may be obtained by selecting internal links on the P.C. board. Operation in this mode is restricted by the maximum safe dissipation of the power unit and an indication of the necessary derating can be seen in figure 3. The derating is dependent on the voltage setting of the unit and a family of acceptable operating curves may be drawn as shown in figure 4. All units can be programmed while operating in this constant current mode and they may also be voltage programmed.

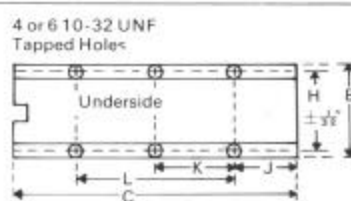
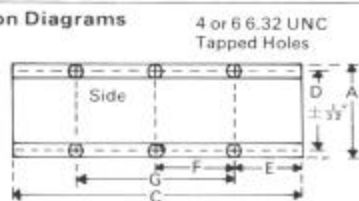
MTBF

The figures quoted below are based on continuous operation at maximum temperature, output voltage and current, and will improve appreciably if units are operated in less arduous conditions.

Unit	Estimated MTBF hrs
PMA44-47	35,000
PMA48-50	34,000
PMA51-53	29,000
PMA54-55	25,000



Dimension Diagrams



Overall Dimensions and Weights

Type	Height A		Width B		Length C		Weights	
	in.	cm	in.	cm	in.	cm	lb.	kg.
PMA44	5 1/2	13.0	3 1/2	8.3	5 1/2	13.0	4	1.8
PMA45	5 1/2	13.0	4 1/2	11.8	5 1/2	13.0	6	2.7
PMA46	5 1/2	13.0	3 1/2	8.3	9 1/2	23.5	8	3.6
PMA47	5 1/2	13.0	3 1/2	8.3	9 1/2	23.5	8	3.6
PMA48	5 1/2	13.0	4 1/2	11.8	9 1/2	23.5	11	5.0
PMA49	5 1/2	13.0	7 1/2	18.7	9 1/2	23.5	15	6.8
PMA50	5 1/2	13.0	4 1/2	11.8	9 1/2	23.5	11	5.0

Fixing Centres

Type	D		E		F		G		H		J		K		L	
	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm
PMA44	4 1/2	12.07	1	2.54	—	—	3 1/2	7.94	2 1/2	7.39	1 1/2	3.81	—	—	2 1/2	5.40
PMA45	4 1/2	12.07	1	2.54	—	—	3 1/2	7.94	4 1/2	10.85	1 1/2	3.81	—	—	2 1/2	6.40
PMA46	4 1/2	12.07	1	2.54	—	—	7 1/2	18.42	2 1/2	7.39	2	5.08	—	—	5 1/2	13.3
PMA47	4 1/2	12.07	1	2.54	—	—	7 1/2	18.42	2 1/2	7.39	2	5.08	—	—	5 1/2	13.3
PMA48	4 1/2	12.07	1	2.54	—	—	7 1/2	18.42	4 1/2	10.85	2	5.08	—	—	—	—
PMA49	4 1/2	12.07	1	2.54	—	—	7 1/2	18.42	7	17.78	2	5.08	—	—	5 1/2	13.3
PMA50	4 1/2	12.07	1	2.54	—	—	7 1/2	18.42	4 1/2	10.85	2	5.08	—	—	5 1/2	13.3
PMA51	4 1/2	12.07	1	2.54	—	—	7 1/2	18.42	7	17.78	2	5.08	—	—	5 1/2	13.3
PMA52	4 1/2	12.07	2 1/2	5.24	5 1/2	13.89	10 1/2	27.78	4 1/2	10.85	3	7.62	5 1/2	12.86	9 1/2	23.02
PMA53	4 1/2	12.07	1	2.54	—	—	7 1/2	18.42	7	17.78	2	5.08	—	—	5 1/2	13.3
PMA54	4 1/2	12.07	2 1/2	5.24	5 1/2	13.89	10 1/2	27.78	7	17.78	3	7.62	5 1/2	12.86	9 1/2	23.02
PMA55	4 1/2	12.07	2 1/2	5.24	5 1/2	13.89	10 1/2	27.78	8 1/2	22.23	3	7.62	5 1/2	12.86	9 1/2	23.02

Ordering Information

To facilitate the processing of your order please specify :-
 1) The unit type number (eg. PMA48).
 2) The required output voltage (eg. 24V PMA48/24).
 3) Any options which may be required :-
 Constant Current Operation suffix "Y" (eg. PMA 48/24/Y)
 Overvoltage Protection suffix "Z" (eg. PMA 48/24/Y/Z).

*Note: Constant current operation may be set up by the customer. Units can if desired be set and tested in this mode prior to despatch, i.e. use suffix Y when ordering.



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