



Note: Specific model may differ from photo.

UNIVERSAL INPUT

FEATURES

- ◆ Dual, triple or quadruple outputs
- ◆ Built-in EMI filter
- ◆ Wide input range 85 to 264 VAC
- ◆ Input surge current protection
- ◆ Overvoltage protection
- ◆ Overcurrent protection
- ◆ 100% burn-in
- ◆ Optional output connectors
- ◆ Optional on/off switch
- ◆ Optional Power Fail Detect (PFD) signal

DESCRIPTION

The FMA110P series of AC/DC switching power supplies are for 110 watts of continuous output power. They are enclosed in a 94V-1 rated polyphenylene-oxide case with an IEC 320 inlet to mate with an interchangeable cord for worldwide use. An on/off switch can be added by request. All models meet CISPR 11 and FCC class B emission limits, and are designed for medical applications.

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature: 0° to +70°C
 Storage Temperature: -40°C to +85°C
 Relative Humidity: 5% to 95% non-condensing
 Derating: Derate from 100% at +50° C linearly to 50% at +70°C.

INPUT SPECIFICATION

Input Voltage: 85 ~ 264 VAC
 Input Frequency: 47 ~ 63Hz
 Input Current: 3.2A (rms) for 115 VAC
 1.8A (rms) for 230VAC
 Leakage Current: 90µA max. at 115 VAC, 60Hz
 150µA max. at 230 VAC, 50Hz

FMA110P SERIES 110 WATT MEDICAL SWITCHING POWER SUPPLIES

OUTPUT SPECIFICATIONS

Output Voltage/Current: See rating chart
 Total Output Power: 110 watts maximum
 Ripple and Noise: 1% peak to peak max.
 Overvoltage Protection: Provided on output #1; set at 112-132% of it's nominal output voltage
 Overcurrent Protection: All outputs protected to short circuit conditions
 Temperature Coefficient: All outputs ± 0.04% / C° max.
 Transient Response: Max. excursion of 4% or better on all models, recovering to 1% of final value within 500 µs after a 25% step load change

PFD Signal (Optional): TTL logic is high for normal operation and TTL logic is low upon loss of input power. This signal appears at least 1mS prior to a +5V output dropping 5% below it's nominal value. This signal also provides a min. delay of 100mS after +5V is within regulation.

GENERAL SPECIFICATIONS

Switching Frequency: 20K to 250KHz, varies with load and line
 Efficiency: 70% min. on single output models with $V_o \geq 12V$, 65% min. on the others
 Hold-up Time: 12 mS min. at 110 VAC
 Line Regulation: ±0.5% max. at full load
 Inrush Current: 15 amps at 115 VAC, or 30 amps at 230 VAC
 Withstand Voltage: 4,000 VAC input to output
 1,500 VAC input to ground
 500 VAC output to ground
 MTBF: (25° C ambient) 550,000 hours min. at full load
 EMI Requirements: In compliance with CISPR 11 (EN 55011) Class B and FCC Class B
 Safety Requirements: Meets or exceeds:
 (a) UL 2601-1
 (b) CSA C22.2 No. 601.1
 (c) IEC 601-1 (EN 60601-1)

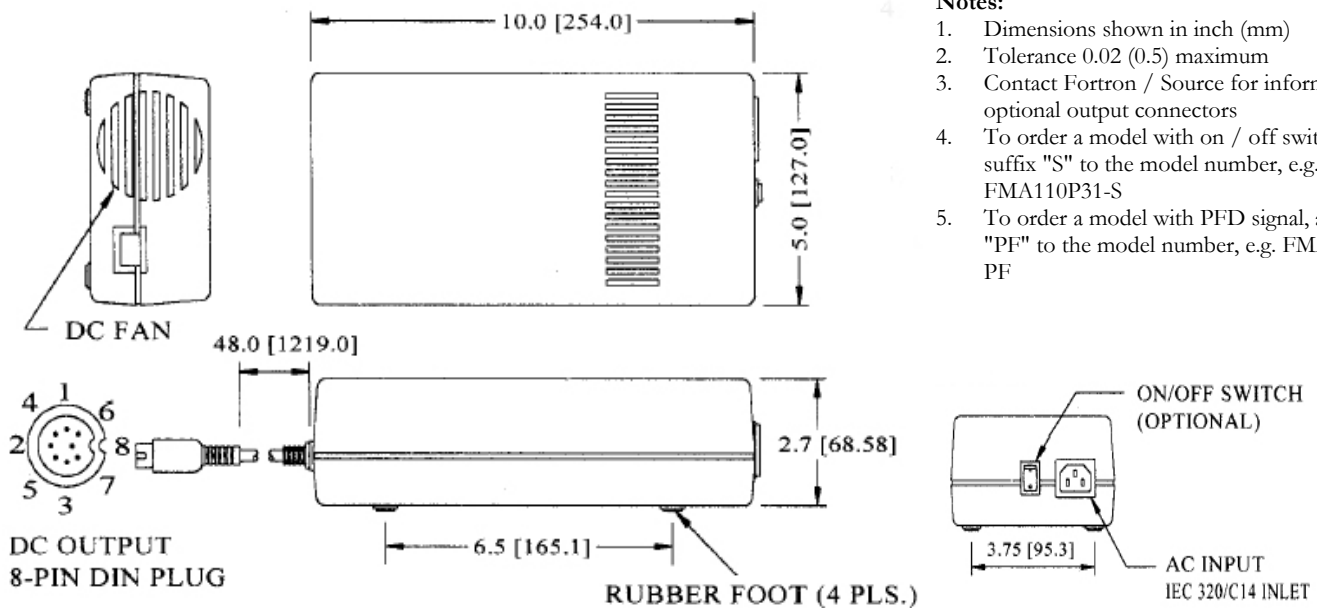


OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Output #1				Output #2					Output #3				Output #4				Max. Power
	Vnom	Imin	Imax	Tol.	Vnom	Imin	Imax	Ipeak	Tol.	Vnom	Imin	Imax	Tol.	Vnom	Imin	Imax	Tol.	
FMA110P23	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	(N/A)				(N/A)				110W
FMA110P31	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	-12	0A	2A	5%	(N/A)				110W
FMA110P32	+5V	0.8A	10A	5%	+15V	0A	4A	7.5A	5%	-15	0A	2A	5%	(N/A)				110W
FMA110P40	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	-12	0A	2A	5%	-5V	0A	2A	5%	110W
FMA110P41	+5V	0.8A	10A	5%	+15V	0A	4A	7.5A	5%	-15	0A	2A	5%	+24V	0A	2A	5%	110W
FMA110P42	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	-12	0A	2A	5%	+12V	0A	2A	5%	110W
FMA110P45	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	-12	0A	2A	5%	+24V	0A	2A	5%	110W
FMA110P45-1	+5V	2A	10A	5%	+12V	0A	5A	9.0A	5%	-12	0A	2A	5%	+24V	1.5A	3A	10%	110W
FMA110P45-2	+5V	0.8A	10A	5%	+24V	0A	3A	5.0A	5%	-12	0A	2A	5%	+12V	0A	2A	5%	110W
FMA110P46	+5V	0.8A	10A	5%	+15V	0A	4A	7.5A	5%	-15	0A	2A	5%	-5V	0A	2A	5%	110W

- Notes: (1) Peak output current with 10% maximum duty cycle for less than 60 seconds. Total peak power must not exceed 130 watts.
 (2) The output #1 of model FMA110P45-1 needs a minimum current of 2A to support the other outputs at their maximum rated loads.

MECHANICAL SPECIFICATIONS



Notes:

1. Dimensions shown in inch (mm)
2. Tolerance 0.02 (0.5) maximum
3. Contact Fortron / Source for information on optional output connectors
4. To order a model with on / off switch, add suffix "S" to the model number, e.g. FMA110P31-S
5. To order a model with PFD signal, add suffix "PF" to the model number, e.g. FMA110P31-PF

PIN CHART

MODEL \ PIN	1	2	3	4	5	6	7	8
FMA110P23	Common Return	N.C.	Output #1	N.C.	Output #2	Common Return	Output #1	N.C. or PFD
FMA110P31 FMA110P32	Common Return	Output #3	Output #1	N.C.	Output #2	Common Return	Output #1	N.C. or PFD
FMA110P40 FMA110P41	Common Return	Output #3	Output #1	Output #4	Output #2	Common Return	Output #1	N.C. or PFD
FMA110P42 FMA110P45	Common Return	Output #3	Output #1	Output #4	Output #2	Common Return	Output #1	N.C. or PFD
FMA110P45-1 FMA110P45-2	Common Return	Output #3	Output #1	Output #4	Output #2	Common Return	Output #1	N.C. or PFD
FMA110P46	Common Return	Output #3	Output #1	Output #4	Output #2	Common Return	Output #1	N.C. or PFD

Note: All data are subject to change without notice

