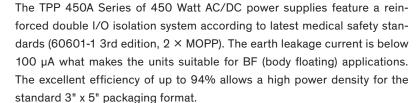
II TRACO POWER

AC/DC Medical Power Supplies

TPP 450A Series, 450 Watt

- High power density 3" x 5" open frame medical power supply
- 450 Watt with forced air cooling 320 Watt convection cooled without derating up to 50°C
- Medical certification to
 IEC/EN/ES 60601-1 3rd edition for 2×MOPP
- EMC compliance to IEC/EN/ES 60601-1-2 4th edition
- Risk management process according to ISO 14971 including risk management file
- Acceptance criteria for electronic assemblies according to IPC-A-610 Level 3
- Isolation (4000 VAC) and leakage current (< 100 μA) rated for BF applications
- An integrated variable fan speed controller allows for an easy use of an external fan
- Standard features: 5 V standby output 12 V aux output, Remote On/Off, Power Good Signal, variable fan speed
- Operating up to 5000 m altitude
- 5 year product warranty



Natural convection cooled power is 320W up to $+50^{\circ}$ C and 150W at $+85^{\circ}$ C. Thus you can power your medical device in a quiet and hygienic way as you don't need to run a fan to cool down the power supply. High reliability is pro-

vided by use of industrial quality grade components and an excellent thermal

management. It makes the products an ideal solution for medical devices and for demanding safety and space critical applications.













ES 60601-

Encased version see TPP 450 Series



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Models							
Order Code	Output Power	Output Voltage	Output Current Output Current		Efficiency		
	(max.)	(adj. ±8%)	natural convection	forced air cooling	(typ.)		
TPP 450-112A-M		12 VDC	20.8 A	37.5 A	91 %		
TPP 450-115A-M		15 VDC	16.6 A	30.0 A	92 %		
TPP 450-124A-M	450 Watt	24 VDC	13.3 A	18.75 A	93 %		
TPP 450-136A-M		36 VDC	8.86 A	12.5 A	93 %		
TPP 450-148A-M		48 VDC	6.65 A	9.4 A	94 %		

Options on demand (backorder with MOQ, non stocking items) - model with 28 VDC / 16.1 A available - model with 53 VDC / 8.55 A available

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Input Specification	ıs			
Input voltage range	AC range (universal input)DC rangePower derating at low input voltage		85 - 264 VAC (47 - 63 Hz) 120 - 370 VDC 1.33 %/V below 100 VAC	
Input current at full load	- at 100 VAC - at 240 VAC		5.8 A max. 2.4 A max.	
Input protection	- Internal fuse in line and neutral		T 6.3 A / 250 VAC	
Zero load power consump		12 VDC models: er output models:	0.3 W typ. 0.5 W typ.	
Leakage current	- at 264 VAC		100 μA max.	
Power factor			0.95 min. (active power correction)	
Output Specification	ons			
Voltage set accuracy	- at 230 VAC		± 1%	
Output voltage adjustmen	t		±8%	
Regulation	- Input variation (85 - 264 VAC) - Load variation (0 - 100%)		0.2% max. 0.5% max.	
Minimum load			not required	
Temperature coefficient			0.02 %/K max.	
Hold-up time	- at 115 VAC		14 ms typ.	
Start-up time			2 s max.	
Rise time			30 ms typ.	
Ripple and noise (20 MHz Bandwidth)		12 VDC model: 15 VDC model: 28 VDC model: 36 VDC model: 48 VDC model: 53 VDC model:	280 mVp-p typ. (w. cap. 1μF/50V 1206 X7R MLCC) 360 mVp-p typ. (w. cap. 1μF/50V 1206 X7R MLCC)	
Transiente response	Peak deviation (50 - 75% load chaRecovery time	inge)	3% Vout typ. 600 µs typ.	
Overvoltage protection (Featured by main power or	utput)	110 - 135% of Vout (latch mode)		
Overload protection (Featured by main power or	utput and standby power output)	115 - 150% of lout max. (current limitation)		
Short circuit protection (Featured by all outputs)	Protection level 1 (nominal)Protection level 2 (instantaneous h	igh current)	continuous, automatic recovery (hiccup mode) latch	
Auxiliary outputs	- Power source for fan (variable fan speed control)		12 VDC / 500 mA max. Refers to pin +Fan and -Fan	
	- Standby power source		5 VDC / 2000 mA max. Refers to pin +Standby and -Standby	
Capacitive load		12 VDC model: 15 VDC model: 24 VDC model: 28 VDC model: 36 VDC model: 48 VDC model: 53 VDC model:	20'000 μF max. 7'820 μF max. 5'750 μF max. 3'500 μF max. 1'960 μF max.	

All specifications valid at nominal input voltage, full load and $\pm 25^{\circ}\text{C}$ after warm-up time unless otherwise stated.

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