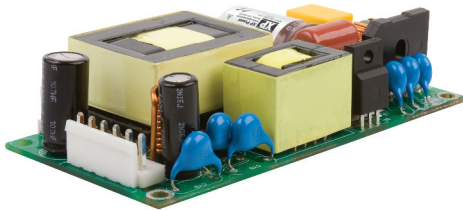


# ECP180 Series



- Low 1" Profile
- High Power Density
- 2.0" by 4.0" Footprint
- 120W Convection-cooled Rating
- 180W Force Cooled Rating
- Medical & ITE Approvals
- Class I and Class II Applications
- High Efficiency, up to 94%
- Less than 0.5W No Load Input Power
- Built-In Fan Supply
- Low Earth Leakage Current
- 5000m Operating Altitude



The ECP180 series has been designed to minimise no load power consumption and maximise efficiency facilitating equipment design to meet the latest environmental legislation and minimising power loss and heating within equipment enclosures.

Approved for medical and ITE applications, this range of single output AC/DC power supplies are packaged in an ultra-low profile 1" height with a foot print of just 2.0" by 4.0". The ECP180 series is suitable for use in both class I and class II applications.

The ECP180 provides up to 180W force-cooled or 120W convection-cooled leading to very high power densities of 22W/in<sup>3</sup> or 15W/in<sup>3</sup> respectively. A 12V, 500mA fan supply is included in the design.

The power supply contains two fuses and low leakage currents as required by medical applications and is safety approved to operate in a 70 °C ambient.

The low profile and safety approvals covering ITE and medical standards for both class I and class II applications along with conducted emissions meeting EN55011/32 level B allow the versatile ECP180 series to be used in a vast range of applications.

## Models and Ratings

Output Voltage	Output Current		Ripple and Noise pk-pk <sup>(2)</sup>	Fan Output	Efficiency <sup>(3)</sup>	Model Number <sup>(4)</sup>
	Convection-cooled	Forced-cooled <sup>(1)</sup>				
12.0 V	10.00 A	15.00 A	120 mV	12 V/0.5 A	92%	ECP180PS12
15.0 V	8.00 A	12.00 A	150 mV	12 V/0.5 A	92%	ECP180PS15
24.0 V	5.00 A	7.50 A	240 mV	12 V/0.5 A	93%	ECP180PS24
28.0 V	4.30 A	6.43 A	280 mV	12 V/0.5 A	93%	ECP180PS28
36.0 V	3.33 A	5.00 A	360 mV	12 V/0.5 A	94%	ECP180PS36
48.0 V	2.50 A	3.75 A	480 mV	12 V/0.5 A	94%	ECP180PS48

**Notes:**

1. Requires 10 CFM.
2. Measured with 20 MHz bandwidth and 10  $\mu$ F electrolytic capacitor in parallel with 0.1  $\mu$ F ceramic capacitor
3. Minimum average efficiencies measured at 25%, 50%, 75% & 100% of 180 W load and 230 VAC input.

## Input Characteristics

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage - Operating	85	115/230	264	VAC	Derate output from 120 W at 100 VAC to 110 W at 90 VAC and 100 W at 85 VAC when convection-cooled
Input Frequency	47	50/60	63	Hz	Agency approval 47-63 Hz
Power Factor		>0.9			230 VAC, 100% load EN61000-3-2 class A EN61000-3-2 class C > 145W
Input Current - Full Load		1.8/0.9		A	115/230 VAC
Inrush Current		80		A	230 VAC cold start, 25 °C
Earth Leakage Current		85/150	230	$\mu$ A	115/230 VAC/50 Hz (Typ.), 264 VAC/60 Hz (Max.)
No Load Input Power			0.5	W	
Input Protection	F3.15 A/250 V Internal fuse fitted in line and neutral.				

## Output Characteristics

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage - V1	12		48	VDC	See Models and Ratings table
Initial Set Accuracy			$\pm 1$	%	50% load, 115/230 VAC
Minimum Load	0			A	
Start Up Delay			2	s	115/230 VAC full load. See fig. 3 & 4.
Hold Up Time	10	17/11		ms	Min at full load, 115 VAC. Typical at 120W/180W
Drift			$\pm 0.02$	%	After 20 min warm up
Line Regulation			$\pm 0.5$	%	90-264 VAC
Load Regulation			$\pm 0.5$	%	0-100% load
Transient Response			4	%	Recovery within 1% in less than 500 $\mu$ s for a 50-75% and 75-50% load step
Over/Undershoot		4		%	Full Load
Ripple & Noise			1	% pk-pk	20 MHz bandwidth & 10 $\mu$ F electrolytic capacitor in parallel with 0.1 $\mu$ F ceramic capacitor, See fig. 6.
Overvoltage Protection	110		140	%	Vnom, recycle input to reset
Overload Protection	110		160	% I nom	See fig. 1.
Short Circuit Protection					Trip and Restart See fig. 2.
Temperature Coefficient			0.02	%/ °C	
Overttemperature Protection				°C	Measured Internally, Auto Resetting