

## 120 Watts

- US DoE Energy efficiency level VI
- EU CoC Tier 2 requirements
- EN55022 Level B conducted & radiated
- Class I
- Single outputs 12 to 48V
- Low profile
- 3 Year warranty



The EDF120 range of external AC-DC power adapters are compliant with the latest energy efficiency Level VI standard and EU CoC Tier 2. The units offer 120 watts of output power in a slim package with output voltages available between 12 and 48VDC. The range is reliable, cost competitive, and comes with an impressive FIDUS 3 year warranty.

Dimensions:

6.69 x 2.55 x 1.52" (170 x 64.8 x 38.5mm)

### Models & Ratings

Model Number	Output Power	Output voltage	Output Current	Efficiency <sup>1)</sup>
EDF12012	120W	12V	10A	90%
EDF12015	120W	15V	8A	91%
EDF12019	120W	19V	6.32A	91%
EDF12024	120W	24V	5A	92%
EDF12028	120W	28V	4.29A	92%
EDF12048	120W	48V	2.5A	92%

### Notes

1. Efficiency calculated at average load, 115/230VAC
2. Alternative output connectors available for production quantities. Contact sales for details
3. For UK/ US/ EU mains power cable please order UK-C14, US-C14 or EU-C14 separately

### Key specifications

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
AC Input range	90		264	VAC	No derating
Operating temperature	-20		70	°C	Derate linearly 2% per °C from 40 to 70°C and derate linearly 1% per °C from 0 to -20°C
Efficiency		>89		%	At average load 115/230VAC
Dimensions	6.69 x 2.55 x 1.52" (170 x 64.8 x 38.5mm)				
EMC	EN55022 Level B Conducted and Radiated. EN61000-3 and EN61000-4, harmonics, flicker, Surge, EFT, ESD, conducted and radiated. FCC Part 15 Class B, IC ICES-003.				
Safety	IEC 60950-1, UL/CSA C22.2 No 60950-1, IEC/EN/UL 62368-1				

### Input

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Input voltage	90		264	VAC	No derating
Input frequency	47		63	Hz	
Power factor	0.9		0.95		0.9@230VAC 0.95@115VAC full load
Input current	3A at 90VAC. 1.5A at 264VAC max.			A	
Inrush current	<75A peak at 115VAC. <150A at 230VAC			A	25°C cold start
No load input power		<150		mW	

## Output

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Output voltage	12		48	VDC	
Total regulation			±6	%	
Line Regulation			1	%	
Load Regulation			5	%	
Minimum Load	0			%	
Transient Response			+/-10	%	50% Load change, 200mA/uS slope 10ms response time.
Ripple & Noise		240		mVp-p	All models measured with 10uF electrolytic capacitor and 0.1uF ceramic capacitor in parallel at output connector. 20 MHz bandwidth
Hold up time		>20		ms	At full load 115VAC
Overload protection	105		140	%	Automatic recovery
Short circuit protection					Automatic recovery
Over voltage protection	110		130	%	Shutdown and latch off, AC recycle

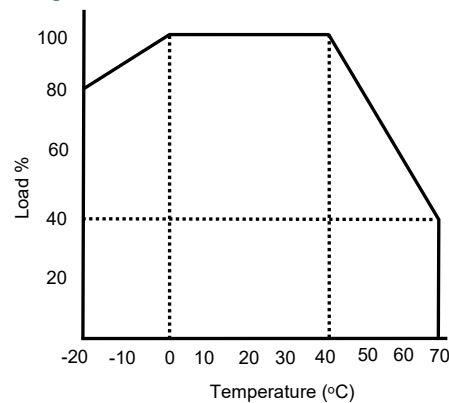
## General

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		>89		%	At average load 115/230VAC
Isolation	4242VDC / 2121VDC			VAC	Primary - Secondary / Primary to frame ground 4 sec
Leakage Current	0.121		0.36	mA	264VAC Line-Output and Neutral-Output. Max figure is with no PE connected
Earth Leakage Current		<360		uA	
Switching Frequency	45		55	KHz	
Power density			4.62	W/In <sup>3</sup>	
MTBF		>500		KHrs	As per Bellcore TR-332
Weight		610		g	

## Environmental

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating temperature	-20		70	°C	Derate linearly 2% per °C from 40 to 70°C and derate linearly 1% per °C from 0 to -20°C
Storage temperature	-20		85	°C	
Cooling					Convection cooled
Temperature coefficient		0.05		%/°C	
Humidity	10		90	% RH	

Derating curve



## EMC: Emissions

	Standard	Test level	Criteria	Notes & Conditions
Conducted	EN55022	B		
Radiated	EN55022	B		
Harmonic current	EN61000-3-2	Class A		
Voltage flicker	EN61000-3-3			

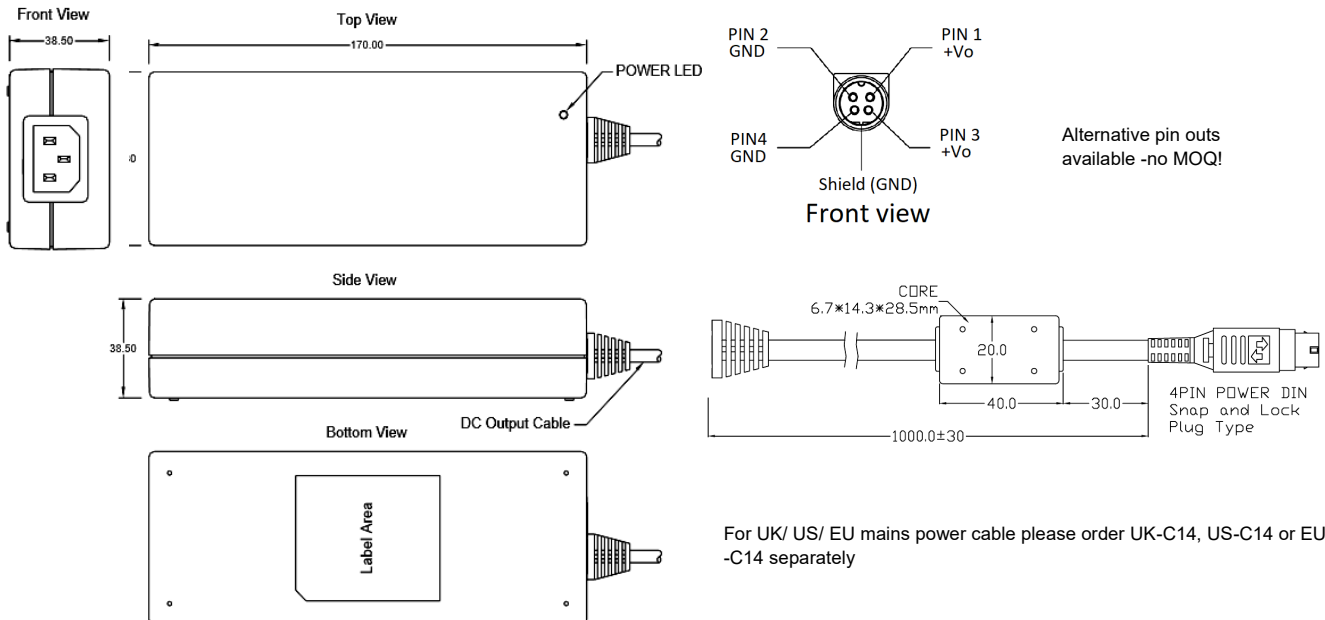
## EMC: Immunity

	Standard	Test level	Criteria	Notes & Conditions
ESD	EN61000-4-2	3	A	Contact +/- 4kV Air +/- 8kV Air
Radiated	EN61000-4-3	3	A	
EFT	EN61000-4-4	3	A	
Surges	EN61000-4-5	Installation Class 3	A	
Conducted	EN61000-4-6	2	A	
Dips and interruptions	EN61000-4-11	>95% interruption 250 periods, >95% dip 0.5 periods, 30% dip 25 periods. Perf criteria: C,A,A		

## Safety Approvals

	Safety standard	Notes & Conditions
UL	UL 60950-1: 2nd edition, UL62368-1	
CB	IEC 60950-1:2005 /A2:2013, IEC62368-1	
TUV	EN62368-1	
CE		2011/65/EU RoHS Directive, 2014/35/EU Low voltage directive, 2014/35/EU EMC Directive
Equipment protection class		Class I

## Mechanical Details



## Notes

1. All dimensions in mm
2. Tolerance:  $\pm 0.5\text{mm}$
3. AC Inlet: IEC320-C14
4. 16 AWG DC output cables used on 48V units, 14 AWG used on all other units
5. Negative DC output is tied to AC earth, for floating outputs please contact sales
6. Output connector part number KPPX-4P, mating part board mount KPJX, panel mount KPJX-PM and cable mount KPJX-CM