

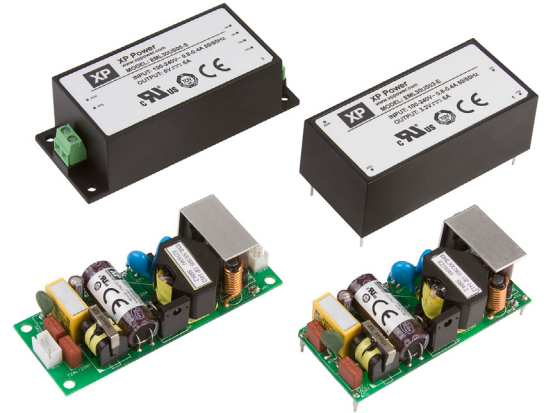
15W

AC-DC
power supplies 

The EML15 is a series of open frame and encapsulated 15W AC-DC single output power supplies designed for medical applications.

The series provides a number of flexible mechanical options including open frame PCB mount (suffix -P), open frame chassis mount (suffix -T), encapsulated PCB mount (suffix -E), encapsulated chassis mount with screw terminals (suffix -S) and a DIN rail option (suffix -SD).

With approvals to world-wide medical safety standards, compliance with class B for both conducted and radiated emissions and a 130%, 30s peak load capability, these class II isolation parts benefit system designers with easy integration into the latest medical products and applications.



Features

- ▶ Regulated single outputs 3.3V to 48VDC
- ▶ Input range 85 to 264VAC
- ▶ Open frame or encapsulated PCB mount
- ▶ Open frame or encapsulated chassis mount
- ▶ Encapsulated DIN rail mount
- ▶ Medical (2 x MOPP) approvals
- ▶ 3.0kVAC input to output isolation
- ▶ Class II construction
- ▶ Peak load capability
- ▶ No external components required
- ▶ <0.3W no load input power
- ▶ -25°C to +70°C operating temperature
- ▶ Full load to +50°C
- ▶ 3 year warranty

Applications



Healthcare



Home
healthcare



Medical
diagnostic

Dimensions

- (-P): 62.0 x 30.7 x 24.1 mm (2.44 x 1.21 x 0.95")
- (-T): 78.7 x 31.8 x 23.1 mm (3.10 x 1.25 x 0.91")
- (-E): 65.0 x 33.3 x 24.4 mm (2.56 x 1.31 x 0.96")
- (-S): 84.0 x 34.5 x 26.4 mm (3.30 x 1.36 x 1.04")

Documentation

For further information click the link or scan the code

→ xppower.com



Models & ratings

Model number ^(2,3)	Output voltage	Output current		Efficiency	Output power
		Nominal	Peak ⁽¹⁾		
EML15US03	3.3VDC	3.00A	3.90A	75%	10W
EML15US05	5.0VDC	3.00A	3.90A	78%	15W
EML15US09	9.0VDC	1.67A	2.17A	80%	15W

Continued on page 2

Notes:

1. Peak load lasting <30s with a maximum duty cycle of 10%, average output power not to exceed nominal.
2. Add suffix to model number to define type: add '-P' for PCB mount, add '-T' for chassis mount, add '-E' for encapsulated, add '-S' for screw terminals.
3. A Screw terminal version (-S) is available with DIN clip attached, add suffix 'D', e.g. EML15US24-SD, DIN rail mounting kit is available as a separate item, order code ECL15 DIN CLIP

Models & ratings

Model number ^(2,3)	Output voltage	Output current		Efficiency	Output power
		Nominal	Peak ⁽¹⁾		
EML15US12	12.0VDC	1.25A	1.62A	80%	15W
EML15US15	15.0VDC	1.00A	1.30A	80%	15W
EML15US24	24.0VDC	0.63A	0.82A	82%	15W
EML15US36	36.0VDC	0.42A	0.54A	82%	15W
EML15US48	48.0VDC	0.32A	0.41A	82%	15W

- Notes:**
1. Peak load lasting <30s with a maximum duty cycle of 10%, average output power not to exceed nominal.
 2. Add suffix to model number to define type: add ‘-P’ for PCB mount, add ‘-T’ for chassis mount, add ‘-E’ for encapsulated, add ‘-S’ for screw terminals.
 3. A Screw terminal version (-S) is available with DIN clip attached, add suffix ‘D’, e.g. EML15US24-SD, DIN rail mounting kit is available as a separate item, order code ECL25/30 DIN CLIP.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage range	85		264	VAC	
	120		370	VDC	
Input frequency	47		63	Hz	
Input current - full load		0.32/0.16		A rms	At 115/230VAC
No load input power			0.3	W	
Inrush current		20/40		A	At 115/230VAC
Earth leakage current					Class II construction no earth
Input protection	T1AL/250V internal fuse fitted in line and neutral				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	3		48	VDC	See Models & Ratings
Initial set accuracy			±1	%	
Output voltage adjustment			±5	%	Not encapsulated units
Minimum load	0			A	No minimum load required
Line regulation			±0.5	%	
Load regulation			±1	%	
Touch current			70	µA	N.C.
			80		SFC
Start up delay			2	s	
Start up rise time			14	ms	
Hold up time	12			ms	At full load and 115VAC
Transient response			4	%	Deviation, recovery within 1% in less than 500µs for a 25% load change
Ripple & noise			50	mV pk-pk	3.3-5V, 20MHz bandwidth
			120	mV pk-pk	12-15V, 20MHz bandwidth
			200	mV pk-pk	24-48V, 20MHz bandwidth
Overvoltage protection	195		216	% Vnom	3.3V versions, recycle input to reset
	115		130	% Vnom	All other versions, recycle input to reset
Overload protection	110		180	%	
Short circuit protection					Trip & Restart (hiccup mode)
Temperature coefficient			0.05	%/°C	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	75	80	82	%	See Models & Ratings
Isolation: input to output	4000			VAC	
Switching frequency		70		kHz	
Power density			11.9	W/cm³	PCB Mount version
Mean time between failure		>400		khrs	MIL-HDBK-217F, +25°C GB
Weight		35 (0.07)		g (lb)	Open frame versions (-P)
		90 (0.20)			Encapsulated version (-E)
		110 (0.24)			Screw terminal version (-S)

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-20		+70	°C	Derate linearly from 100% at +50 °C to 50% at +70 °C
Storage temperature	-40		+85	°C	
Cooling	Convection-cooled				
Humidity			95	%RH	Non-condensing
Operating altitude			3048	m	
Shock	IEC68-2-27, 30g, 11ms half sine, 3 times in each of 6 axes				
Vibration	IEC68-2-6, 2g, 10Hz to 500kHz, 10 mins/cycle, 60 mins each cycle				

EMC: emissions

Phenomenon	Standard	Test Level	Notes & conditions
Conducted	EN55032/11	Class B	
Radiated	EN55032/11	Class B	
Harmonic current	EN61000-3-2	Class A	
Voltage flicker	EN61000-3-3		

EMC: immunity

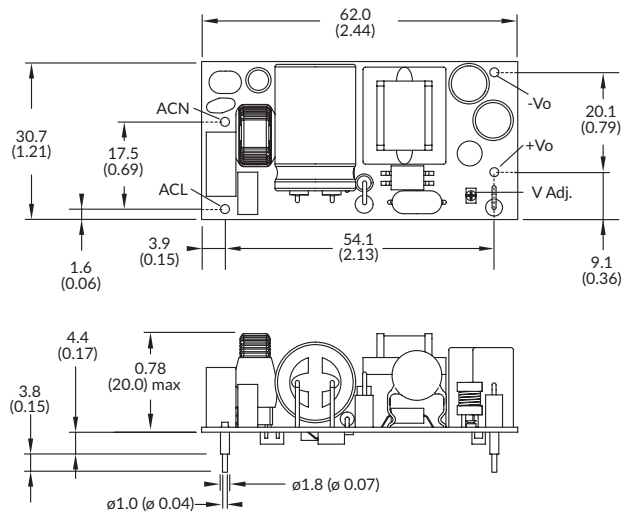
Phenomenon	Standard	Test level	Criteria	Notes & conditions
Esd immunity	EN61000-4-2	4	A	
Radiated immunity	EN61000-4-3	10 V/m	A	80% mod
Eft/burst	EN61000-4-4	3	A	
Surge	EN61000-4-5	3	A	
Conducted	EN61000-4-6	10Vrms	A	
Magnetic fields	EN61000-4-8	10A/m	A	
Dips and interruptions	EN60601-1-2	70% U _T for 500ms	A	40% of U ^T dip is performance criteria A if load is reduced to 45% based on 100VAC
		40% U _T for 100ms	A	
		<5% U _T for 10ms	A	
		<5% U _T for 5000ms	B	
	EN60601-1-2 4th Ed	70% U _T for 500ms	A	
		0% U _T for 20ms	A	
		0% U _T for 5000ms	B	

Safety approvals

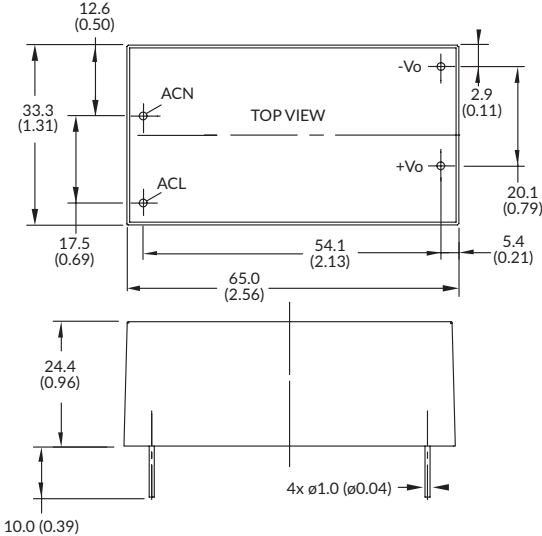
Certification	Standard	Notes & conditions
CB Report	IEC60601-1	Medical
UL	ANSI/AAMI ES60601-1 & CSA C22.2, No.60601-1	Medical
TUV	EN60601-1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	
	Means of protection	Category
Primary to secondary	2 x MOPP (Means of Patient Protection)	IEC60601-1

Mechanical details

Open frame - PCB mount (-P)



Encapsulated (-E)



Notes:

1. Dimensions: mm (inches).
2. Weight: P Version: 35g (0.07lbs) T Version: 35g (0.07lbs) E Version: 90g (0.20 lbs)
S Version: 110g (0.24lbs)
3. Tolerances: x.x = ± 0.5 (x.xx = ±0.02), x.xx = ± 0.25 (x.xxx = ±0.01)

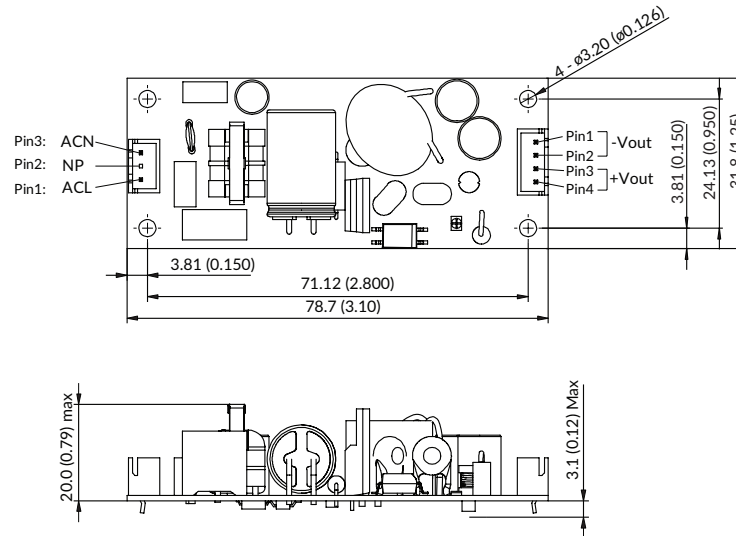
Mating Connectors (-T version only)

Input Connector: JST XHP-3
Output Connector: JST XHP-4
Crimps: SXH-001T-P0.6

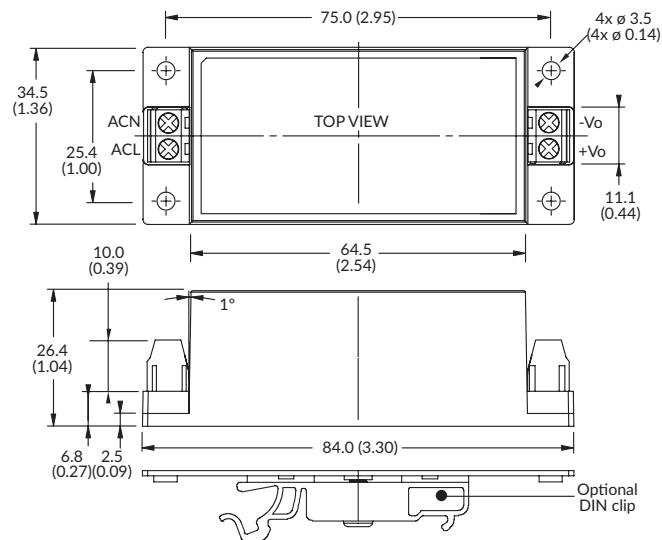


Mechanical details

Open frame - Chassis mount (-T)



Screw terminal (-S)



Notes:

1. Dimensions: mm (inches).
2. Weight: P Version: 35g (0.07lbs) T Version: 35g (0.07lbs) E Version: 90g (0.20 lbs)
S Version: 110g (0.24lbs)
3. Tolerances: x.x = ± 0.5 (x.xx = ± 0.02), x.xx = ± 0.25 (x.xxx = ± 0.01)

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