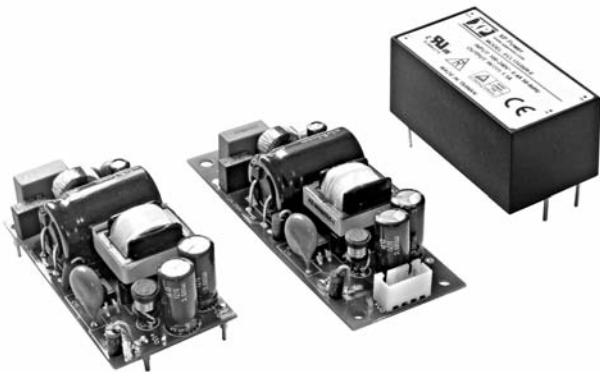


## ECL15 Series



- Ultra Compact Size
- Low Cost
- Single Outputs from 3.3 to 48 V
- PCB Mount & Open Frame
- Encapsulated PCB Mount
- Class II
- Peak Load Capability

## Specification

## Input

Input Voltage	• 85-264 VAC (120-370 VDC)
Input Frequency	• 47-63 Hz
Input Current	• 0.3 A rms at 230 VAC
Inrush Current	• 20 A at 115 VAC, 40 A at 230 VAC,
Earth Leakage Current	• Class II construction no earth
Input Protection	• Internal 2 A fuse

## Output

Output Voltage	• See tables
Output Voltage Trim	• $\pm 5\%$ (not encapsulated units)
Initial Set Accuracy	• $\pm 1\%$
Minimum Load	• No minimum load required
Start Up Delay	• 2 s max
Start Up Rise Time	• 14 ms max
Hold Up Time	• 16 ms typical at full load & 115 VAC
Line Regulation	• $\pm 0.5\%$ max
Load Regulation	• $\pm 1\%$ max
Transient Response	• 4% max deviation, recovery to within 1% in 500 $\mu$ s for a 25% load change
Ripple & Noise	• 3.3-5 V versions: 50 mV pk-pk, 12-15 V versions: 120 mV pk-pk, 24-48 V versions: 200 mV pk-pk, 20 MHz BW
Overvoltage Protection	• 115-135% Vnom, recycle input to reset
Overload Protection	• 120-150%
Short Circuit Protection	• Trip and restart (Hiccup mode)
Temperature Coefficient	• 0.05%/ $^{\circ}$ C

## General

Efficiency	• See tables
Isolation	• 3000 VAC Input to Output
Switching Frequency	• 70 kHz typical
Power Density	• 4.8 W/In <sup>3</sup> (PCB Mount version)
MTBF	• >400 kHrs per MIL-HDBK-217F

## Environmental

Operating Temperature	• -20 $^{\circ}$ C to +70 $^{\circ}$ C, derate linearly from 100% at +50 $^{\circ}$ C to 50% at +70 $^{\circ}$ C
Cooling	• Convection-cooled
Operating Humidity	• 95% RH, non-condensing
Storage Temperature	• -40 $^{\circ}$ C to +85 $^{\circ}$ C
Operating Altitude	• 3000 m
Vibration	• 2 g, 10 Hz to 500 kHz, 10 mins/cycle, 60 mins each cycle

## EMC &amp; Safety

Emissions	• EN55022, level B conducted & radiated
Harmonic Currents	• EN61000-3-2, EN61000-3-3
ESD Immunity	• EN61000-4-2, level 3 Perf Criteria A
Radiated Immunity	• EN61000-4-3, 10 V/m 80% mod Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3 Perf Criteria A
Surge	• EN61000-4-5, level 3 Perf Criteria A
Conducted Immunity	• EN61000-4-6, 10 Vrms Perf Criteria A
Magnetic Fields	• EN61000-4-8, 10 A/m Perf Criteria A
Dips & Interruptions	• EN61000-4-11, 70% U <sub>r</sub> for 10 ms, 40% U <sub>r</sub> for 100 ms, <5% U <sub>r</sub> for 5000 ms Perf Criteria A, B, B
Safety Approvals	• EN60950, UL60950, CSA22.2 No. 234 per cUL

**Models and Ratings**

Output Power	Output Voltage	Output Current		Efficiency	Model Number <sup>(2)</sup>
		Nominal	Peak <sup>(1)</sup>		
10 W	3.3 VDC	3.00 A	3.90 A	75%	ECL15US03†^
15 W	5.0 VDC	3.00 A	3.90 A	78%	ECL15US05†^
15 W	9.0 VDC	1.67 A	2.17 A	80%	ECL15US09†^
15 W	12.0 VDC	1.25 A	1.62 A	80%	ECL15US12†^
15 W	15.0 VDC	1.00 A	1.30 A	80%	ECL15US15†^
15 W	24.0 VDC	0.63 A	0.82 A	82%	ECL15US24†^
15 W	48.0 VDC	0.32 A	0.41 A	82%	ECL15US48†^

**Notes**

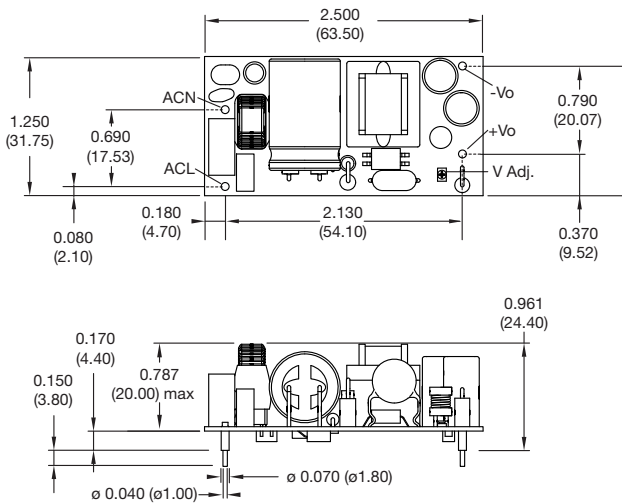
1. Peak load lasting <30 s with a maximum duty cycle of 10%, average output power not to exceed nominal.
2. Add suffix to model number to define type: add '-P' for PCB mount, add '-T' for chassis mount, add '-E' for encapsulated.
3. For medically-approved 15 W power supplies contact sales or see [www.xppower.com](http://www.xppower.com) for details of CU15-M Series.

† Available from Farnell. See pages 204-206.

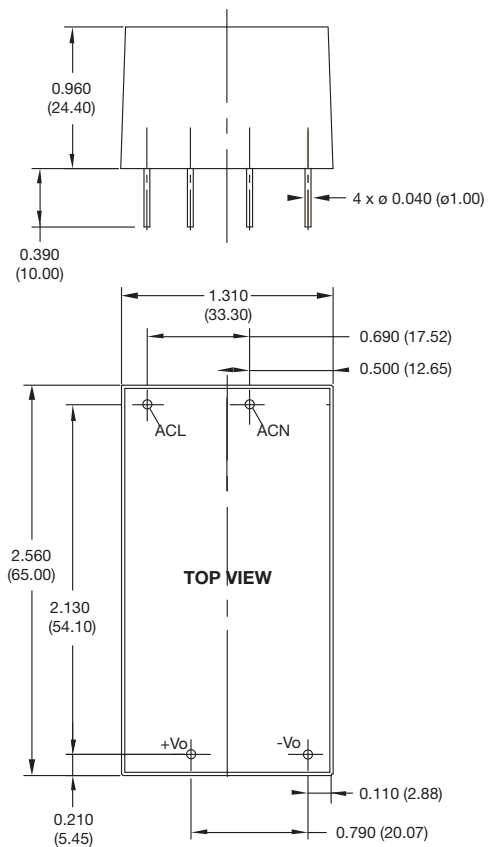
^ Available from Newark. See pages 207-208.

**Mechanical Details**

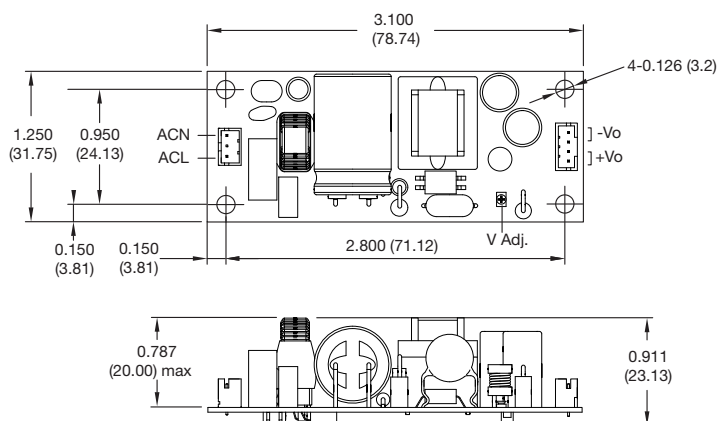
**Open Frame - PCB Mount (-P)**



**Encapsulated (-E)**



**Open Frame - Chassis Mount (-T)**



**Notes**

1. Dimensions in inches (mm).
2. Tolerances: x.xx = ± 0.02 (x.x = ± 0.5)  
x.xxx = ± 0.01 (x.xx = ± 0.25)

**Mating Connectors (Chassis mount only)**

- Input Connector: JST PHR-3
- Output Connector: JST PHR-4
- Crimps: SPH-002T-P0.5S
- Cable harness with 300 mm wire available, order part no. ECL15 LOOM KIT