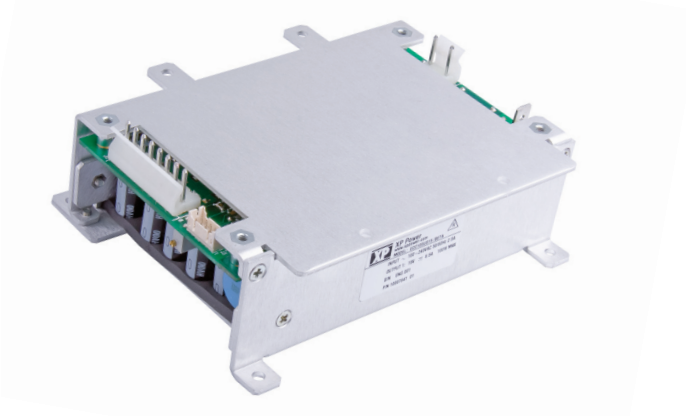
100 Watts
ECC Series



- –40 °C to +75 °C Operation
- 100 W – Baseplate Cooled
- High Efficiency Resonant Topology
- Screw Terminals Available
- 5V Standby Output
- Remote On/Off & Power OK Signal
- 3 Year Warranty

Specification

Input

Input Voltage	• 85-264 VAC (120-370 VDC), derate output power <90 VAC by 10%
Input Frequency	• 47-400 Hz[1]
Input Current	• 1.5 A typical at 115 VAC, full load 0.9 A typical at 230 VAC, full load
Inrush Current	• 40 A max at 230 VAC, 25 °C cold start
Power Factor	• EN61000-3-2, class A
Earth Leakage Current	• 300 µA at 264 VAC/60 Hz max 110/190 µA 115/230 VAC at 50 Hz and 0.5/1.1 mA 115/230 VAC at 400 Hz typ.
Input Protection	• Internal T5.0 A/250 V fuse in line and neutral

Output

Output Voltage	• 12-48 VDC (see tables)
Output Voltage Trim	• ±5%
Initial Set Accuracy	• ±1% V1, ±3% V2
Minimum Load	• No minimum load required
Start Up Delay	• Typically 1 s[2]
Start Up Rise Time	• 50 ms typical
Hold Up Time	• 16 ms min at 115 VAC
Drift	• ±0.2% after 20 min warm up
Line Regulation	• ±0.5% max
Load Regulation	• ±1% V1, ±5% V2 max
Over/Undershoot	• 5% typical
Transient Response	• 4% max. deviation, recovery to within 1% in 500 µs for a 50-75-50% load change
Ripple & Noise	• 1% pk-pk V1, V2 2%, 20 MHz bandwidth
Overvoltage Protection	• 115-140% Vnom, recycle input to reset
Overload Protection	• 110-150% V1 only (see longform datasheet for further details)
Short Circuit Protection	• Continuous trip and restart (hiccup mode)
Temperature Coefficient	• 0.05%/°C
Remote Sense	• Compensates for 0.5 V total voltage drop
Remote On/Off	• Uncommitted isolated optocoupler diode, powered diode inhibits V1

General

Efficiency	• 88% typical
Isolation	• 4000 VAC Input to Output, 1500 VAC Input to Ground, 500 VDC Output to Ground
Switching Frequency	• 70 kHz typical
Signals	• Power OK - open collector, Remote On/Off, 5 V Standby (see longform datasheet for further details)
Power Density	• 3.91 W/in^3
MTBF	• 236 kHrs to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	• -40 °C to +75 °C ambient. Baseplate must be maintained ≤+85 °C, see longform datasheet for further details
Warm Up Time	• Typically 20 minutes
Cooling	• Baseplate, conduction cooling
Operating Humidity	• 95% RH, non-condensing
Storage Temperature	• -40 °C to +85 °C
Operating Altitude	• 3000 m
Shock	• 30 g pk, half sine, 6 axes
Vibration	• 2 g rms, 5 Hz to 500 Hz, 3 axes

EMC & Safety

Low Voltage PSU EMC	• EN61204-3, high severity level as below
Emissions	• EN55032 level B conducted EN55032 level A radiated
Harmonic Currents	• EN61000-3-2, class A
Voltage Flicker	• EN61000-3-3
Radiated Immunity	• EN61000-4-3, level 3 Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3 Perf Criteria A
Surge	• EN61000-4-5, installation class 3 Perf Criteria A, installation class 4 Perf Criteria A with optional filter board (-F), see longform datasheet for further details
Conducted Immunity	• EN61000-4-6, level 3 Perf Criteria A
Dips & Interruptions	• EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms, Perf Criteria A, B, B
Safety Approvals	• IEC60950-1:2005 Ed 2 / IEC62368-1:2014 UL 62368-1 & CAN/CSA C22.2 No. 62368-1-14, EN62368-1:2014/A11:2017, CE & UKCA meets all applicable directives & legislation.
Equipment Protection	• Class I

Notes

1. Safety approvals cover frequency 47-63 Hz.
2. At low temperature and low line voltage, start up time will increase.

Models and Ratings

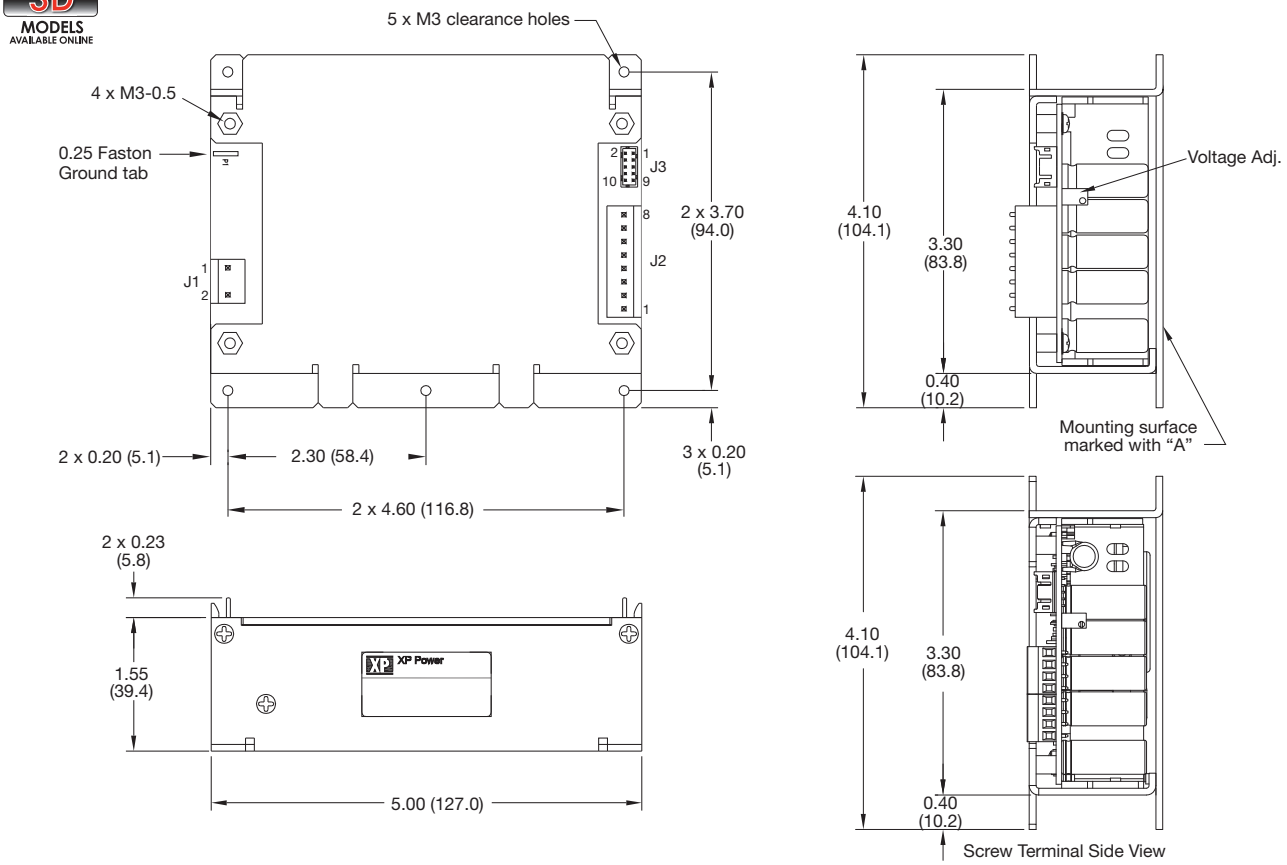
Output Power	Output Voltage V1	Output Current V1	Standby Supply V2	Model Number[1)]
100 W	12.0 VDC	8.1 A	5.0 V/0.5 A	ECC100US12
100 W	15.0 VDC	6.5 A	5.0 V/0.5 A	ECC100US15
100 W	24.0 VDC	4.1 A	5.0 V/0.5 A	ECC100US24
100 W	28.0 VDC	3.5 A	5.0 V/0.5 A	ECC100US28
100 W	48.0 VDC	2.0 A	5.0 V/0.5 A	ECC100US48

Notes

1. For optional surge filter add suffix '-F' to model number, e.g. ECC100US12-F. See longform datasheet for further details and mechanical drawings.
2. Add suffix -S for screw terminals on both input and output, consult sales for restrictions and availability.

Mechanical Details

3D MODELS AVAILABLE ONLINE



Output Connector J2 Molex PN 09-65-2088	
Pin	Single Output
1	+V1
2	+V1
3	+V1
4	+V1
5	RTN
6	RTN
7	RTN
8	RTN

J2 mates with Molex housing PN 09-50-1081 and both with Molex series 5194 crimp terminals.

Input Connector J1 Molex PN 09-65-2038	
1	Line
2	Neutral

J1 mates with Molex housing PN 09-50-1031.

Signal Connector J3 Molex PN B10B-PHDSS	
1	+5 V Standby
2	Logic GND
3	Logic GND
4	Power OK
5	Inhibit Hi
6	Inhibit Lo
7	+Sense
8	-Sense
9	+Vout
10	-Vout

J3 mates with JST housing PN PHDR-10VS and with JST SPHD-001T-P0.5 crimp terminals.

Notes

1. All dimensions in inches (mm).
2. Tolerance .xx = ±0.02 (0.50); .xxx = ±0.01 (0.25)
3. Weight 1.2 lbs (550 g)

Thermal Considerations

The baseplate must be maintained below +85 °C and therefore a suitable heatsink must be selected to remove the heat from the power supply. Details of heatsink calculations and other considerations can be found in the longform datasheet.