100 Watts
ECM Series



- Compact Size
- IT & Medical Approvals
- Convectioncooled
- Class I and II Construction
- DC Input Version Available (DCM Series)
- PoE Isolation Version Available (POE Series)
- 3 Year Warranty

Specification

Input

Input Voltage	• 90-264 VAC (120-370 VDC)
Input Frequency	• 47-63 Hz; 440 Hz*
Input Current	• 40 W: 0.4 A max at 230 VAC 60 W: 0.6 A max at 230 VAC 100 W: 0.9 A max at 230 VAC
Inrush Current	• 40 A max at 230 VAC
Earth Leakage Current	• <125 µA at 115 VAC/60 Hz <210 µA at 230 VAC/50 Hz
Power Factor	• EN61000-3-2
Input Protection	• Internal T3.15 A, 250 V fuse in line and neutral

Output

Output Voltage	• See tables
Output Voltage Trim	• ±5% on 3.3 V & 5 V versions, ±10% on other single output models and V1 of multi-output models. (See note 1 for ECM40/60 models)
Initial Set Accuracy	• ±1.0% V1, ±5% V2, V3 & V4
Minimum Load	• See tables
Start Up Delay	• 1.5 s max
Start Up Rise Time	• 10 ms max
Hold Up Time	• 16/75 ms min at 115/230 VAC
Line Regulation	• ±0.5%
Load Regulation	• ±1% single output models; ±3% V1, ±5% V2 & V3 ECM40/60 multi-output models. ±1% V1 & V2, ±5% V3 & V4 ECM100
Cross Regulation	• 2% on ECM40/60 only
Over/Undershoot	• None at turn on/off
Transient Response	• 4% max. deviation, recovery to within 1% in 500 µs for a 25% load change
Ripple & Noise	• 1% pk-pk, 20 MHz bandwidth
Overvoltage Protection	• 115-135% Vnom, recycle input to reset
Overload Protection	• 110-150% on primary power limit, auto recovery
Short Circuit Protection	• Trip and restart (hiccup mode)
Temperature Coefficient	• 0.05%/°C
Peak Load	• 120% for 100 ms ECM40/60 (see note 3)

* Safety approvals cover frequency range 47-63 Hz

General

Efficiency	• 80-85% depending on model
Isolation	• 4000 VAC Input to Output 2 x MOPP ECM100 single output models, 1 x MOPP ECM100 multi output and all ECM40/60 models (contact sales for 2 x MOPP), 1500 VAC Input to Ground 1 x MOPP, 500 VAC Output to Ground
Switching Frequency	• 70 kHz typical
Power Density	• 40 W: 4.2 W/In^3 60 W: 6.3 W/In^3 100 W: 7.4 W/In^3
MTBF	• 600 kHrs to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	• 0 °C to +70 °C. Refer to derating curves for specific operating limitations.
Cooling	• Convection & fan-cooled ratings (see derating curves)
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

Emissions	• EN60601-1-2, EN61204-3, FCC 20780, EN55022 & EN55011, level B conducted EN55022 Level A radiated
Harmonic Currents	• EN61000-3-2, class A
Voltage Flicker	• EN61000-3-3
ESD Immunity	• EN61000-4-2, level 3 Perf Criteria A
Radiated Immunity	• EN61000-4-3, 10 V/m Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3 Perf Criteria A
Surge	• EN61000-4-5, level 3 Perf Criteria A, SEMI F47
Conducted Immunity	• EN61000-4-6, 10 V Perf Criteria A
Dips & Interruptions	• EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms, Perf Criteria A, B, B EN60601-1, 30% 500 ms, 60% 100 ms, 100% 10 ms, 100% 5000 ms, Perf Criteria A, A (with 50% load), A, B
Safety Approvals	• EN60601-1, ANSI/AAMI ES60601-1, CSA22.2 No.60601-1 per cUL, Including Risk Management, EN60950-1, UL60950-1

Models and Ratings

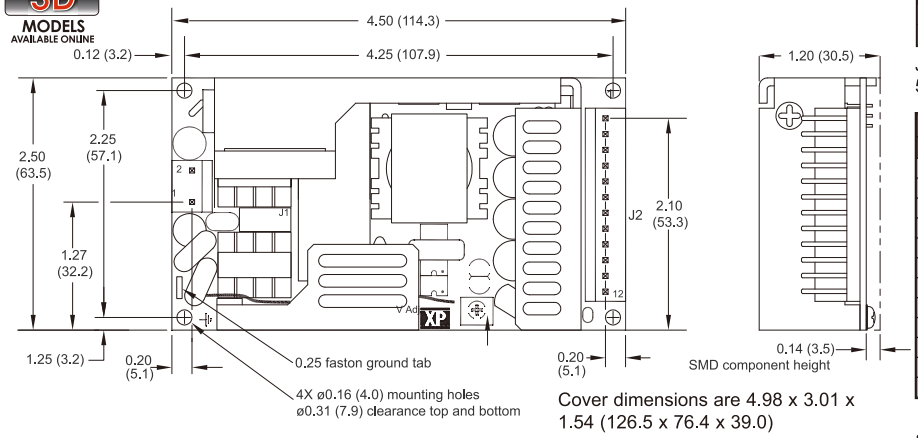
Single Output Models

Multi Output Models

Output Power		Output 1		Output 2		Output 3		Model Number (1)
Convection Cooled	Forced Air 5 CFM	Voltage	Current Min/Max	Voltage	Current Min/Max	Voltage	Current Min/Max	
75 W	100 W	+5.0 V	0.5 A/10.0 A	+12.0 V	0.0 A/3.0 A	-12.0 V	0.0 A/0.8 A	ECM100UT31
80 W	100 W	+5.0 V	0.5 A/10.0 A	+15.0 V	0.0 A/3.0 A	-15.0 V	0.0 A/0.8 A	ECM100UT33

Mechanical Details

3D MODELS AVAILABLE ONLINE



Cover dimensions are 4.98 x 3.01 x 1.54 (126.5 x 76.4 x 39.0)

Input Connector J1	
Pin 1	Line
Pin 2	Neutral

J1 mates with Molex housing 43061-0003 and Molex series 5194 crimp terminals. Ground (0.25 faston) tab standard.

Output Connector J2		
Pin	Single	Multi
1	V1	+V1
2	V1	+V1
3	V1	+V1
4	V1	+V1
5	V1 RTN	RTN
6	V1 RTN	RTN
7	V1 RTN	RTN
8	V1 RTN	RTN
9	NOT USED	+V2
10	NOT USED	+V2
11	NOT USED	±V3
12	NOT USED	-V4

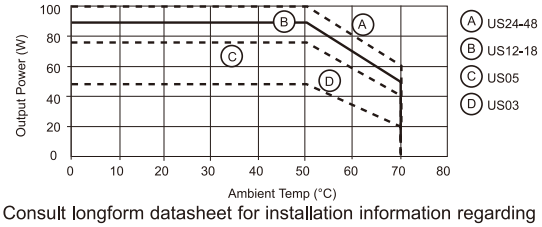
J2 mates with Molex housing 43061-0012 and Molex series 5194 crimp terminals.

Notes

1. All dimensions in inches (mm). Tolerance .xx = ±0.02 (0.50); .xxx = ±0.01 (0.25)
2. Weight: 0.4 lbs (180 g) approx.
3. Cable harnessess with 300 mm wire available. For single output models, order part number ECM100S LOOM For multi-outputs (dual and triple output only), p/n ECM100DT LOOM.
4. Mating connector kit available for single output models. Order part number ECM100S CONKIT.
5. Covers available. Order part number ECM100 COVER.
6. Available in a 3" x 5" footprint for OEM quantities. Contact sales for details.
7. 3D drawing files available from www.xppower.com/cad.php.

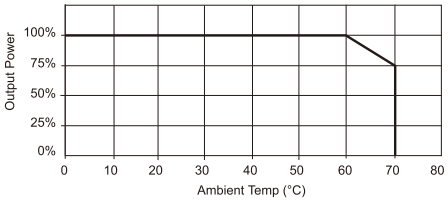
Derating Curves

All ECM100 single output models convectioncooled



Note:
1. Derate by 10% if cover is fitted.
2. For multi output convection-cooled operation above +50 °C derate linearly to 50% at +70 °C.

All ECM100 models with 5 CFM



Consult longform datasheet for installation information regarding optimum thermal ratings in convection-cooled applications.