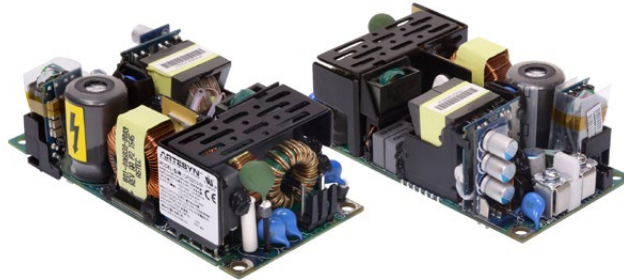


CPS250-M Series

250 Watt AC-DC Power Supplies

Data Sheet

Total Power: 250 Watts
Input Voltage: 90 - 264 V
of Outputs: Single



SPECIAL FEATURES

- Designed for forced air and natural convection cooling
- Medical and ITE safety approvals, 2x MOPP
- Dual fused
- Type BF ready
- Active Power Factor Correction, 61000-3-2 compliant
- Built-in Class B EMI filter
- Less than 1U high
- LPX100 enclosure kit available
- <500 mW no-load power consumption
- Three-year warranty (consult factory for extended terms)

SAFETY

- EN 60950-1 / 60601-1
- UL 60950-1 / 60601-1
- CSA
- CE LVD Mark
- CCC

Electrical Specifications

Input	
Input voltage range	90 - 264 Vrms
Frequency	47 - 63 Hz (360 - 440 Hz with higher leakage)
Inrush current	70 Apk, < 1 ms, cold start
Efficiency	93% typical
Leakage current	Specified for medical approvals
No load power	< 500 mW
Output	
Maximum power	250 W, forced-air cooling 155 W, free-air natural convection
Adjustment range	-0% / +10%
Holdup time	10 ms @ 225 W
Fan output	12 V @ 500 mA
Standby output	5 V @ 100 mA (on -M1 models only)
Control and Protection	
Remote On/Off	Option (on -M1 models only)
DC OK	Option (on -M1 models only)
Overload protection	Auto-recovery
Overtemperature protection	Auto-recovery with hysteresis

Environmental Specifications

Operating temperature	-20 °C to +70 °C (derate at 50 °C), startup at -40 °C
Storage temperature	-40 °C to +85 °C
Operating humidity	5% to 90% (non-condensing)
Non-operating humidity	5% to 95% (non-condensing)
Maximum altitude	5000 m (3000 m for medical), derating may apply

Other Specifications

Isolation	4000 Vac (input to output) 1500 Vac (input to PE; output to PE)
Line harmonics	61000-3-2, Class A
Conducted EMI ⁶	Level B, CISPR 22 and FCC Part 15
Radiated EMI ⁶	Level B, CISPR 22 and FCC Part 15
Surge immunity	Level 3, 61000-4-5, Criterion A
Medical EMC	60601-1-2, Edition 4 (cover may be required for some tests)

Pin Assignments

Connector	Pin Number	Designation	Mating Connectors
J5 (AC Input)	1 3 Mounting Holes	AC Input L1/Line AC Input L2/Neutral PE	Molex 09-50-8031 housing with 45570-3000 crimp or equivalent. Use AWG 20-18 wires.
J0 (DC Output)	1 2 3 4 5 6	Main Output Return Main Output Return Main Output Return Main Output Main Output Main Output	Molex 09-50-8061 housing with 45570-3000 crimp or equivalent. Use AWG 20-18 wires.
BusBarr (DC Output) <i>Applies to 12 V variant only.</i>	1 2	Main Output Main Output Return	Ring terminal: Tyco 35148 or KST RV3-4 or equivalent.
J2 (Fan Supply)	1 2	Fan Return Fan Voltage	Cvilux CI0102S0000 housing; CI01T01MPP0 crimp; AWG 30-24.
SKZ <i>(For -M1 suffix models only)</i>	1 2 3 4 5	5 Vdc Standby Standby Return Remote Inhibit DC OK VFB (feedback loop pin)	Molex 504193-0500 with 504185-1000 crimp or equivalent. Use AWG 30-26 wires.

Ordering Information

Model number	Output voltage	Minimum load	Max. Continuous Load (Free Air)	Peak Load (Free Air) ¹	Max. Continuous Load (Forced Air) ²	Regulation ³	Ripple (p-p) ⁴
CPS253-M	12 V	0 A	12.92 A	15.5 A	20.83 A	±2%	120 mV
CPS255-M	24 V	0 A	6.45 A	7.74 A	10.42 A	±2%	240 mV
CPS256-M	36 V	0 A	4.30 A	5.16 A	6.94 A	±2%	360 mV
CPS258-M	48 V	0 A	3.23 A	3.88 A	5.21 A	± 2%	480 mV

¹ Peak Load current not to exceed 30 seconds with maximum 10% duty cycle.

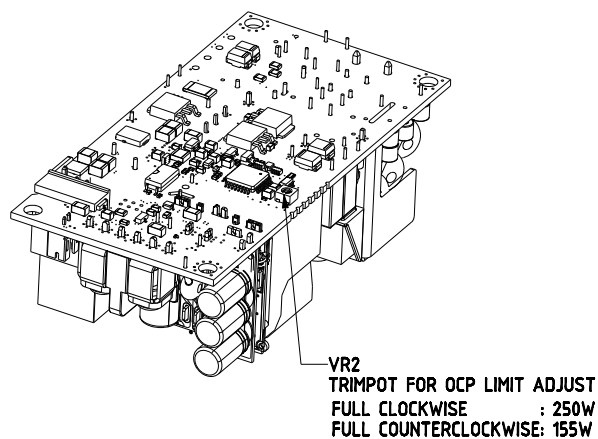
² Requires at least 300 LFM of airflow.

³ At 25 °C including factory setpoint, Line voltage and Load current variations.

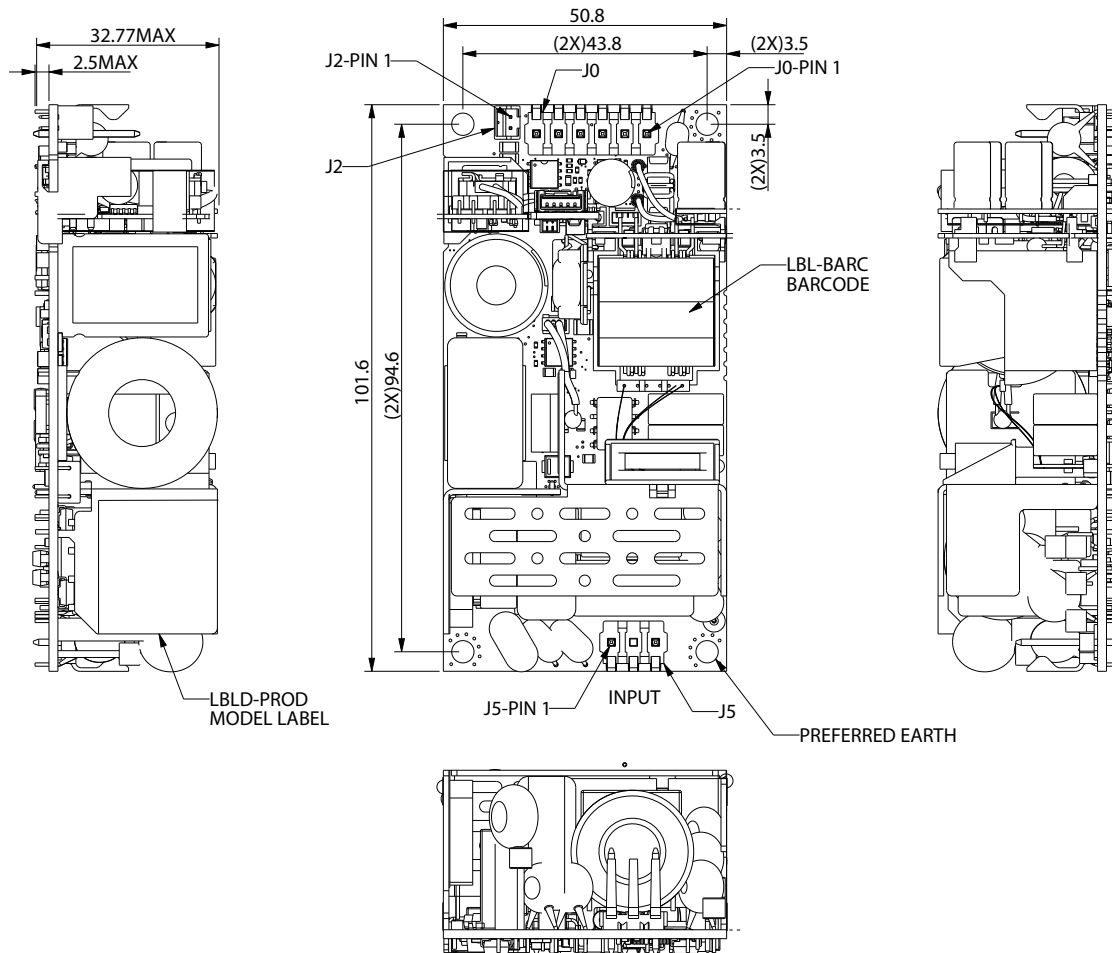
⁴ Peak to peak ripple measured at the output terminals with 10µF tantalum capacitor in parallel with 0.1µF ceramic capacitor across the output & at 25 °C and output load ≥ 6W.

⁵ Add Suffix "1" to model number for optional features (described as "-M1 models only" on previous sections).

⁶ Applies to Class I input with ground tabs tied to a common ground plane and connected to system ground. Consult Technical Reference Notes for details.



Mechanical Drawings - 24 V, 36 V, 48 V Variants



Output Power Derating

Output Power Derating

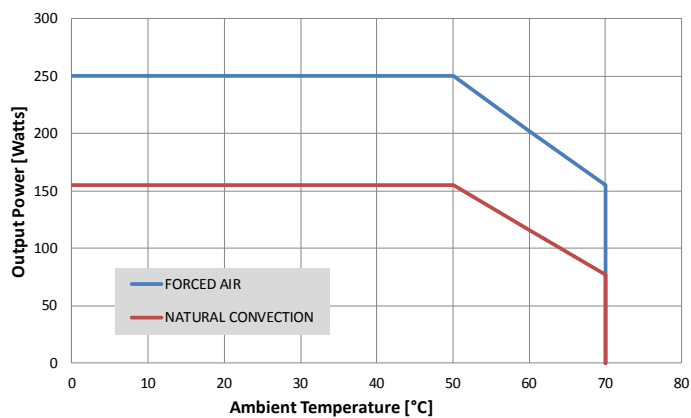


Figure 1. Output Power vs. Ambient Temperature at Natural Convection and Forced Air Cooling [300 LFM].

Output Power VS. Input Line

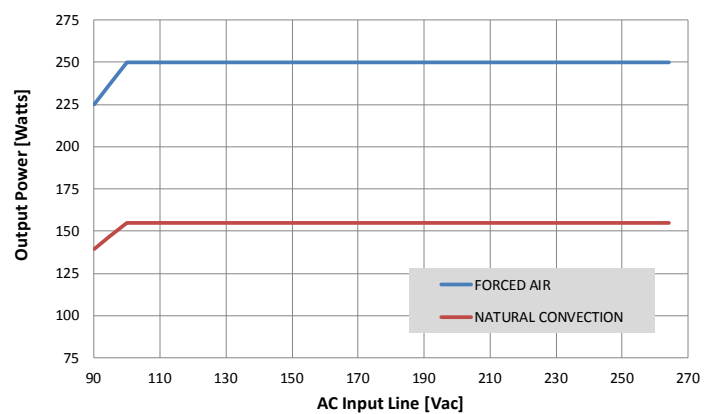


Figure 2. Output Power vs. Input Line at Natural Convection and Forced Air Cooling [300 LFM].

Efficiency Curves

CPS253-M (12 V) Efficiency Curve

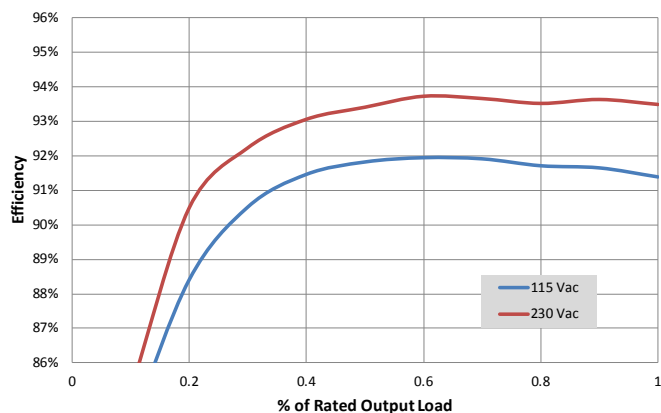


Figure 3. Typical Efficiency for 12 V Output

CPS255-M (24 V) Efficiency Curve

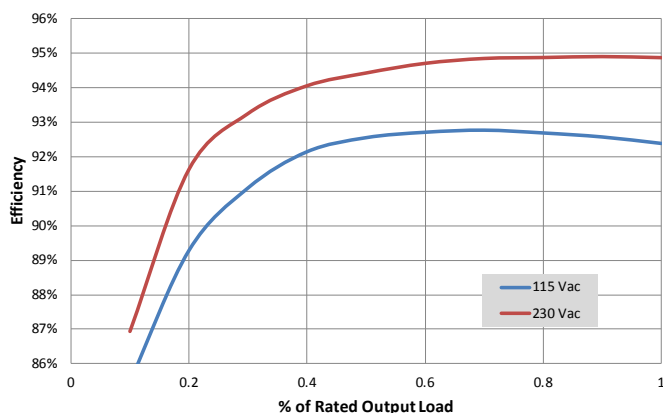


Figure 4. Typical Efficiency for 24 V Output

TBD

CPS258-M (48 V) Efficiency Curve

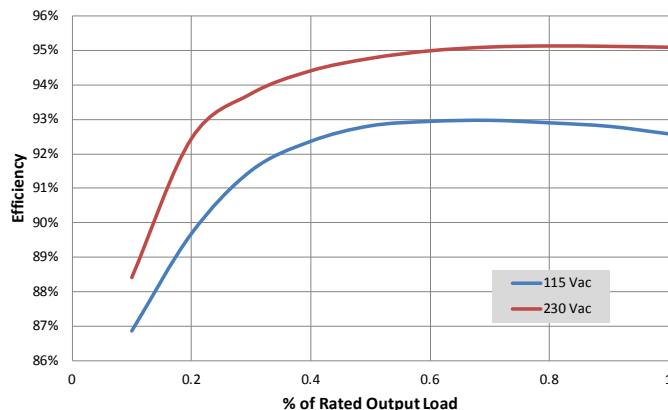


Figure 5. Typical Efficiency for 36 V Output

Figure 6. Typical Efficiency for 48 V Output

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