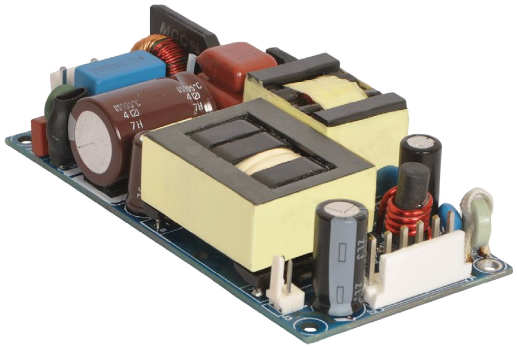
225 Watt Industrial



Features

- 4 x 2 x 1 Inches Form factor
- 225 Watts with Forced Air Cooling
- Efficiencies upto 94%
- -40 to 70 degree operating temperature*
- 12V / 0.5A Fan Output, Thermal Shut-Down feature
- 3.37m Hours, Telcordia -SR332-issue 3 MTBF
- No Load Power < 0.5W

Electrical Specifications

Input Voltage	85-264 VAC/390 VDC, Universal (Derate from 100% at 100V AC to 95% at 85V AC)
Input Frequency	47–63 Hz
Input Current	115 VAC: 2.2 A max. 230 VAC: 1.1 A max.
No Load Power	less than 0.5W typical
Inrush Current	115 VAC – 25 A, 230 VAC – 45 A, 264 VAC – 75 A
Leakage Current	300 uA Typical, (N.A. For Class II Option) Touch current <100uA
Efficiency	94%(48V), 93%(24V,30V), 92%(12V,15V)
Hold-up Time	at 225W:10 ms ; 110W: 16 ms
Power Factor	exceeds 0.95 with Full Load
Output Power	225W with 13 CFM, upto 120W Convection
Line Regulation	+/-0.5%
Load Regulation	+/-0.5%
Transient Response	25% step load change, at 0.1A/uS slew rate, 50% duty cycle, 50Hz=4% , recovery time < 5 ms
Rise Time	55ms typical
Set Point Tolerance	+/–1%
Output Voltage Adjustment	+/-3% (Ref. Note 8)
Over Current Protection	>110%
Over Voltage Protection	110 to 140%
Short Circuit Protection	Hiccup mode
Switching Frequency	PFC – 70 to 130 KHz ,PWM – 50-80 KHz
Operating Temperature[7]	- 40 to +70°C, * -40 to 0°C startup is guaranteed with spec deviation
Storage Temperature	–40 to +85°C
Relative Humidity	5% to 95%, noncondensing
Altitude	Operating: 16,000 ft.; Nonoperating: 40,000 ft.
MTBF	3.37m Hours, Telcordia -SR332-issue 3
Isolation Voltage	Input to Output – 3000V AC for ITE application
	Input to GND - 1500 VAC (Not Applicable For Class II Option)
Cooling	225W with 13 CFM forced air cooling[6] (refer Mechanical Drawing) upto 120 W with natural convection cooling[6] (refer Derating Curve)

Model Number	Description	Voltage	Max. Load (Convection) (121.85W)	Max.Load (Convection) (130W)	Max. Load (200 LFM) (185W)	Max.Load (13 CFM / 500 LFM)	Min. Load	Ripple[1]
LFWLP225-1001	**with Screw Terminal**	12 V	10.15A	10.83A	15.41A	18.75A	0.0 A	1%
LFWLP225-1301	**with Molex Connector**	12 V	10.15A	10.83A	15.41A	18.75A	0.0 A	1%
LFWLP225-1002	**with Screw Terminal**	15 V	8.12A	8.67A	12.33A	15A	0.0 A	1%
LFWLP225-1302	**with Molex Connector**	15 V	8.12A	8.67A	12.33A	15A	0.0 A	1%
LFWLP225-1003	**with Screw Terminal**	24 V	5.08A	5.42A	7.70A	9.37A	0.0 A	1%
LFWLP225-1303	**with Molex Connector**	24 V	5.08A	5.42A	7.70A	9.37A	0.0 A	1%
LFWLP225-1004	**with Screw Terminal**	48 V	2.54A	2.71A	3.85A	4.68A	0.0 A	1%
LFWLP225-1304	**with Molex Connector**	48 V	2.54A	2.71A	3.85A	4.68A	0.0 A	1%
LFWLP225-1005	**with Screw Terminal**	30 V	4.06A	4.33A	6.16A	7.5A	0.0 A	1%
LFWLP225-1305	**with Molex Connector**	30 V	4.06A	4.33A	6.16A	7.5A	0.0 A	1%
LFWLP225-1006	**with Screw Terminal**	58 V	2.10A	2.24A	3.19A	3.88A	0.0 A	1%
LFWLP225-1306	**with Molex Connector**	58 V	2.10A	2.24A	3.19A	3.88A	0.0 A	1%
LFWLP225-CK metal cover kit accessory								

Connectors		
J1	Pin 1	AC LINE
	Pin 2	NOT FITTED
	Pin 3	AC NEUTRAL
J2 Option 1 & 2	Pin 1,2,3	V1 +VE
	Pin 4,5,6	V1 -VE
J3	Pin 1	FAN +VE
	Pin 2	FAN -VE

Notes

1. Ripple is peak to peak with 20 MHz bandwidth and 10 μF (Electrolytic capacitor) in parallel with a 0.1 μF capacitor at rated line voltage and load ranges.
2. Class II version available. Add "-II" suffix at the end of the Model Number to Order.
3. Combined output power of main output, fan supply shall not exceed max. Power rating.
4. Fan supply output voltage tolerance including set point accuracy, line and load regulation is +/-15 % and Ripple and noise is less than 10 %. With V1 fully loaded, Vfan need to have min load of 20mA to be within regulation band.
5. Specifications are for nominal input voltage, 25°C unless otherwise stated.
6. 225W with 13CFM forced air cooling and 120W with natural convection cooling at 100 to 264VAC.
7. Output ripple can be more than 10% of the output voltage.
8. Adjustment potentiometer is located on the SMT side of the PCB.
9. When used in Cover Kit, de-rate output power to 70 % under all operating conditions

Mechanical Specifications

AC Input Connector (J1)	Molex: 26–60–4030 Mating: 09–50–3031; Pins: 08–50–0106
DC Output Connector (J2) Option 1 (Screw Terminal)	Molex: 39357 Series or equivalent
DC Output Connector (J2) Option 2 (Molex Connector)	Molex: 26-60-4060 Mating: 09-50-3061; Pins: 08-50-0106
Aux (Fan) Output(J3)	AMP :640456-2 Mating: 640440-2
Dimensions	4 x 2 x 1 inches (101.60 x 50.8x 25.4 mm)
Weight	200 gm approx

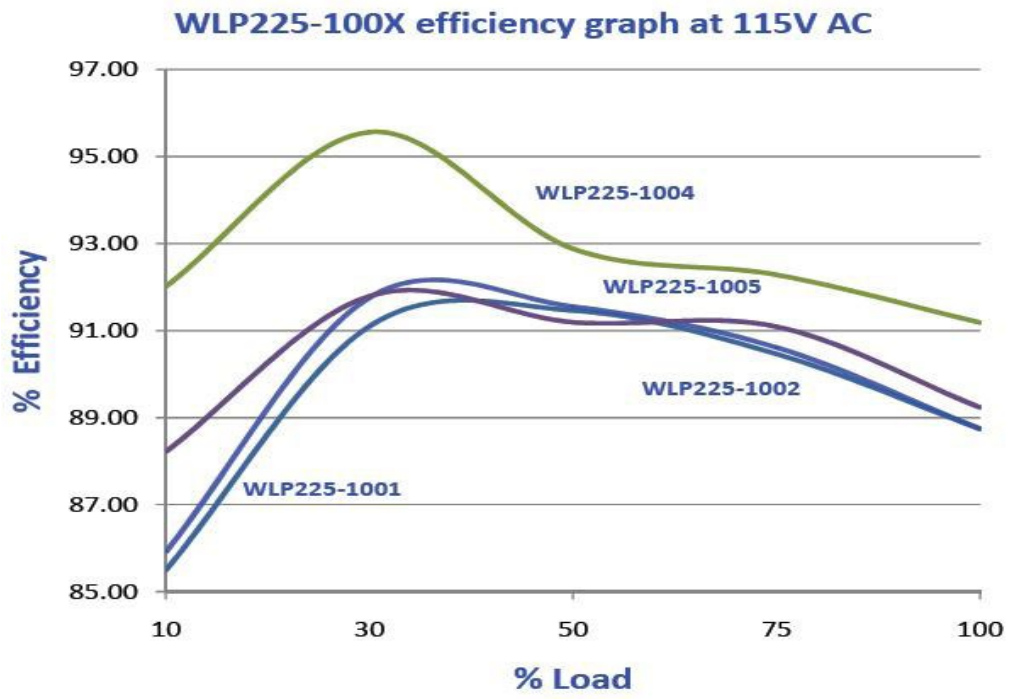
EMC

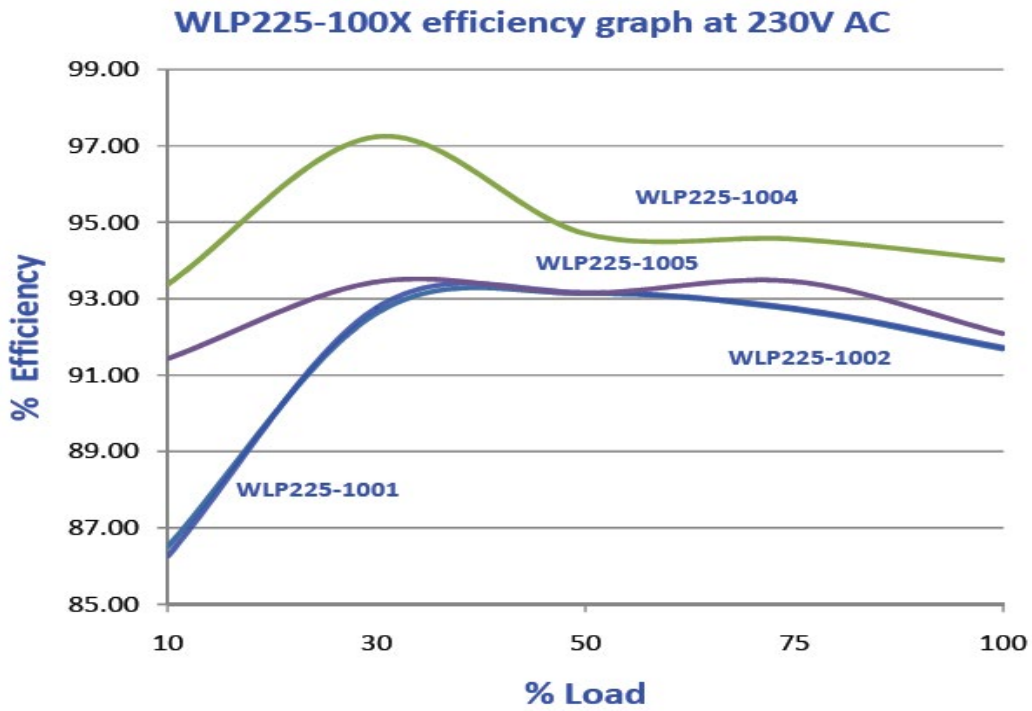
Parameter	Conditions/Description	Criteria
Conducted Emissions	EN55032-B, CISPR22-B, FCC PART15-B	Pass
Radiated Emissions	EN 55032 A	Pass Level B with external core (King core K5B RC 25x12x15-M in input cable)
Input Current Harmonics	EN 61000-3-2	Class D
Voltage Fluctuation and Flicker	EN 61000-3-3	Pass
ESD Immunity	EN 61000-4-2	Level 3, Criterion A
Radiated Field Immunity	EN 61000-4-3	Level 3, Criterion A
Electrical Fast Transient Immunity	EN 61000-4-4	Level 3, Criterion A
Surge Immunity	EN 61000-4-5	Level 3, Criterion A
Conducted Immunity	EN 61000-4-6	Level 3, Criterion A
Magnetic Field Immunity	EN 61000-4-8	Level 3, Criterion A
Voltage dips, interruptions	EN 61000-4-11	Criterion A & B

Safety

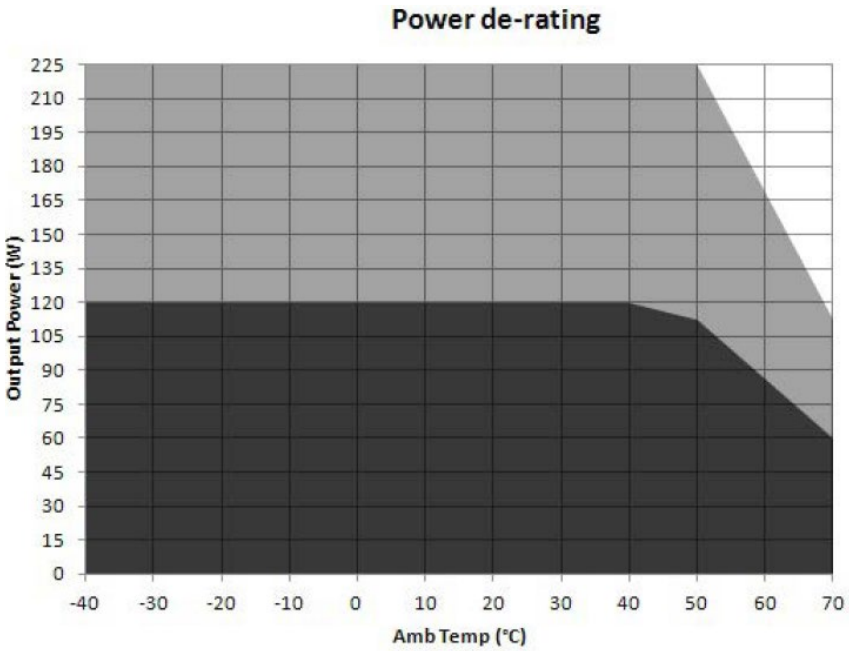
CE Mark	Complies with LVD Directive
Approval Agency	Nemko, UL, C-UL , CCC
Safety Standard(s)	EN60950-1, IEC60950-1 (ed.2) , UL 60950 (ed.2), CSA C22.2 No.60950-1 (ed.2), Class1 SELV , IEC 62368-1:2018 , GB4943. 1-2011 ; GB9254-2008 ; GB17625. 1-2012
Safety File Number(s)	Class-I : Nemko: Certificate No. P14219072, CB Certif. No.:NO110371 Class-II : Nemko: Certificate No. P14219134, CB Certif. No.NO83790 UL: Certificate Number 20141217-E150565

Efficiency Graph





Derating Curve

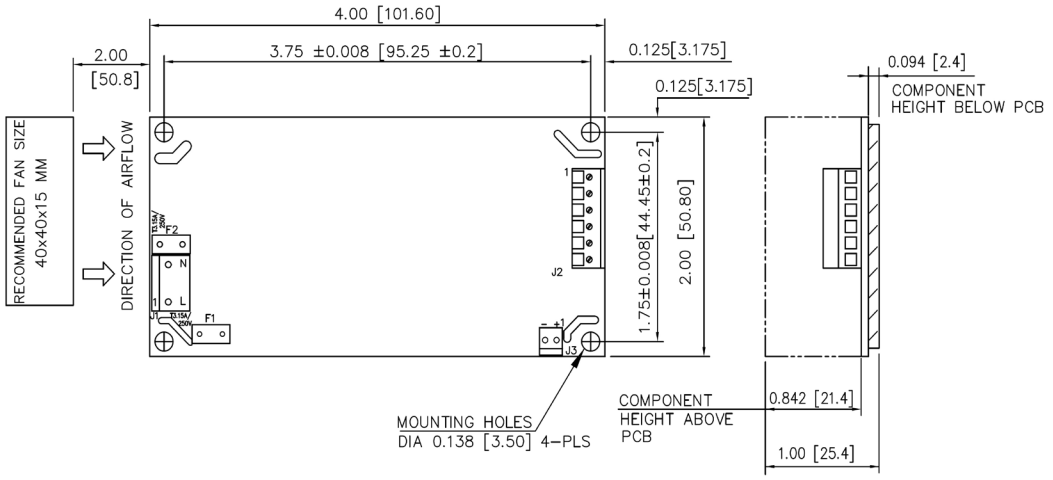


Convection load: 120W up to 40 °C
De-rate between 40-50 °C @ 0.625% per °C
De-rate above 50 °C @ 2.33% per °C

Forced air cooled load : 225W up to 50°C
De-rate above 50 °C @ 2.5% per °C

Mechanical Drawing

Option 1

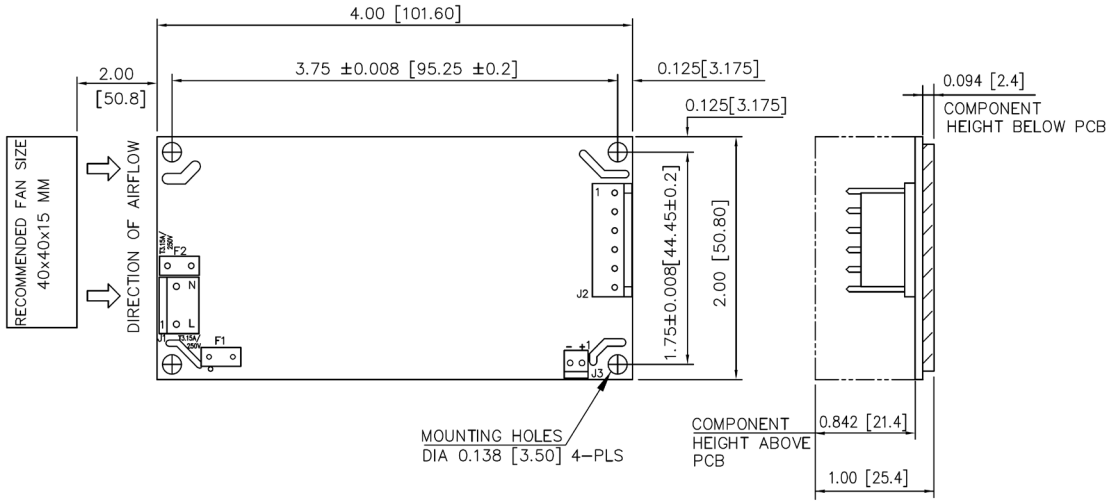


MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
GEN TOLERANCE :+/−0.04 [+/−1.0MM]

Notes: In case the PCB is mounted in a metal enclosure, using metal hardware ensure the following
1. Stand off, used to mount PCB has OD of 5.4 mm max.
2. Screws, used to fix PCB on stand off, have head dia of 6.0 mm max.
3. Washer, if used, to have dia of 6.5 mm max.

Mechanical Drawing

Option 2



MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
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