

Features

90–264V AC / 127–370V DC
 Wide Input
 No-Load Consumption $\leq 0.5W$
 4000V Isolation Voltage
 Class I And Class II Applications
 -40°C to +70°C Operation
 SCP, OVP, OCP, OTP
 4 x 2" compact size
 3 Year Warranty

64CLB-225x-yP Series

225W Industrial AC/DC Power Supply (PSU)



Image for illustration purposes only.



Description

The 64CLB-225x-yP is a 225W industrial AC/DC power supply on a 4 x 2 inch footprint, supplied as an open frame, baseplate or fully cased assembly under one series number. It is suitable for both Class I and Class II end products, so the same part can be designed in whether or not the end equipment provides a protective earth. A fan auxiliary output is provided, and the output voltage is adjustable across a defined range.

Certified to CE, cULus, CCC and CB, and built to IEC/EN 62368-1, UL 62368-1, CAN/CSA C22.2 No. 62368-1:19 and GB 4943.1, with EMC to EN 55032 and the EN 61000 immunity series, and RoHS compliant. These are primarily used in industrial control systems, mechanical and electrical equipment, electronic instruments, automation machinery, semiconductor equipment and ageing equipment, and customised solutions are available upon request.

Part Number Breakdown

64CLB	225	x	y	P
Series Name	Output Power	Appearance Style: (blank): Open Frame B: Baseplate C: Case	Output Voltage	Power Factor Correction

Models

Part Number	Output Voltage (V DC)	Adjustment Range (V DC)	Output Power (W) Conv. / 13CFM		Output Current (A) Conv. / 13CFM		Ripple & Noise (mV)	Efficiency (Typ. %)	Max. Capacitive Load (µF)
64CLB-225x-12P	12	11.7–12.6	140.4	225.00	0–11.7	0–18.75	100	93	6000
64CLB-225x-15P	15	14.7–15.8	139.5	225.00	0–9.30	0–15.00	100	93	5000
64CLB-225x-19P	19	18.6–19.95	140.6	224.96	0–7.40	0–11.84	100	93	3200
64CLB-225x-24P	24	23.5–25.2	140.4	225.60	0–5.83	0–9.40	100	94	3200
64CLB-225x-27P	27	26.4–28.4	140.4	225.45	0–5.20	0–8.35	100	94	2400
64CLB-225x-36P	36	35.2–37.8	140.4	225.00	0–3.90	0–6.25	100	94	2000
64CLB-225x-48P	48	47.0–50.4	139.2	225.60	0–2.90	0–4.70	120	94	1600
64CLB-225x-54P	54	52.9–56.7	140.94	225.72	0–2.61	0–4.18	120	94	1000

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	90V AC	-	264V AC	
Rated Input AC Voltage	100V AC	-	240V AC	
Input DC Voltage	127V DC	-	370V DC	
Input Frequency	47Hz	-	63Hz	
Input Current	-	-	2.6A	115V AC, full load
	-	-	1.3A	230V AC, full load
Power Factor	-	0.98	-	115V AC, full load
	-	0.95	-	230V AC, full load
Leakage Current	-	-	123.4µA	Earth, 230V AC / 50Hz.
	-	-	46.6µA	Touch, 230V AC / 50Hz.
Inrush Current	-	40A	-	115V AC, cold start
	-	70A	-	230V AC, cold start
No-Load Power Consumption	-	-	0.5W	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Voltage Tolerance	-1%	-	+1%	All models
Line Regulation	-0.5%	-	+0.5%	All models
Load Regulation	-0.5%	-	+0.5%	All models
Turn-on Delay Time	-	-	900mS	230V AC, full load
Rise Time	-	-	160mS	230V AC, full load
Hold-up Time	8mS	-	-	230V AC, full load
Fan Auxiliary Power Supply	-	24V / 0.25A	-	15V model, voltage accuracy $\pm 15\%$
	-	12V / 0.5A	-	12V, 19V, 24V, 27V, 36V, 48V and 54V models. Voltage accuracy $\pm 15\%$
Temperature Coefficient	-0.03%/°C	-	0.03%/°C	0 to 50°C

Protection

Parameter	Min.	Typ.	Max.	Notes
Overcurrent Protection	110% Io	-	180% Io	Hiccup mode. The output automatically returns to normal when the fault is cleared
Overvoltage Protection	110% Vo	-	140% Vo	Hiccup mode or latching protection. The output automatically recovers when the fault is removed
Over-Temperature Protection	-	70°C	-	The output shuts down and restarts automatically when the temperature returns to normal
Short-Circuit Protection	-	-	-	Hiccup mode protection. The supply automatically resumes normal output when the fault is cleared

Environmental Characteristics

Parameter	Min.	Typ.	Max.	Notes
Working Temperature	-40°C	-	+70°C	Refer to the Derating Curve graph
Working Humidity	20%RH	-	95%RH	Non-condensing
Storage Temperature	-40°C	-	+85°C	
Storage Humidity	10%RH	-	95%RH	Non-condensing
Altitude	-	-	5000m	Above 2000m the ambient temperature decreases by 0.5°C for every 100m increase in altitude
Vibration	-	-	-	10 to 500Hz frequency range, 2G acceleration, 10 minutes per sweep cycle, 6 sweep cycles along each of the X, Y and Z axes
Shock	-	-	-	20G acceleration, 11mS duration, 3 shocks along each of the X, Y and Z axes

Safety Standards

Parameter	Specification
Safety Standards	UL 62368-1, CAN/CSA C22.2 No. 62368-1:19, EN 62368-1, IEC 62368-1, GB 4943.1
Certifications	CE, cULus, CCC, CB, RoHS, REACH
Application Class	Suitable for Class I (with protective earth) and Class II (without protective earth) products. For Class I systems, positions 2 and 3 must be connected to protective earth
Dielectric Strength (Hi-pot)	Input to Output: 4000V AC Input to PE: 2000V AC Output to PE: 1500V AC Lasts for 60 seconds Leakage current <10mA
Insulation Resistance	Input to Output: 100MΩ Input to PE: 100MΩ Output to PE: 100MΩ Test Voltage: 500V DC

Electromagnetic Compatibility (EMC)

Parameter	Specification
Conducted Emission	EN 55032 Class B, FCC Part 15 (ANSI C63.4) Class B, GB/T 9254.1 Class B
Radiated Emission	EN 55032 Class B @ Class I & Class A @ Class II, FCC Part 15 (ANSI C63.4) Class B @ Class I & Class A @ Class II, GB/T 9254.1 Class B @ Class I & Class A @ Class II
Harmonic Current	EN 61000-3-2 Class A
Voltage Flicker	EN 61000-3-3
Electrostatic Discharge Immunity	EN 61000-4-2: air 15kV / contact 8kV, criteria B
Radio Frequency Electromagnetic Field Immunity	EN 61000-4-3: 80MHz to 1GHz, 10V/m, criteria A
Electrical Fast Transient / Burst Immunity	EN 61000-4-4: ±2kV, criteria B
Surge Immunity	EN 61000-4-5: Common Mode: ±2kV, Differential Mode: ±1kV, criteria B
Injected Currents Susceptibility	EN 61000-4-6: 10V RMS, criteria A
Power Frequency Magnetic Field Immunity	EN 61000-4-8: 30A/m continuous, criteria B
Voltage Dips and Short Interruptions Immunity	EN 61000-4-11: 100% drop for 0.5 period criteria B, 20% drop for 250 periods criteria B, 30% drop for 25 periods criteria B, 100% interruption for 250 periods criteria C

Reliability

Parameter	Min.	Typ.	Max.	Notes
MTBF	300,000h	-	-	25°C, MIL-HDBK-217F
Warranty		3 years		

General Specifications

Parameter	Notes
Output Terminal Type	JST VH-3.96 connectors
Input Connector	JST VH-3.96-3P on all three versions. Mating part JST VHR housing with JST SVH-21T-P1.1 terminals or equivalent
Output Connector	JST VH-3.96-6P on all three versions. Mating part JST VHR housing with JST SVH-21T-P1.1 terminals or equivalent

Weight & Dimensions

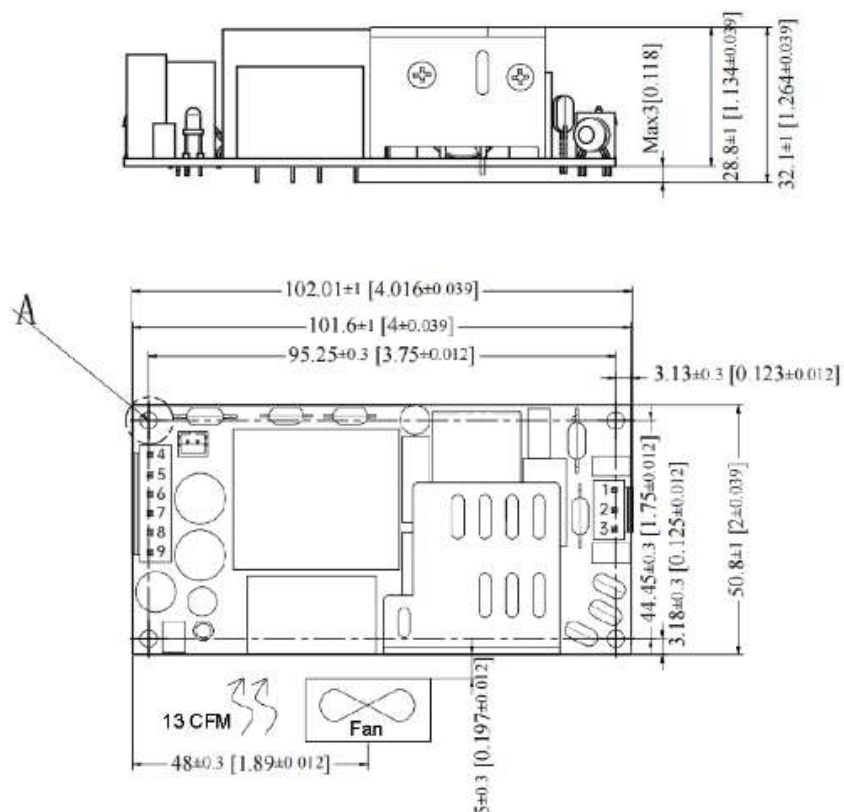
Parameter	Min.	Typ.	Max.	Notes
Dimensions, Open Frame	-	-	-	101.6 x 50.8 x 32.1mm (L x W x H)
Dimensions, Baseplate	-	-	-	103.4 x 62 x 34.8mm (L x W x H)
Dimensions, Case	-	-	-	103.4 x 62 x 40mm (L x W x H)
Net Weight	-	-	-	Open Frame 185g Baseplate: TBC Case: 252g

Packaging

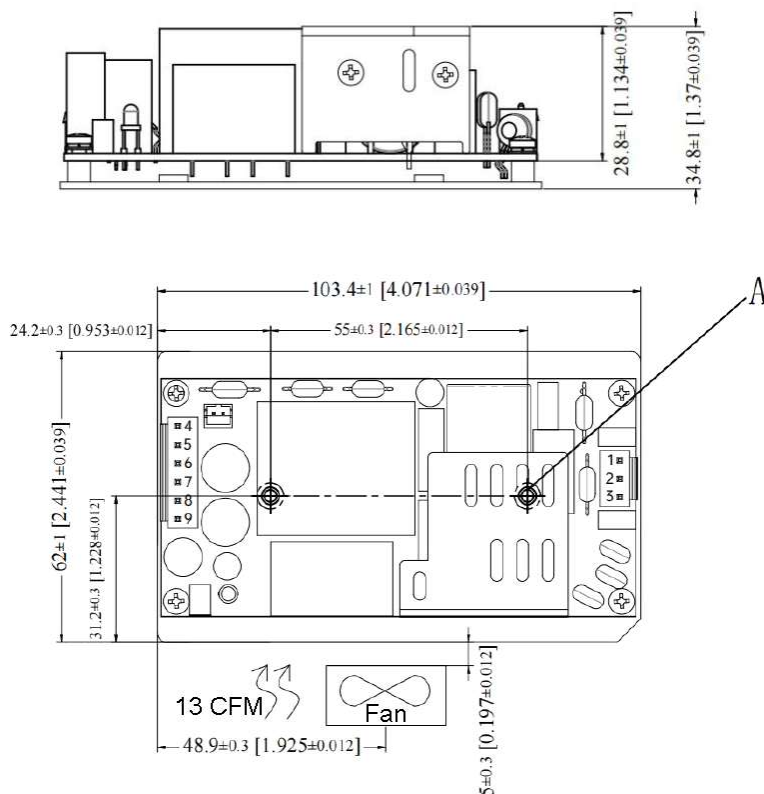
Parameter	Min.	Typ.	Max.	Notes
Open Frame Qty./Carton	-	60pcs	-	
Open Frame Carton Weight	-	16kg	-	
Open Frame Carton Size	-	-	-	505 x 460 x 210mm (L x W x H)
Baseplate & Cased Packaging Specs	-	-	-	TBC

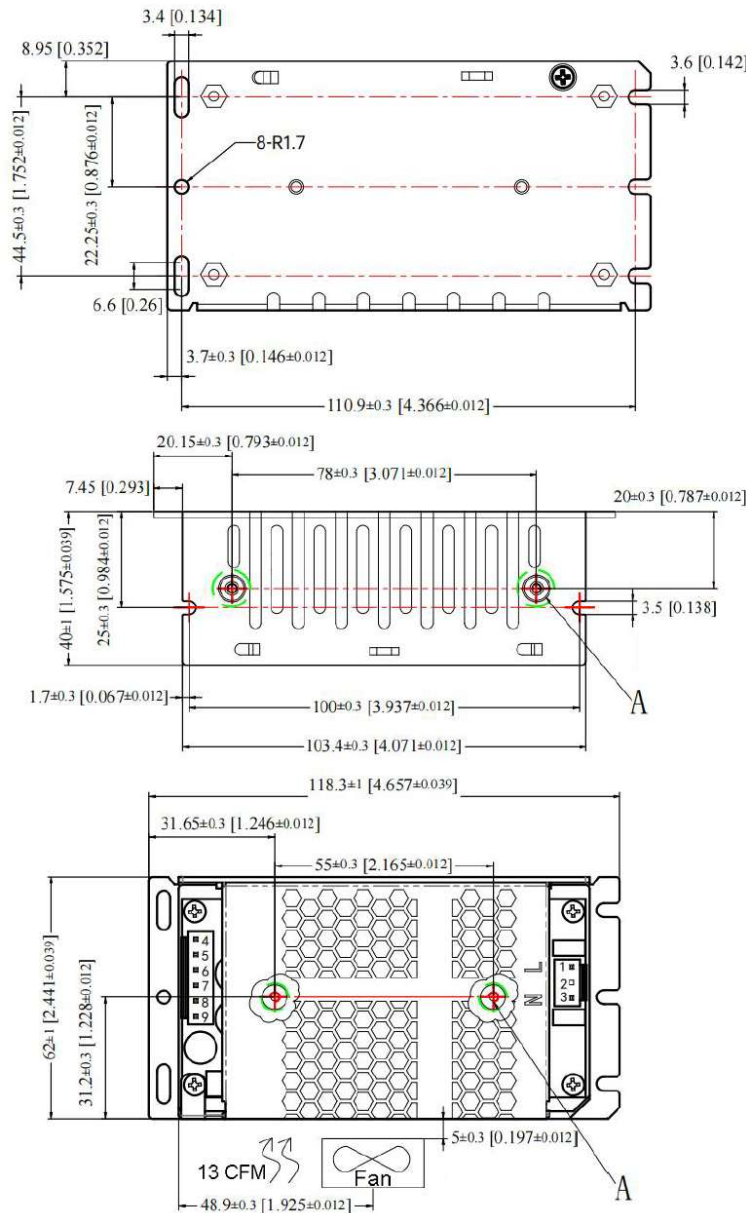
Mechanical Drawings

64CLB-225-yP:



64CLB-225B-yP:



64CLB-225C-yP:


Dimensions are in millimetres, bracketed values in inches; unspecified tolerances are ± 0.5 mm [± 0.020 in].

Keep a safe distance between the surface of the power supply and the customer system; more than 3mm is recommended. For Class I systems, positions 2 and 3 must be connected to PE.

Customer system mounting holes:

Cased: 4 x M3

Baseplate: 2 x M3

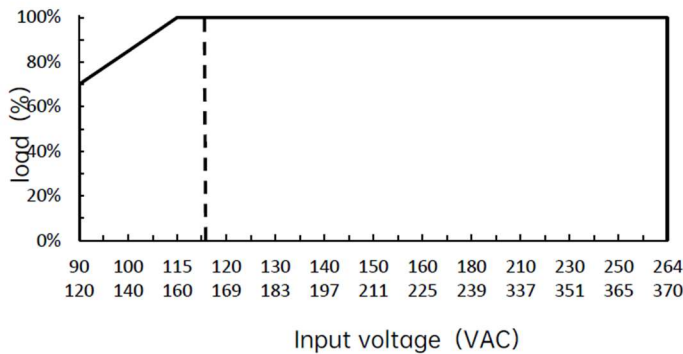
Open Frame: 4 x $\varnothing 3.5$ mm

M3 mounting screws, 4kgf x cm (0.4N x m) tightening torque, screw protrusion into the enclosure not more than 3mm.

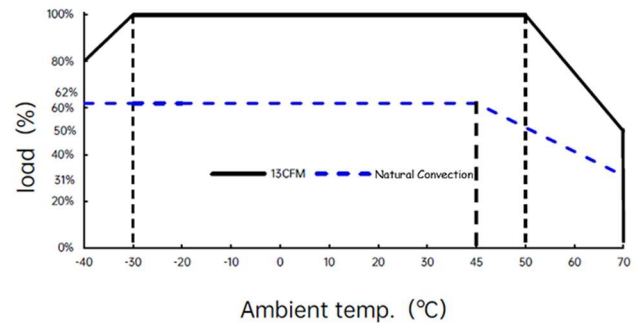
Pin	Definition	Product Connector	Client Connector
1	AC Line (L)	VH-3.96-3P connector	Connector: JST VHR Connector terminal: JST SVH-21T-P1.1 or equivalent
2	No Connection (NC)		
3	AC Neutral (N)		
4/5/6	DC Output Negative (V-)	VH-3.96-6P connector	Connector: JST VHR Connector terminal: JST SVH-21T-P1.1 or equivalent
7/8/9	DC Output Positive (V+)		

Performance Graphs

Input Voltage vs. Output Load



Ambient Temp. vs. Output Load



If more detailed test data needed during application, please contact Ideal Power to obtain application notes of related products.

Notes

1. Unless otherwise stated all parameters are measured at rated input voltage, full load and 25°C ambient temperature, and all dimensions are in millimetres. Efficiency figures in the Models table are typical at 230V AC input.
2. Ripple and noise are measured at the output terminals with a 47µF electrolytic capacitor in parallel with a 0.1µF high frequency capacitor at the end of the test leads, using 20±2 cm twisted pair test leads, an oscilloscope bandwidth of 20MHz and the probe cap and ground clip removed.
3. Under any steady state operating condition, the total output power must not exceed the rated output power. When the output voltage is increased the total output power must not exceed the rated output power; when the output voltage is decreased the output current must not exceed the rated output current.
4. The power supply is a component within the end system. All EMC testing is carried out with the sample installed on a metal plate 400mm long, 400mm wide and 3mm thick. Electromagnetic compatibility should be verified together with the end equipment.
5. The dielectric strength values are minimum values. Contact Ideal Power if a higher test level is required.
6. Conducted emissions: Both Class I (with PE) and Class II (without PE) products comply with Class B.
Radiated emissions: Class I (with PE) product complies with Class B; Class II (without PE) product complies with Class A.