

SWITCH MODE POWER SUPPLY BASED BATTERY CHARGERS



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Features

- Wide input voltage tolerance
- High efficiency
- Overload, short circuit & reverse polarity protection
- Very low load & line regulation
- Output power up to 480W
- Rugged, reliable and tropicalised design
- Work with natural convection cooling (No forced air cooling required)
- The operating temp. is -5° C to +55 ° C
- Input and output terminations and LED indications

Additional protection at the input

- Fuse (Slow Blow)
- Inrush current limit through NTC thermistor
- Transient / Surge voltage protection through MOV
- Common mode filter for EMI / EMC

Technical Specification

PARAMETER	SPECIFICATION
Input voltage range	90V to 270V, 160V to 270V AC 50Hz
Nominal output voltage	12V, 24V, 30V, 110V DC
Rated output current	1.2A, 2A, 4A, 5A, 8A, 10A, 15A and 20A
Output voltage regulation	0.5V
Switching frequency	130KHz
Efficiency	>80%
Ripple / Noise peak-peak	250mV without battery connected at the output
Min load condition	No min load requirement for voltage regulation or operation of the float charger
Input / output connector	PCB mounted terminal block
Storage Temp.	-20 ° C to +55 ° C
Operating Temp.	-5 ° C to +55 ° C
Humidity	95% RH
LED indications	1. AC mains present : Red LED 2. Output voltage present : Green LED
Protections	1. Fuse at the input (Slow Blow) 2. Isolation of 2KV between input & output 3. Protection against output short circuit 4. Protection against transient / surge at input through proper rated MOV'S 5. Over temperature protected, with auto restart.
Cooling	Natural convection

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Introduction

Prok dv's an ISO 9001-2008 Company manufactures SWITCH MODE POWER SUPPLY BASED BATTERY CHARGERS, In the brand name "Prok dv's ", incorporates state-of-the-art design methodologies for designing the SMPS. Different models are available with suitable voltage and current ratings. Safety and EMI standards are incorporated at crucial stages of the design. The transformer, diodes, capacitors inductors selected without compromise on the quality to increase the reliability of the unit. The units are placed in metal enclosures with provision for natural convection.

Principal of Operation

The design is based on the fly back topology. High switching frequency makes the components sizes to decrease, and hence reduction in the size. The efficiency of the unit is greater than 80%. The input voltage is applied to the transformer primary which is switched at high frequency controlled by the feedback. The feedback is incorporated using Opto - isolators. The output of the transformer is rectified using proper rectifier diodes. The output is further smoothened with the use of smoothing inductors to reduce the ripple to the desired level.

The Battery chargers provide both constant voltage (CV) charging below the rated current and constant current (CC) charging if the battery tries to draw more than the rated current. In CV mode, the output voltage is well regulated against line and load variations. The charger shall withstand a short at the output for any length of time without damage and will restore to normal once the short is removed.

The charger is protected against input over voltage, the output voltage is shutdown and restores automatically when the input voltage is within limits. The design incorporates overload and short circuit Protection.

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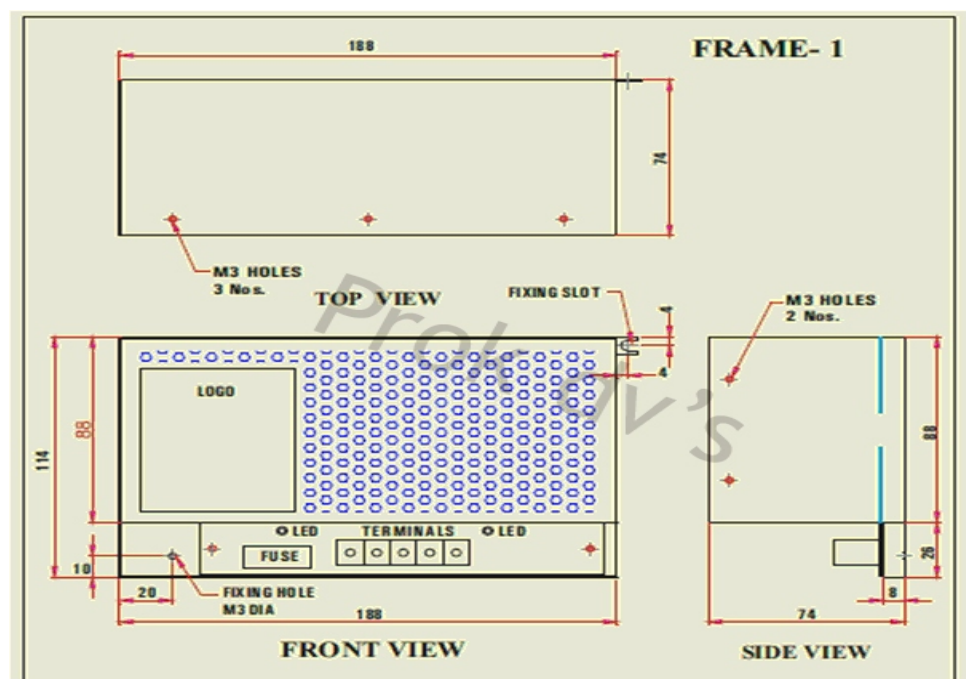
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Models

Product Code	Input Voltage Range(AC)	Output Voltage(DC)	Current (DC)
FRAME-1			
PDBC 9000	90V -270V	12 Volts	2 Amps
PDBC 9001	90V -270V	12 Volts	5 Amps
PDBC 9002	90V -270V	12 Volts	10 Amps
PDBC 9003	90V -270V	24 Volts	2 Amps
PDBC 9004	90V -270V	24 Volts	5 Amps
PDBC 9005	90V -270V	30 Volts	4 Amps
PDBC 9006	90V -270V	110 Volts	1.2 Amps
FRAME-2			
PDBC 9007	160V -270V	24 Volts	10 Amps
PDBC 9008	160V -270V	12 Volts	15 Amps
PDBC 9009	160V -270V	12 Volts	20 Amps
PDBC 9010	160V -270V	30 Volts	8 Am ps
FRAME-3			
PDBC 9011	160V -270V	24 Volts	15 Amps
PDBC 9012	160V -270V	24 Volts	20 Amps

Mechanical Dimensions Of SWITCH MODE POWER SUPPLY BASED BATTERY CHARGERS

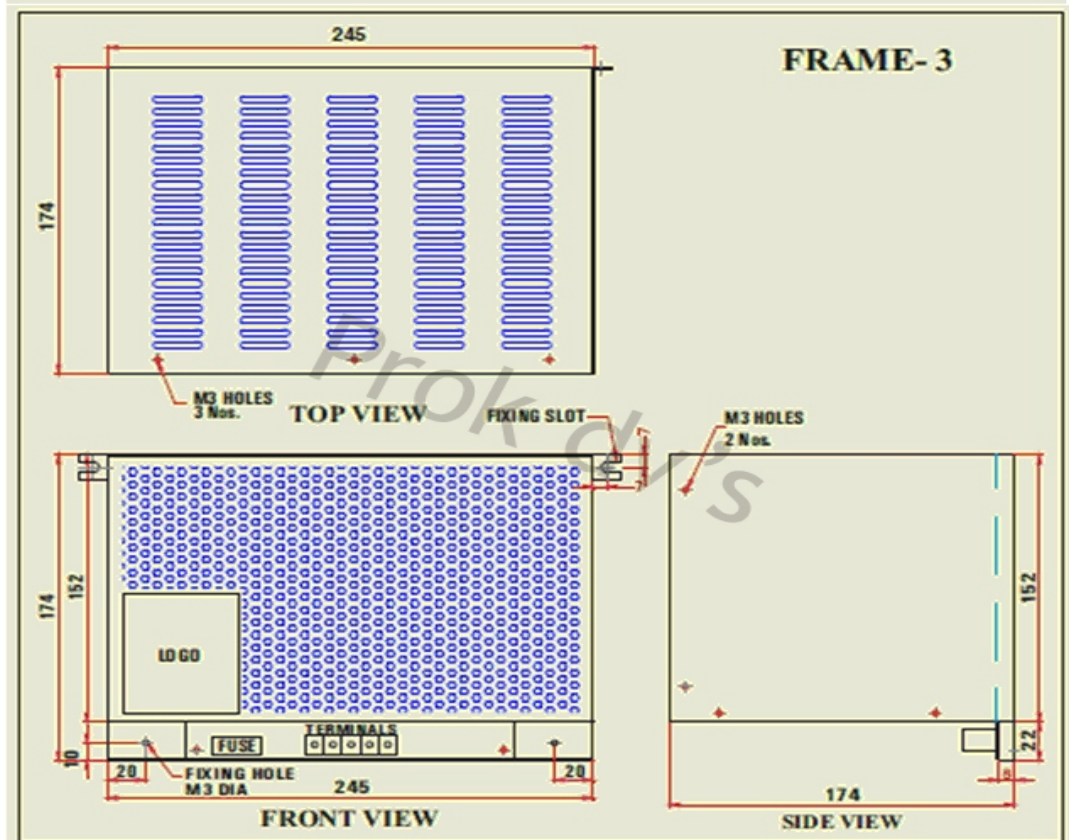
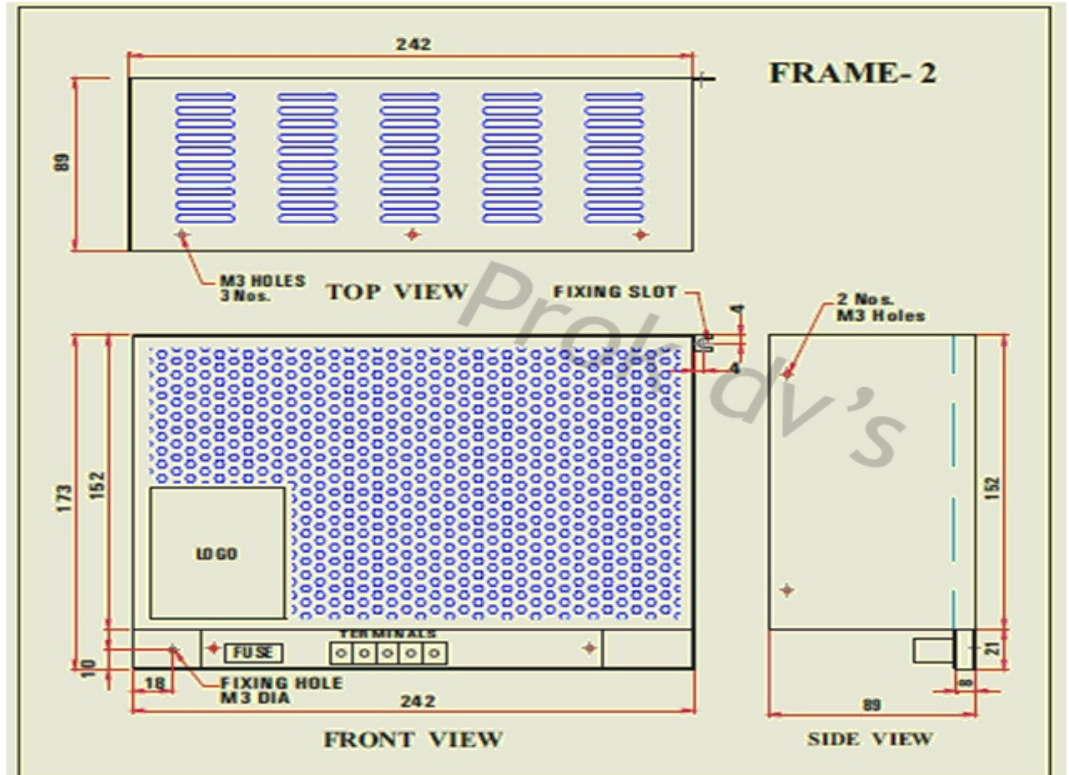


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PROK DEVICES PRIVATE LIMITED

B-80, 2nd & 3rd Floor, KSSIDC Industrial Estate
4th Main Road, 6th Block, Rajajinagar
Bengaluru-560010
Karnataka, India

Ph. No: 080-4148 0777 | 080-4115 7700
Fax: +91 80 26761720

For Marketing Information & Assistance
enquiry@prokdvs.com
marketing@prokdvs.com

For Product Information & Technical Details
info@prokdvs.com

For Service Information
service@prokdvs.com