RISH *BATTERY CHARGER*

Preliminary Datasheet

Switched Mode Multistage Charge Technology

RoHS CE

Input:

Universal single-phase Input

Efficiency up to 86%

Protections:

Short circuit, Overload, Over voltage, Reverse Polarity Connection, Over Temperature.

Features:

Switch Mode Technology

Automatic 3 Stage Charge Profile

Boost Charge Function

Reverse Polarity Protection with Fuse.

LED indicator for Power ON, Charging ON, Boost Mode, Charge Complete (Float Mode), Battery Reverse Connection.

Cooling by free air convection

DIN Rail Mounting

Compact size, 3 Year warranty

RISH *Elite* 120xx

Input Data

Nominal Input Voltage	**115/230 Vac**
Input Voltage range	**90 – 280 Vac** **127 – 396 Vdc**
Inrush Current (Vn and In Load) I^2t	**≤ 40 A ≤ 5 msec.**
Frequency	**45 – 65 Hz ±6%**
Input Current (115 – 230 Vac)	**2.8 – 1.5 A**
AC Input Fuse	**4 A**
Recommended DC Output Fuse	**See Table**

Output

Absorption Voltage (VA)	**See Table**
Boost Voltage (VA)	**See Table**
Float Voltage (VB)	**See Table**
Max. Charging Current (IA) at < 40°C	**See Table (In)**
Max. Charging Current (IA) at 50°C	**80% of In (permanent)**
Max. Charging Current (IA) at 60°C	**60% of In (permanent)**
End of charging current (IB)	**In X 0.32A ±10 %**
Turn-On delay after applying mains voltage	**2.5 sec. (max)**
Line regulation	**< ±0.1 %**
Residual Ripple	**≤ 120 mV_{pp}**
Efficiency	**≥ 86 %**
Short-circuit Protection	**Constant Current**
Short-circuit current	**Max 1.2 X In ±5%**
Dissipation power load max (W)	**20.5 W**
Over Load protection	**Constant Current**
Over Voltage Output protection	**Yes**
Parallel connection	**No**
Recommended Battery Capacity Range (Ah)	**See Table**
Charge Fail Contact rating (EN60947-4-1) Max. 30 VDC 1A Max. 120 VAC 1A	**Resistive load**
Min.1mA at 5 VDC	**Min permissive load**

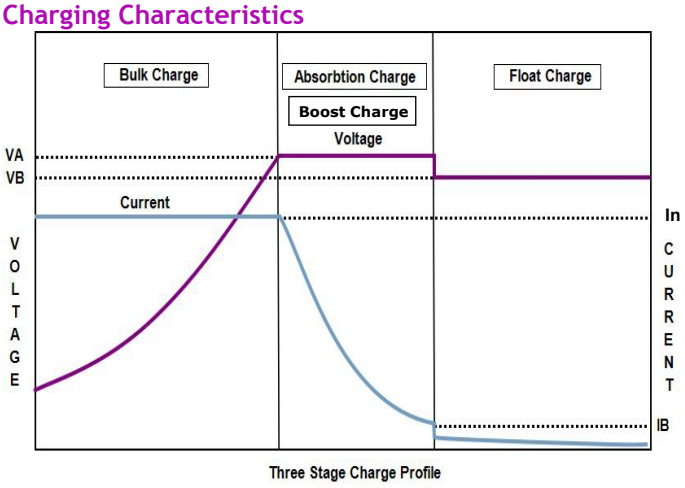
Climatic Data

Ambient Temperature operation	**-20°C to +70 °C** **(>60°C Derating 2.5%/°C)**
Ambient Temperature Storage	**-40°C up to +85 °C**
Humidity at 25 °C, no condensation	**95 %**
Cooling	**Convection**

General Data

Isolation Voltage (In / Out)	**3000 Vac**
Isolation Voltage (In / PE)	**2000 Vac**
Isolation Voltage (Out / PE)	**500 Vac**
Protection Class (EN/IEC 60529)	**IP 20**
Reliability: MTBF IEC 61709	**> 5,00,000 h**
Pollution Degree Environment	**2**
Connection Terminal Blocks Screw Type	**2.5 mm² (24 – 14 AWG)**
Vibration (operation)	**10 to 500Hz, 2G, 20min/sweep, period - 1Hr, Each along X,Y,Z axes.**
Shock	**30g in all direction in acc. with IEC 60068-2-27.**
Protection class	**1 with PE connected**

Charging Characteristics



Three Stage Charge Profile

Norms and certifications

The CE mark in According to EMC *2004/108/EC* and Low voltage directive *2006/95/EC*.

Electrical Safety

According to IEC/EN 60950 (VDE 0805) EN 50178 (VDE 0160) for assembling device. The unit must be installed according to IEC/EN 60950. Input / Output separation: SELV EN60950-1 and PELV EN 60204-1. Double or reinforced insulation.

EMC Immunity

EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN61000-6-2

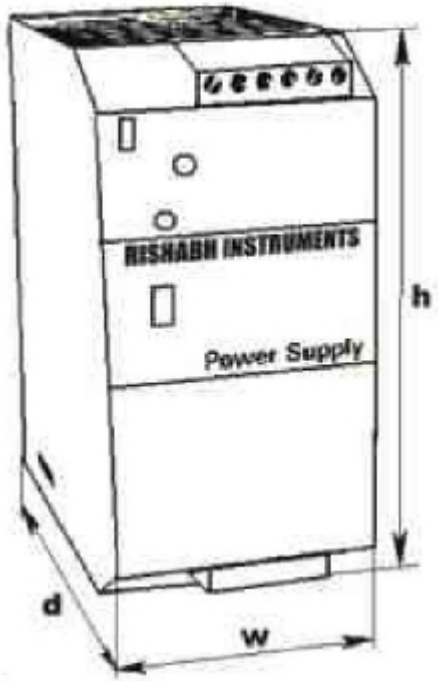
EMC Emission

EN61000-6-4, EN 61000-3-2

Standards Conformity

EN 60204-1 Safety of Electrical Equipment Machines.

Dimensional Details

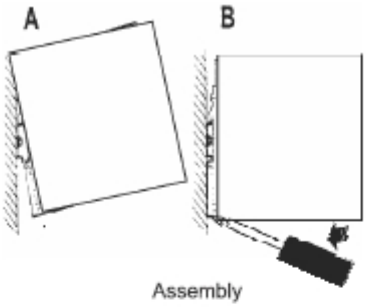


W X h X d

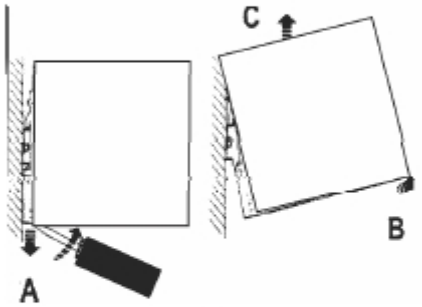
55 X 110 X 105

All Dimensions are in mm

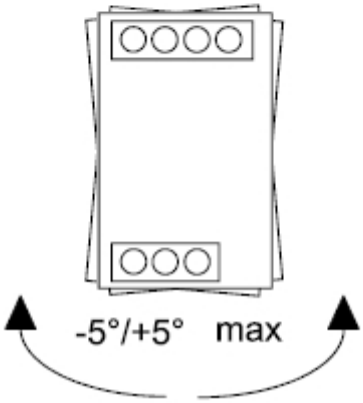
Installation:



Assembly

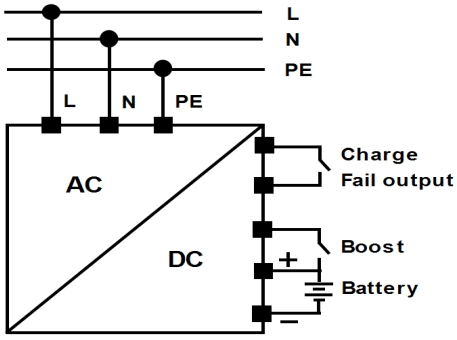


Disassembly



Maximum angle of Asslembly

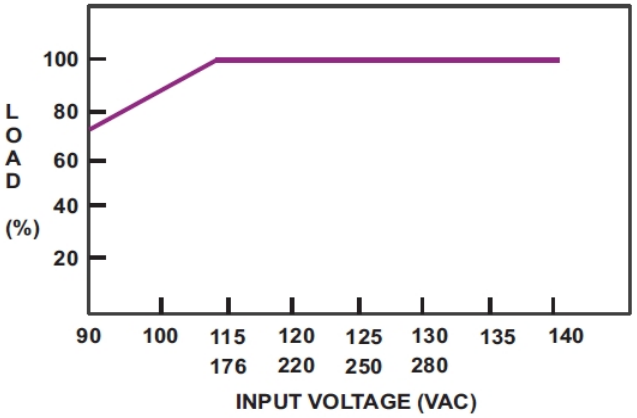
Electrical Connection



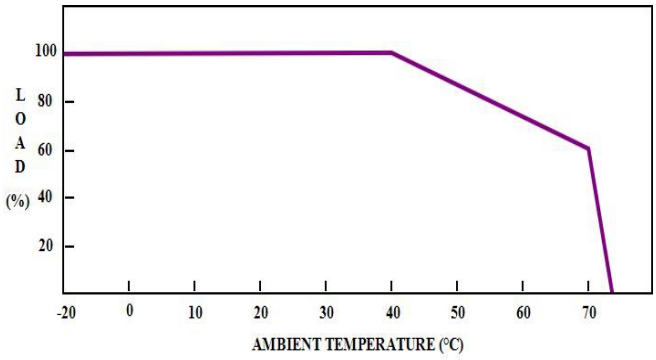
Note-

*Refer Battery manufacturers data sheet for their suggestions on acceptance of higher charge rates since charging Battery beyond recommended capacity will increase the charging time and below specified capacity will increase charge rate causing dehydration and grid corrosion on the positive plate which will result in loss of battery capacity.

Static Characteristics



Derating Curve



Model	Constant Current	V Boost (± 2%)	V Absorption (± 2%)	V Float (± 2%)	Nominal O/p Current (In)	Recommended Battery Capacity Range (Ah)*
Rish Elite 12012	9.6 A	14.4 V	14.2 V	13.5 V	8.5 A	30 - 100 Ah
Rish Elite 12024	4.8 A	28.8 V	28.4 V	27 V	4.25 A	15 - 50 Ah
Rish Elite 12048	2.4 A	57.6 V	56.8 V	54 V	2.2 A	7.5 - 25 Ah