

REC-MAK SD Series Battery Chargers

110V / 150 Amper Supply & 25 Amper For Charger



MAK 
POWER SYSTEMS
www.mak-powersis.de

- High Frequency PWM Newest Technology
- Thyristor Technology or IGBT Technology 1 Millisecond R. Time
- Micro Chip Controlled, Fast and Precisely, Efficient
- Perfect DC Supply for Industrial Solutions
- 2 Years Warranty & 10 Years Spare Part Availability
- High Efficiency up to 96%
- Thyristor or IGBT Switch Mode Optional
- Wide Input Voltage Range for Usage in Rural Areas
- Advanced Protection and Data Logging for Industrial Usage
- Short Circuit, Overload, Over Voltage & Over Temperature Protection
- Unlimited Number of Paralleled Modules
- Selectable Output Voltage Values "Lower Than Ordered Unit"
- 6 Pulse, 12 Pulse or Switch Mode Technology
- Input 230V / 400V or 108V / 220V & 50Hz / 60Hz Options
- Constant Voltage or Current Option
- Small Footprint, Easy Maintenance & Robust & Anti Rust Cabinet
- Easy Monitoring Voltage, Current, from Screen
- Warning LEDs and Dry Contact as Optional
- Wall Mount or Stand Alone or With Wheel Optional
- Customized Production, Higher Voltage & Current Values



Industrial Applications



GSM Stations & Radars



Automation Panels

*24Volt - 48Volt - 72Volt - 108Volt - 127Volt - 220Volt / * 50Amper - 80Amper - 100Amper - 150Amper - 200Amper - 400Amper - 500Amper - 1000Amper

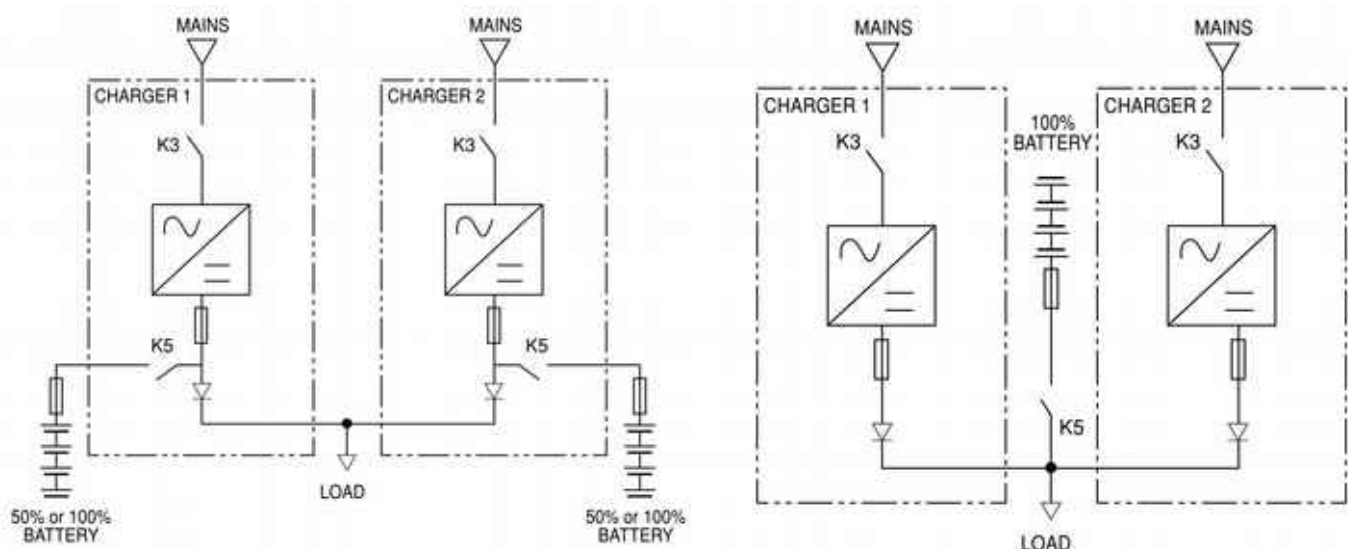
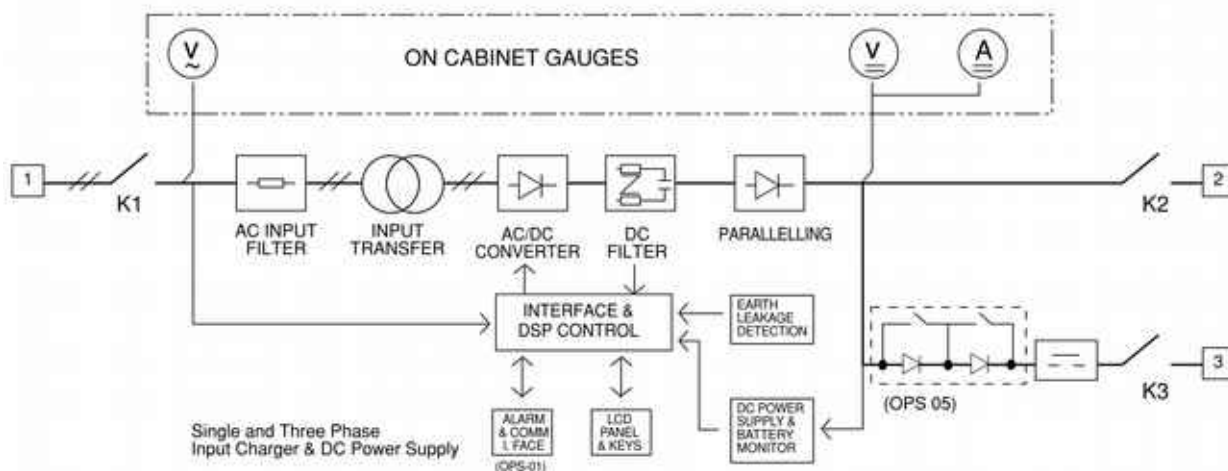


REC-MAK SD Series DC Supply

24V – 220V & 10A – 500Amper Lead Acid Battery Charger

SD-MAK series battery chargers are developed for charging high capacity batteries used in forklifts, GEL batteries, traction batteries electrical earth movers etc... and designed for both individual for your electrical vehicles or industrial use. User friendly control panel and easy operating system is very practical to connect, control. Since the battery charger is electrically smart micro chips controlled charging operation is very safe, easy and extends your lead acid battery life. Day-off charging function enables the battery fully charged when it is not used and increase the life time of the battery. There is no need for any adjustments with Plug and play function and charging starts automatically when the battery is connected.

The charger consists of economic, environment-friendly, and reliable DC power supplies that use the resonant converter technology, operating at high frequencies. They have a high input power factor along with very low output voltage ripples. They have a high input power factor along with very low output voltage ripples. They are used extensively for charging lead-acid and as customized nickel cadmium batteries; at telecom and power distribution sites, or wherever DC power is needed.





REC-MAK SD Series DC Supply

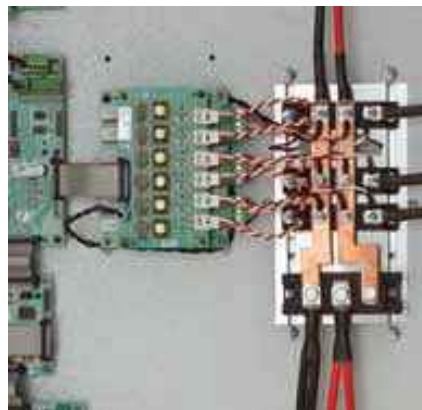
Touch Screen Solutions Optional



REC-MAK SD Series DC Supply



Communication Interface



Useable Areas:

Telecom systems,
Ni-Cd and Lead,
Acid batteries charger,
Energy distribution stations,
Power stations,
Emergency lighting systems,
Natural gas distribution control stations
DC uninterruptible power systems
Scada Supply

REC-MAK SD Series DC Supply

Capacity	17.87 kW
Power Watt	15.12 kW / 110V 150Amper + 25Amper Charger
INPUT	
Input Volt. Range & Cable Entry	IT Connection / 400V -12% +15% 3P+ N+PE Star or Delta Connected Please Confirm & Top Cable Entry / Special Cable Entry System
Input Power Factor	At Full Load > 0.99
Input Frequency Range	50Hz = 45 - 66 Hz (Selectable) Wide Range Optional 40Hz - 70Hz
Rectifier	IGBT With Power Correction
Total Harmonic Distortion (THDi)	<%8 With EMC Filter at Full Load
OUTPUT	
Output Voltage Range & Cable Entry	110V DC Output Two Cable & Top Cable Entry
Recovery	0% - 100% - 0% Load, Maximum Output Tolerance 5%, 1% Back to Band <40ms
Efficiency	Online Mode Up to 90%
Crest Factor (CF)	3:1
Overload Capacity*	At 110%1min
BATTERY	
Batt. Quantity & Battery Racks	4x10x235Ah / 12V Battery INTERNAL & Valve Regulated / EN 50272-2 / Cut off Voltage 10.38V
Charge Value © & Method & Time	Nominal 0,1 C, Adjustable and Temperature Compensated Charging Voltage / 8 Hours for %90
Battery Power & Control Measur.	25% of The Device Power & Midpoint Measurement & Temperature Sensors
External Battery & Cabinet	4x10 x 235Ah / 12V GEL ==> At%100 Load 300 Minutes Back Up Time / EN62040-3 5.4.2.2 Max %5 of C10Ah & Seismic Rack 0.1G
COMMUNICATION	
Communication Port	RS232 Standart, RS485, SNMP Adapter Option & Dry Contact Card & From Scada 110V
Dry Contact	Optional
Protocol	SEC, TELNET
STANDARDS	
Surge Protection & Ciciut Breaker By-pass	BRU11/21 Class II with Special Surge Protectors & Schneider Compact NSX 100B & Schneider Avts 9 IC60N 16A C-Curve And Selectable Static and External By-Pass Standard / Bypass with Step down Transformer for 110V
EMC/LVD & Quality	EN62040 - 2 / EN62040 -1 EN60950 EN62040 -3 (VFI-SS-111) / EN 60364-4-41 / EN60529 / EN61439-1 8.2.1 & 10.2.6 / EN60204-1 EN61439-1 Clause 8.4.2 & 8.4.3 & 3.5 & 8.1.4 & 8.2 & 8.2.2 & 8.2.3 & 8.6 & 8.6.5 & 8.6.6 EN62262 / IK05 & ISO 9001 - ISO 14001 - ISO 18001 EN61439-1 9.4 & 10.12 & Annex J - A
GENERAL	
Cooling & Running & Store Temp.	Ventilation with Fan, Filter, Thermostat, Fan in Top / Blowing out and Filters in Bottom For UPS 0°C~45°C & For Batteries 5°C~30°C
Control & Signal Supply Terminals Upstream	Internal & Redundant Power Supply Card & Icp = 19.3 Automatically Disconnection against Upstream & Down Stream / No Residual Current Device / Electrical Separation
Protection Class	Standard IP22 When the doors open IP2X & Seismic 0.1G Vibration Protection Cabinet
Chassis & Humidity	Floor Standing / Eye Bold / Door Stop / Cubic / Schneider or Rittal / Hinged Right & Left / RAL 7035 Rust Protection & 20%-100% Glass Protection for Controllers / Spare Control Terminals for Circuit Breaker
Screen	Standard 320mm x 240mm, Marine 4x20, Customized Touch LCD Screen & Mimic Diagram & Optional English, German, Spanish, French
Altitude	<1000Meter @35°C & <1500Meter @30°C & after 1500Meter for Each Meter %1 Loss
Alerts	500 Event Logs & 180 Parameters for Each Log "As Excel Sheet"
Parallel Op. & Transient Voltage	No & Category III & Surger Pro
EPO (Emergency Power Off)	Standard EPO / <40°C =Correction Factor 1. & <45°C Correction Factor >0.90 & <50°C Correction Factor >0.60
Isolation Transformer	Output Isolation Transformer
Net Weight (kg)	UPS Cabinet: Max 450kg / Battery Cabinet Batteries & Cables: 40 Pieces 235Ahx12V 3500kg
Dimensions (WxDxH) (mm)	UPS Cabinet: 1200x1000x2000 / Battery Cabinet 1200x1200x2100
*under certain conditions	We Can Adjust the UPS and Battery Cabinet, Pleas Let Us Know If You Have a Special Dimensions

* 3 Phase in / 1 Phase Out Version is Available. (10 to 30kVA)

Mak Plus Power Systems UG reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without