

RCP Series

PROGRAMMABLE RECTIFIERS - BATTERY CHARGERS

FUNCTION

Conversion of three-phase alternating AC power to controlled DC power for battery charging and power supply to DC loads.

FEATURES

- Six SCR bridge
- Microprocessor control
- High visibility LED display
- Class 1 digital instruments
- Easy and flexible programming
- Safe touch keys
- Modular design
- Automatic float/boost charge control
- Automatic or manual formation charge
- 0 to 100% programming range for output parameters
- Operation as regulated DC power supply
- Compatible with auxiliary power units
- Operation in parallel
- Separate terminals for battery and DC load

APPLICATIONS

- Automatic or manual charger for Lead-Acid or Ni-Cd batteries
- Auxiliary DC supply for substations (Power System)
- Power supply for telecommunications equipment
- High current DC regulated power supply



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INPUT SPECIFICATIONS

AC input voltages: 110/120 V, 208/220/230/240 V, 380/400 V
Supply Type: Three-Phase / Three-Wire, suitable for IT, TT, TN-S systems
Input voltage range: rated input voltage $\pm 10\%$ to $\pm 20\%$
Frequency: 45 to 65 Hz

OUTPUT SPECIFICATIONS

Nominal Battery Voltage: 24, 48, 110, 125, 220 V Models
Output Maximum Voltage: 35 Vdc to 300 Vdc, depending upon the number and type of cells.
Adjustment Range: 0 to 100% of the maximum voltage for float, boost or manual charging to match battery requirements.

Typical values:

Float voltage:	Lead Acid: 2.15 - 2.27 V per cell Alkaline: 1.4 V per cell
Boost charge voltage:	Lead Acid: 2.3 - 2.4 V per cell Alkaline: 1.5 - 1.7 V per cell
Formation voltage:	Lead Acid: up to 2.7 V per cell

Voltage regulation of adjusted value: $< 1\%$ (load + line regulation)
Ripple Voltage: $< 1\%$ rms. At rated DC load, battery disconnected.
 < 100 mVpp with optional filter
Psophometric Noise: 2 mV rms with optional filter

Output Current: rated values from 10 to 180 A to match battery AH capacity and DC load requirements.
Current regulation of adjusted value: $< 1\%$ (constant current charge mode)
Charge current ripple (rms): $< 10\%$ of rated current value

CONTROL PANEL

6-digit, 14 mm LED display
3 LED indicators
4 touch keys
Alphanumeric LCD (optional)

INSTRUMENTS AND INDICATIONS

Output voltage and currents, output parameters, alarm indication and settings on control panel display.
Voltage measurement: output voltage, 3 digit, class 1
Current measurement: total, battery and DC load currents, 3 digit, class 1
Alarm indication: Display messages.
Charge Mode: LED indication of float, boost-equalize and manual operation.
Remote Signal: relay contacts (NO, C, NC). Energized relay at normal operation.
AC input voltage and currents: additional 6 digits, 4 keys panel (optional)

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PROTECTION

AC input circuit breaker
AC input fuses (optional)
Overload and short circuit protection.
Electronic current limit.
DC output fuses
High output voltage inhibit
Reverse battery connection inhibit
Over Temperature inhibit (optional)
Semiconductor rated fuses for thyristors (optional)
AC input voltage out of range (optional)

ALARMS

Low and high output voltage
Overcurrent at DC load output
AC power failure
Rectifier failure

Alarm Options:

- Blown fuse
- Temperature
- Earth leakage

REMOTE SIGNALS

Relay contacts (NO, C, NC). Energized relay at normal operation.

OPERATION

Automatic operation:

Float or boost-equalize charge depending upon battery condition.
Float to boost changeover: Set by a programmable discharge voltage level.
Boost to float changeover: Set by a programmable battery current level.
Independently programmable values for float / boost voltage and current limits.

Manual operation:

Constant voltage - constant current charge with voltage and current limits set by the operator. Suitable for constant current formation charge with final voltage limit.
Manual boost-equalize charge to be switched on/off by the operator.
Internally programmable timer for battery protection.

MECHANICAL SPECIFICATIONS

Enclosure: Steel IP21 Cabinet
Finishing: RAL7032 textured powder coating
Connections: Asymmetrical Rail Terminals EN 50035
Signals: 4 mm²
Mains: 3 x 25 to 150 mm²
DC Battery Output: 2 or 4 x 25 to 150 mm²
DC Load 2 x 25 to 150 mm²

Standard Enclosures:

- 420 x 450 x 300 mm
- 635 x 450 x 400 mm
- 1200 x 600 x 400 mm
- 1300 x 800 x 800 mm



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ENVIRONMENTAL SPECIFICATIONS

Ambient Temperature: -10°C to 45°C
 Relative Humidity: 0% to 100% RH Non-condensing
 Altitude: 0 to 1500 m (optional: 0 to 4000 m)

STANDARDS

Charge curves: DIN77, UI
 Mfg. Standards: IEC 60146, 60255-5
 Type Test: in accordance to IEC 60146-343 duty class I
 Routine Tests: in accordance to IEC 60146 and 60255-5

OPTIONS

- Two sets of programmable operation values for two different nominal battery voltages (ex. 48 V & 110 V)
- Blown output fuse indication
- AC input voltage and current monitoring
- Filters for special output ripple and noise requirements
- Low and high AC input voltage disconnect
- Over temperature alarm and inhibit
- Earth leakage detection and alarm
- Additional alarm relay contacts
- Relay contacts for remote indication of operation mode
- Serial Communications Port
- Temperature compensated output voltage
- Programmable timer for manual boost-equalize charge
- Voltage - time controlled float/boost changeover
- Reduced voltage at the DC load terminals

MODELS

Voltage, Vdc \ Current A	24	48	110	125	220
10	RCP24V10A	RCP48V10A	RCP110V10A	RCP125V10A	RCP220V10A
15	RCP24V15A	RCP48V15A	RCP110V15A	RCP125V15A	RCP220V15A
20	RCP24V20A	RCP48V20A	RCP110V20A	RCP125V20A	RCP220V20A
30	RCP24V30A	RCP48V30A	RCP110V30A	RCP125V30A	RCP220V30A
40	RCP24V40A	RCP48V40A	RCP110V40A	RCP125V40A	RCP220V40A
50	RCP24V50A	RCP48V50A	RCP110V50A	RCP125V50A	RCP220V50A
60	RCP24V60A	RCP48V60A	RCP110V60A	RCP125V60A	RCP220V60A
80	RCP24V80A	RCP48V80A	RCP110V80A	RCP125V80A	RCP220V80A
100	RCP24V100A	RCP48V100A	RCP110V100A	RCP125V100A	RCP220V100A
120	RCP24V120A	RCP48V120A	RCP110V120A	RCP125V120A	RCP220V120A
180	---	RCP48V180A	RCP110V180A	RCP125V180A	RCP220V180A