

Bragamoro SCR Battery Charger / Rectifier

Industrial grade DC Power Supply (Charger) with galvanic Isolation.

Fully compliant with IEC Standards



The Bragamoro SCR is an industrial battery charger and DC power supply system with a thyristor controlled rectifier designed to secure critical industrial applications in harsh environments.

Engineered for Demanding Environments

- Transformer base provides full galvanic isolation to prevent electric shock and suppress harmful electrical noise.
- Robust industrial enclosure up to IP42 / NEMA 2*.
- Seismic design for peak spectral acceleration up to 1.0 g*.
- Operation temperature up to 55°C.
- Printed circuit boards have conformal coating to protect against moisture, dust, chemicals, and extreme temperatures.

Customizable, Adaptable Design

- Dropping Diode cells
- Drip-Proof cabinet Shields Alarm Buzzer
- 6-Pulse Thyristor bridge (12-Pulse on request) and input THD Filters
- Remote Control Monitoring Software
- Applicable batteries: Lead Acid, Ni-Cad, Lithium Ions (additional options available on request)
- Special color and Protection degree
- Additional alarms and Potential free contacts
- Any Special request

Uncompromising Reliability

- High Mean Time Between Failures (MTBF).
- Longer product lifespan, with minimal servicing required.
- Parallel or redundant capabilities to increase availability.
- Controller firmware and hardware are compliant with IEC 60880 for NPP (Nuclear Power Plant) applications.
- Independent System Surveillance (ISS) provides health supervision of all critical components to prevent the system from freezing and shutting down.



Internal View of SCR Dual Configuration

Rectifier Input

Input Voltage (1 Phase)	120 V, 220 V, 230 V, 240 V (additional options available on request)
Input Voltage (3 Phase)	208 V, 380 V, 400 V, 415 V, 480 V, 600 V, 690 V (additional options available on request)
Input voltage tolerance	±10% ±15%
Rated Frequency	50/60Hz +/- 10%
Power Factor	>0.8
Efficiency	up to 94 % (depending on type)

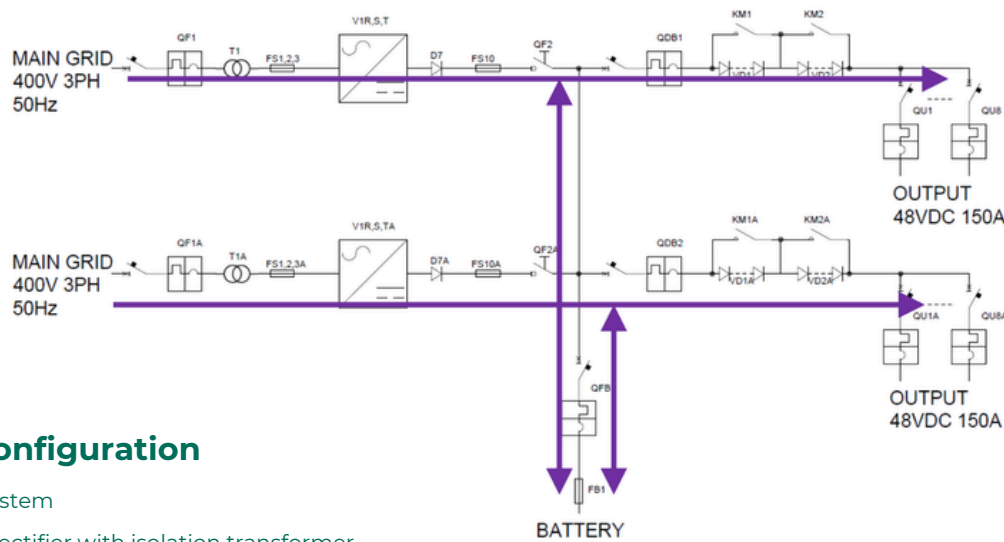
DC Output

Voltage	12V/24V/48V/60V/110V/125V/220V (DC)
Output Current	Up to 2000A (Depending on type)
Adjustable output voltage range (Float/Equalize)	70% to 130% (Depending on type)
DC Voltage Tolerance	±1% under all operating conditions
Dynamic behavior 10 –100% and 100 –10% load step Regulation time	maximum +/- 10% Vrms <100 ms +/- 2%
DC ripple voltage	<1.5%
DC current tolerance	Electronic Current Limitation +/- 2%
Characteristic	I-U according to DIN 41773
DC overcurrent capability	110% for 1m, 111% - 125% for 15s, 126% - 200% for 1s

General Data

Ambient temperature range for storage	from -20 to +70 °C
Ambient temperature range for operation	from -10 °C to +50 °C (Storage up to 70 °C)
Altitude above sea level	2000m
Allowable air humidity	20% to 90% (95% non-condensing)
Noise level standard n+1 fan system	Normally <65dB
Degree of protection	IP 21.. IP 52 and others available upon request
Paint	RAL7035 (other RAL colours available upon request)
Cooling	Forced ventilation (two speed) with n+1 redundant, monitored fans
Standards	IEC/EN 62040-1. UL 1778 / CSA 22.2-107.3 EN 61000-4-2-5, EN 60146, EN 61558-2-6, EN 61439-1-2;CEI 60947-2, EN 60127, EN 61439-1

Synoptic diagram of the Battery Charger is depicted



Basic Configuration

- Single system
- 6-pulse rectifier with isolation transformer
- Rectifier input switch
- Fixed charging voltage IU characteristic
- Human-machine interface
- External connection board
- Common alarm 2 x NO/NC
- Charger failure NO/NC
- Remote NO/NC
- Emergency stop (internal or external power supply)
- Input to activate boost charge
- Input to activate initial charge
- Input to inhibit boost and initial charge
- Connection for battery temperature sensor
- Input to signaling battery fuse/MCCB
- Connection for remote display
- RS-232 interface (event log download)
- Battery capacity test (full discharge with current load)
- DC ground fault alarm
- Bottom cable entry
- Ground terminal
- N+1 monitored two-speed fans (above 100 A)
- Ambient temperature ranges from -10 to +40 °C
- Battery MCCB in rectifier

Mechanical Options

- Top cable entry
- Air filters for air inlet
- 100% redundant ventilation
- Seismic design
- Space heaters
- Panel lighting
- Ambient temperature at a maximum of +55 °C

Options

System

- Parallel redundant configuration with load sharing
- Earth-fault monitoring
- Voltage dropper
- DC/DC converter
- Input harmonic filter

Rectifier

- Rectifier input/output isolator/circuit breaker
- 12-pulse rectifier with isolation transformer
- Ripple filter
- Blocking diode

Battery

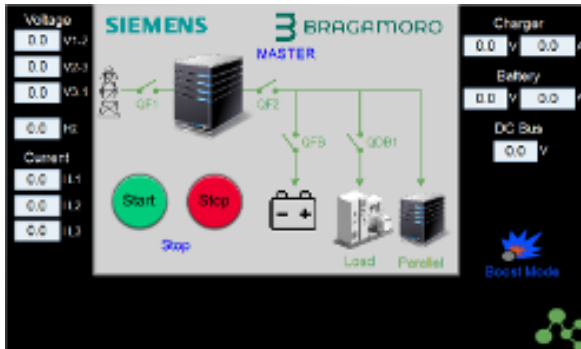
- Battery circuit protection box (MCCB/fuse)
- Battery circuit protection in rectifier
- Low-voltage disconnect
- Battery management system
- Temperature sensor for temperature compensated battery charging
- Battery monitor (programmable battery data)
- Battery asymmetry supervision

Communication interfaces

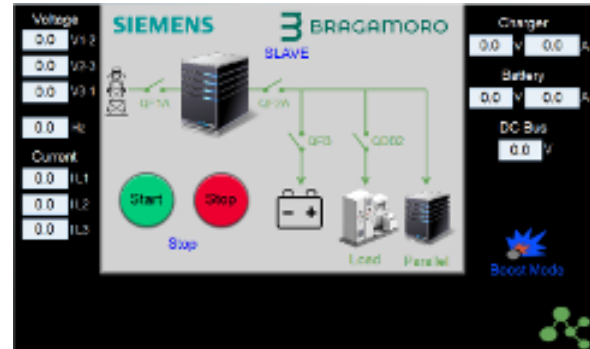
- Transducer
- Relay board, 16 fail-safe NO/NC contacts
- monitoring, modbus RTU and modbus TCP/IP
- Modbus protocol on RS-485 or TCP/IP
- IEC 61850 protocol on RJ-45 and/or fiber optic connector



Initial Page for Battery Charger



Home page for Battery Charger 1 MASTER



Home page for Battery Charger 2 SLAVE

Operational Parameters

- Selectable second display language
- Bypass operation
- Boost charge
- Auto boost (equalize) charge
- Battery-capacity test
- Battery-monitor test (optional)
- Set date/time
- Customisable Logo

System Measurements

- Load in percentage of nominal kVA rating
- AC rectifier input voltage and current
- AC bypass input voltage
- Total DC current, battery voltage, and battery current
- Battery temperature (with optional sensor)
- AC output voltage, current, and frequency
- AC output peak current

System Alarms

- Manual Bypass ON / OFF
- Alarm ON
- Input Power Failure
- Rectifier Failure
- Rectifier ON / OFF
- Boost (Equalize) charge ON
- Fan failure
- Internal PSU fault
- Battery discharged
- System overtemperature
- Battery disconnected
- Rectifier fuse blown
- Battery Operation