

DESIGN – PRODUCTION – SALES – ASSEMBLY – SERVICE
RENEWABLE AND DC&AC RESERVE
BACKUP POWER SUPPLY SYSTEMS



THYRISTOR BATTERY CHARGER AC/DC

Series SBN AC/DC - T

NOMINAL VOLTAGE 24 Vdc, 48 Vdc, 110 Vdc, 125 Vdc, 220 Vdc, 360Vdc

Let`See What We Do?

Thyristor Battery Charger AC/DC developed by ALBAT is a very popular rectifier of the company-products range. It combines reliability and maintainability from compact (easy to replace) designed power electronic control module to offer the best performance in any electrical and environmental condition

ALBAT'S Thyristor Battery Charger AC/DC with its robust design represents a perfect solution for a wide range application in:

- Power generation, transmission and distribution substations,
- Industry,
- Oil/Gas,
- Transport,
- Offshore projects, ...

Main Features:

- Galvanically isolated input transformers, secure isolation input to output.
- Designed for 12+ years of continues operation with appropriate maintenance.
- Full compatibility with lead-acid and nickel-cadmium batteries, sealed or vented.
- Easy maintenance and easy re-produce thanks to compact designed power electronic control module.
- Default wireless load sharing algorithm, default modbus through RS485 communication, default measurement calibration software from HMI on PC, and default battery room temperature compensation algorithm

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albat@albat.ba
www.albat.ba

Albat d.o.o Sarajevo
Igmanska 36, 71320 Vogosca-Sarajevo
Bosnia and Herzegovina

tel.: +387 33 764 075, 764 076
fax.: +387 33 764 077



Economic Efficiency:

- **Optimized design:** Battery can represent a significant part of UPS budget in greenfield or brownfield projects. That's why our Thyristor Battery Charger is designed with a wide output DC voltage range to optimize:
 - Number of battery cells
 - Battery capacity and therefore the price, as per the required autonomy
- **Seamless integration:** A made-to-order system can accommodate:
 - Various solutions to operate with the differing input voltage networks (nominal value, tolerance, frequency)
 - Various LVD and Dropper configurations to get flexible design
 - Customizable fault and status 8 or 16 relays for enhanced interfacing with existing DCS and SCADA systems
- **Very high reliability.** The modul-type design provides high reliability on most ratings to:
 - Make easy to replace complete power electronic parts of product thanks to modul-type design, easy maintenance
 - High MTBF above 100 000 hours with appropriate maintenance plan
- **Specialized solutions.** Thanks to modular design of power electronic control parts, specialized designs are possible with LVD, diode droppers or dc/dc converter regulators.

Availability:

- Various solutions to operate with the differing input voltage networks (nominal value, tolerance, frequency)
- Various LVD and Dropper configurations to get flexible design
- Customizable fault and status 8 or 16 relays for enhanced interfacing with existing DCS and SCADA systems

ALBAT provide completely Design by your technical request, Production, Assembly and Service in warranty and after-warranty period.

The production process is in accordance with the standards ISO 9001:2015, ISO 14001:2015 and ISO 45001:2015. All products are in compliance with IEC and EN standards.

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Technical Specification

DC OUTPUT					
Nominal voltage Vdc	24	48	110	220	360
Voltage range	16-35	32-70	72-158	144-310	240-480
Output current A	10 / 20 / 30 / 50 / 60 / 100 / 120 / 150 / 200 / 250 / 300 / 400 / 500 / 600	10 / 20 / 30 / 50 / 60 / 100 / 120 / 150 / 200 / 250 / 300 / 400 / 500 / 600	10 / 20 / 30 / 50 / 60 / 100 / 120 / 150 / 200 / 250 / 300 / 400	30 / 50 / 60 / 80 / 100 / 120 / 150 / 200	30 / 50 / 60 / 80 / 100 / 120 / 150
Output voltage stability (in floating modde)					
Single system	±1%				
Parallel system	±2%				
Voltage ripple	≤1% rms (without battery)				
Current limitation	5% to 100%				
BATTERY					
Type	Lead Acid / Nickel Cadmium				
Autonomy	Few minutes to hours				
Battery current limitation					
Lead Acid battery	0,1°C				
NiCad battery	0,2°C				
AC INPUT					
Nominal voltage	220 / 240 / 380 / 400 / 440 / 480 Vac ±15%				
Frequency	50 / 60 ±5%				
Neutral configuration	With or Without neutral				
Cos φ	≥0,9 (at full load)				
Power factor	≥0,85 (at full load)				
GENERAL DATA					
Dimension	Depends on the project				
IP protection	IP20 (IEC60529)				

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Cabinet color	RAL7035 or special
Cooling	Forced with FANs
Efficiency	80-95% (depends on ratings)
Noise (1m from unit)	60-70% (depends on ratings)
Operating temperature	0-40 C degree
Relative humidity	<95 non-condensing
Operating altitude	1000m max. without derating
STANDARDS	
IEC60146-1-1	Semiconductor converters, basics
EN50091-1	Security
EN50091-2	EMC
IEC60529:1989 +AMD1:1999	Degrees of protection (IP code)
OPTIONAL	
Rectifier	<ul style="list-style-type: none"> Blocking diode for capacitor protection 12 Pulse rectifier topology (input current THD < 10%) +/- 25% wide input range SBN AC-DC-T02 (Single phase 2 pulse thyristor controlled) SBN AC/DC-T06 (Three phase 6 pulse thyristor controlled) SBN AC/DC-T12 (Three phase 12 pulse thyristor controlled)
Battery	<ul style="list-style-type: none"> Battery room temperature sensor Battery monitoring system (PESS BMS) Low voltage disconnection contactor (LVD) Battery Cabinet
System	<ul style="list-style-type: none"> Freewheel reverse diode for magnet application 1,2 or three stage diode-dropper for load output Serial DC/DC converter for load voltage regulation Internal lighting for cabinet DC distribution cabinet
Mechanical	<ul style="list-style-type: none"> External Protection up to IP42 Special cabinet color Special cabinet dimensions Lifting eyes Special nameplate etc.
Communication	<ul style="list-style-type: none"> Front panel analog meters Transducers 4-20ma output for SCADA Modbus TCP/IP SNMP version1 DNP3 class2 IEC61850 protocol Indoor Mimic Panel for layout explanation (metal or aluminum)

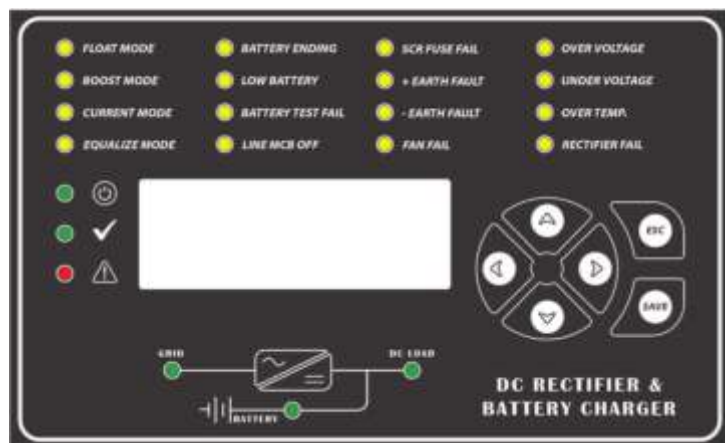
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Front Panel



HMI (PC)



TROUBLESHOOTING:

- Colored or labeled cable-coding of each point, easy to understand all wirings
- Memorization of last 1000 event with date & time, enable to save a .txt file and print event history from HMI on PC, or check from user LCD panel one by one.
- LED indications for all critical warnings or faults, measurements for all analog readable values.
- Enable to replace complete power electronic module of product with new one, easy maintenance

Example of Design



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