

The rectifier range BCSe is designed for user-friendly operation and is easy to adjust. The microprocessor controlled rectifier offers many of alarm and status contacts as standard.



BATTERY CHARGER / RECTIFIER

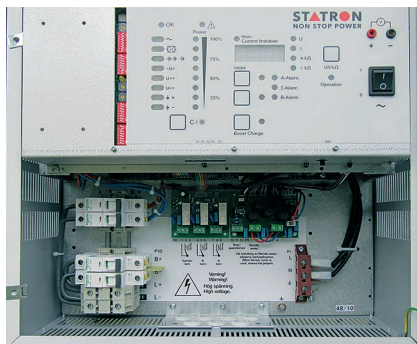
BCSe 24/48/60/110/220V

Key features

- ▶ Based on well proven technology platform
- ▶ Power factor corrected rectifier (PF 0,99)
- ▶ Simple to use, easy to adjust
- ▶ Clear structured front panel
- ▶ High efficiency
- ▶ Very low ripple voltage
- ▶ Design life of up to 20 years

Operational benefits

- ▶ High reliability
- ▶ No reactive power consumption
- ▶ Low service costs
- ▶ Easy operation and control
- ▶ Low power consumption costs
- ▶ Increased lifetime of battery
- ▶ Long durability



Standard features

Statron's BCSe range offers many outstanding standard features enabling a secure supply of the critical loads. These features are:

- Different DC voltage
12/24/48/60/110/220V
- Short circuit proof

- Switch mode technology (160 kHz)
- Compact design, small dimensions
- Digital Volt-, & Amperemeter
- A-Alarm and B-Alarm
- Float and Boost charge level
- Potential-free contacts
- Easy to understand and to operate HMI
- Battery MCB included
- Power factor correction PF >0,99
- Bottom cable entry



Options

The range of options enable a fully customized solution meeting any specific requirement, such as:

- Sensor for temperature compensation
- Additional alarm relay card (8 separate alarms)
- Change of input from 1-phase to 3-phase
- Change of input from 3-phase to 1-phase
- Battery symmetry monitoring
- DC-Distribution
- 5pc. MCB 1-pole or 3pc. MCB 2-pole
- Batteries in rectifier cabinet (48V system)
- Current ratings from 24V/400A up to 220V/50A
- Special cabinet colour
- Customized cabinet with batteries and distribution included

Technical Specification | BCSe 12/24/48/60/110/220V

DC voltage		Nominal output current	
12 V		5-35A (1-phase input)	
24 V		2,5 -120A (1-phase input)	140 - 400A (3-phase input)
48 V		2,5 - 60A (1-phase input)	70 - 200A (3-phase input)
60 V		4 - 40A (1-phase input)	
110 V		2,5 - 30A (1-phase input)	40 - 100A (3-phase input)
220 V		2,5 - 10A (1-phase input)	15 - 50A (3-phase input)
Input AC voltage (min. – max.)	VAC	230V-15/+15%, 47-63Hz, 1-phase; 400V-15/+15%, 47-63Hz, 3-phase (model depending)	
Output voltage	VDC	12 / 24 / 48 / 60 / 110 / 220 VDC	
Input power factor / cos phi	PF/cos phi	0,99 / 0,99	
DC voltage regulation		+/-0,05%	
Output current limitation		102% of nominal current	
Efficiency		>85%	
Charging characteristic		I/U according to DIN 41773	
Ripple voltage		< 0,05% RMS	
Operation conditions	°C	–10 to +40 °C	
	RH	95% humidity (non condensing)	
	m	≤1000m m.a.s. (without derating)	
Ventilation		Fan cooled per power module	
Protection degree		IP40	
Dimensions (WxDxH) without integrated batteries		430 x 175(270/365) x 410(700/1250)mm, model depending	
Dimensions (WxDxH) with integrated batteries		600 x 300 x 1000 mm	
Colour		RAL 7035	
Standard protection		Input MCB, rectifier output and battery MCB, short circuit proof	
Standard alarm and status indication on LCD and alarm panel		Mains failure, Charger failure, Battery circuit failor, Float voltage failure (<U>), High battery voltage, Low battery voltage, Earth fault +, Earth fault -, Load level	
Potential-free contacts		3 pcs. Standard Alarms (A-/B-Alarm, Common-Alarm), separate relay card as option	
Main applicable standard		EN 50 081-1 / -2 EMV-Emission, EN 50 082-1 and EN 50 082-2 EMC Immunity EN 55022 B RFI/EMI, EN 60 950 Safety, IEC 60146-1-1 Basic requirements	
Quality/Environment		ISO 9001:2015/ISO 14001:2015	

Further data available on request

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The BDS is a heavy duty, single phase thyristor-controlled rectifier, specifically designed for the harshest operating environment in industrial applications, such as oil and gas, petrochemical, power generation, power distribution and transmission plants for operation throughout the world.

The modular and flexible system concept together with a high number of options enables a fully customized solution that allows to meet any requirement - irrespective how specific it may be.

Single Phase Battery Charger / Rectifier BDS Series | 5 – 80A

Key features:

- Based on well proven technology platform
- Design life of 25 – 30 years
- Robust analogue regulator with digital (μ P technology) set-point management and monitoring
- Clear structured front panel
- State of the art communication software
- Fully monitored system platform
- Rugged and heavy industrial design
- Intelligent battery management

Operational benefits:

- High reliability
- Long durability
- High availability, save control logic if μ P fails (analogue regulator will still run system in safe mode)
- Easy operation and control
- Easy access and intuitive communication
- Low operational costs
- Low maintenance costs
- Extremely high degree of availability

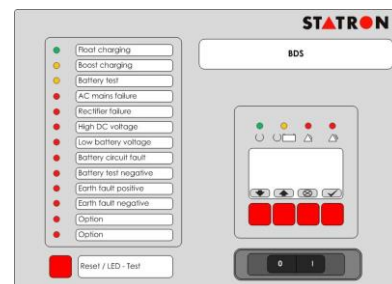
Single Phase Battery Charger / Rectifier

BDS | Technical Specification

Easy Operation & Control

The front panel of the BDS facilitates a comprehensive and flexible human machine interface (HMI). An easy and intuitive operation and control of the system is achieved through:

- Comprehensive 4-line LCD display
- Multi-language support
- 13 programmable alarms and indications
- 4 LEDs integrated in the display above the push buttons are linked to fixed functions (operation, battery operation, non-urgent alarm and urgent alarm)
- Intelligent real time event recorder for 200 events
- Continuous battery availability (health) check
- Multi-level user management



System ratings	24V	48V	60V	110V	220V
	BDS 24-20	BDS 48-10	BDS 60-10	BDS 110-5	BDS 220-5
	BDS 24-40	BDS 48-20	BDS 60-20	BDS 110-10	-
	BDS 24-60	BDS 48-30	BDS 60-30	BDS 110-16	-
	BDS 24-80	BDS 48-40	BDS 60-40	-	-
	Other rating available on special requests				
Rectifier input					
Rectifier AC input voltage	1x230 V $\pm 10\%$ (1x220 V, 1x240 V, others on request)				
Rectifier input frequency	50 Hz / 60 Hz $\pm 5\%$				
Rectifier input power factor	Typical > 0.8 ind.				
Rectifier DC output					
Nominal voltage	24 / 48 / 60 / 110 / 220 VDC				
DC voltage tolerance	$\pm 1\%$ (static)				
DC ripple voltage	$< 5\%$ rms without battery connected (lower on request)				
Charging characteristics	IU / IUoU acc.DIN 41773				
General Data					
Efficiency	85% -94% depending on model and DC load				
Noise level	55 dB(A) – 65 dB(A)				
Cooling	natural convection (special models with fan cooling)				
Operating temperature	-10 to $+40$ deg C (up to 55 deg C with derating)				
Storage temperature	-20 to $+70$ deg C				
Maximum altitude without derating	1000 masl (up to 4000 masl with derating)				
Allowable relative humidity	$< 95\%$ (non condensing)				
Protection degree	IP20 (up to IP54)				
Colour / Paint	RAL 7035 (other colour optional)				
Safety	IEC/EN 62040-1				
EMC	IEC/EN 62040-2				
Performance & Test	IEC/EN 60146-1-1 / IEC/EN 62040-5-3				
Quality / Environment	ISO 9001:2008 / ISO 14001:2004				
Dimension of cabinet	Width x Depth x Height*: 600 x 800 x 1900 (height 2100, 2300 optional)				

* dimensions for IP20 and basic configuration

Further data available on request

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**BATTERY CHARGER /
RECTIFIER**

BDTe Series 50–2200 A

Key features

- ▶ Based on well proven technology platform
- ▶ Design life of 25–30 years
- ▶ Latest digital control technology
- ▶ Clear structured front panel
- ▶ State of the art communication software
- ▶ Fully monitored system platform
- ▶ Rugged and heavy industrial design
- ▶ Intelligent battery management

Operational benefits

- ▶ High reliability
- ▶ Long durability
- ▶ High degree of customization and flexibility
- ▶ Easy operation and control
- ▶ Easy access and intuitive communication
- ▶ Low operational costs
- ▶ Low maintenance costs
- ▶ Extremely high degree of availability

BDTe – the standard in reliability, functionality and serviceability

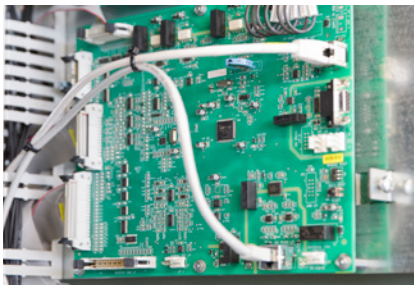
The BDTe is a heavy-duty, thyristor-controlled rectifier, specifically designed for the harshest operating environment in industrial applications, such as oil and gas, power generation, or distribution and transmission plants. The modular and flexible system concept together with a high number of options enables a fully customized solution that allows to meet any requirement – irrespective where in the world and how specific it may be.



Reliability through excellent design

The outstanding reliability of the BDTe is ensured by a combination of high-end technology and robust design. In detail, the advantages are based on:

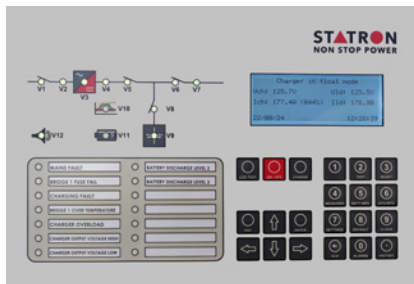
- Leading microprocessor-controlled thyristor technology
- Internal power supply with 3 independent DC converters including health monitoring
- Integrated watchdog circuits
- RS485 internal communication bus
- Ultra-cap real-time clock (RTC) backup with time synchronization
- Dedicated I/O board with numerous configurable analogue and digital inputs
- CAN bus for parallel operation for robust digital communication
- 12-pulse operation with active load sharing (option)
- Control scheme for best diesel generator compliance
- Fully segregated, independent and redundant measuring facilities including mains power meter
- Microprocessor-based diode voltage dropper (DVR) controller
- Fully integrated earth fault monitor with leakage current indication
- Real time temperature display and monitoring



Durability due to use of proven technology

UPS solutions engineered by Statron have been protecting industrial installations for more than four decades. The outstanding durability of the BDTe is based on:

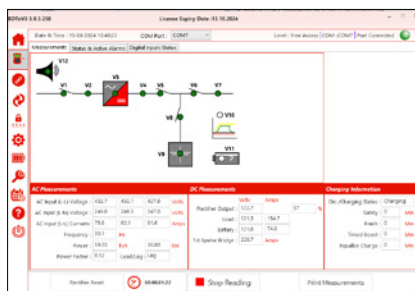
- Well proven system platform BDT
- Use of high-quality rugged industrial components
- Design life of 25–30 years
- Compliance to all relevant ISO and IEC/EN standards
- Electrical and physical integrated galvanic isolation
- Designed to withstand harsh environmental conditions (up to IP54)



Easy Operation & Control

The front panel of the BDTe facilitates a comprehensive and flexible human machine interface (HMI). An easy and intuitive operation and control of the system is achieved through:

- Colour-coded and animated LED mimic flow diagram adapted to actual configuration
- Comprehensive 8-line LCD display
- Multi-language support
- 14 programmable alarms / indications
- Real time event recorder for 2500 events
- Continuous battery health check
- Multi-level user management
- Front access to key components to allow fast and cost-effective maintenance



Easy accessible interface & intuitive communication

State of the art communication software and gateway supports the monitoring and control of the BDTe. Intuitive communication is achieved through:

- RS232/RS485 serial interface with MODBUS protocol
- Modbus TCP/IP interface
- PROFIBUS and IEC 61850 interface
- TCP/IP network interface with on-board web-server
- USB-stick interface for event log
- Remote display
- Programmable relays cards
- Digital inputs for EPO, generator operation etc.
- Programmable analogue inputs (battery temperature etc.) with clear text messages



Reliable battery use and management

Battery monitoring and management is a key factor for a reliable and durable power back-up. The Statron BDTe has class leading built-in features, such as:

- Multi-string battery current monitoring
- Battery availability check
- Smart Battery Monitor (constantly updated battery capacity and battery back-up time)
- Automated / manual partial discharge testing
- Compatible with all battery types / wide DC range
- Four individual programmable battery charge voltages
- Two individual battery charge current limitation levels
- Float Current monitoring

Technical specification | BDTe Series 50–2200 A

DC current (rating)		50 A	100 A	150 A	200 A	300 A	400 A	500 A	600 A	800 A	1000 A	1200 A	1400 A	1600 A	1800A	2000 A	2200A
Rectifier input																	
Rectifier AC input voltage		3x208/380/400/415/480/500/690 V ±10% (others on request)															
Rectifier input frequency		50 Hz / 60 Hz ±5%															
Rectifier input power factor		Typical > 0.8 ind.															
Rectifier DC output																	
Nominal voltage		24 / 48 / 60 / 110 / 125 / 220 VDC															
Setting range:	Float voltage	100 – 120%															
	Boost voltage	100 – 130%															
	Initial charge voltage	100 – 150%															
DC voltage tolerance	Static	±1%															
	Dynamic	max. ±10% Vrms / ±2% Vrms within 100 ms															
DC ripple voltage		< 2% rms without battery connected (lower on request)															
Charging characteristics		IU / IUoU acc.DIN 41773															
General Data																	
Efficiency		82% – 94% depending on model and DC load															
Noise level		55 dB(A) – 75 dB(A)															
Cooling		forced air cooling or natural convection (optional)										forced air cooling (redundant and/or demand controlled)					
Operating temperature		–10 to +40 deg C (up to 55 deg C optional)															
Storage temperature		–30 to +80 deg C															
Maximum altitude without derating		1000 masl (up to 4000 masl with derating)															
Allowable relative humidity		< 95% (non condensing)															
Protection degree		IP20 (up to IP54)															
Colour / Paint		RAL 7035 (other colour optional)															
Safety		IEC/EN 62040-1															
EMC		IEC/EN 62040-2															
Performance & Test		IEC/EN 60146-1-1 / IEC/EN 62040-5-3															
Conformity		CE-Label															
Quality / Environment		ISO 9001:2008 / ISO 14001:2004															
Dimension (IP20, basic configuration)																	
Height* (mm)		1900 (2100, 2300 optional)															
Width* (mm)	24 V	600	600	600	600	600	800	800	1200	1200	1200	1200	1200	1200	1200	1400	
	48/60 V																
	110/125 V																
	220 V																
Depth* (mm)	24 V	800										1000					
	48 V																
	110/125 V																
	220 V																
		50 A	100 A	150 A	200 A	300 A	400 A	500 A	600 A	800 A	1000 A	1200 A	1400 A	1600 A	1800A	2000 A	2200A

* dimensions for IP20 and basic configuration
Further data available on request

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