



# Technical Data Sheet

## SDC Rectifier/Battery Charger

- > 24–220 V
- > 25–1200 A



## Technical data SDC

### Rectifier input

Voltage	3x380/400/415V
Input voltage tolerance:	
DC in tolerance	+/-10 %
for function	+15 % / -25 %
(below -15 % the battery might begin to discharge)	
Frequency	50/ 60 Hz
Frequency tolerance	+/- 8 %
Power factor:	
at nominal line power and float voltage	~ 0.83
at -10 % line power and float voltage	~ 0.90
at +10 % line power and float voltage	~ 0.75

### DC output

Voltage	24/48/110/125/220VDC
Setting range:	
Float voltage at -10/+10 % line power voltage	100–120 %
Float voltage at 0/+10 % line power voltage	100–130 %
Boost voltage at nominal line power voltage	100–130 %
Initial charge voltage up to maximum	150 %
DC voltage tolerance	+/-1 %
Dynamic behavior:	
10–100 % and 100–10 % load step	maximum +/-10 %Vrms
regulation time	< 100 ms +/-2 %
DC ripple voltage	
Standard with parallel battery capacity of 3x nominal current:	
Optional without battery	≤2 % rms
Optional without battery	≤1 % rms
Optional without battery (24/48V)	≤2mV (at 800 Hz, psophometric)
DC current	according to type range
Setting range:	
Total output current limitation	50–100 %
Battery current limitation	0–100 %
DC current tolerance	+/-2 %
Characteristic	I-V according to DIN 41773
DC overcurrent capability	150 % for 2s

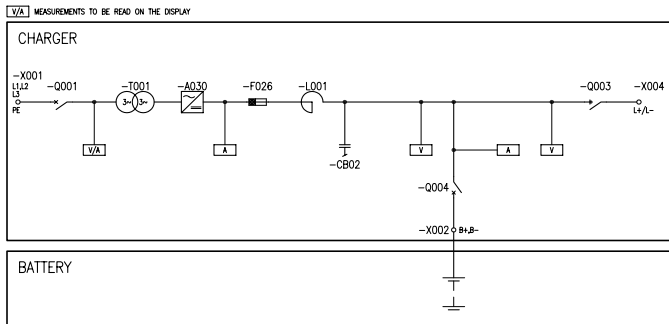
### General data

Ambient conditions	
Storage temperature range	from -20 to +70 °C
Operating temperature range	from -10 to +40 °C
Altitude above sea level	1000 m
Allowable air humidity	<95 % (non condensing)
Noise level standard n+1 fans	55–65 dBA
Noise level 100 % redundant fans	65–70 dBA
Degree of protection	IP20 according to IEC 60529
Paint	Pebble gray, RAL 7032 structured
Standards:	
Safety	IEC/EN 62040-1-2
EMC	IEC 62040-2, EN 50091-2
Performance	IEC/EN 62040-3, IEC 60146-1-1
Conformity	CE-Label
Efficiency	up to 94 % depending on type
Cooling	Natural convection up to 100A/220V and top forced-air ventilation with redundant n+1 monitored fans

**Data subject to change**

# Specification SDC

## Typical single-line drawing



## Output voltage & output current

Output voltage (VDC)	24	48	110	125	220
DC Output current (A)	-	-	-	-	25
	-	-	50	50	50
	-	100	100	100	100
	-	125	125	125	125
	-	160	160	160	160
	200	200	200	200	200
	250	250	250	250	250
	315	315	315	315	315
	400	400	400	400	400
	500	500	500	500	500
	630	630	630	630	630
	800	800	800	800	800
	1000	1000	1000	1000	1000
1200	1200	1200	1200	1200	

## Standard configuration

Single system	
Rectifier input voltage	3x400V +10/-10
Rectifier input frequency	50 Hz +/- 8%
Ripple filter	≤2% rms with parallel battery
6-pulse Rectifier with Isolation Transformer	
Rectifier input switch	
Fixed charging voltage IU characteristic	
System front panel w. mimic and add. LEDs for direct alarm display	
LCD display unit with keyboard	
External connection board:	
Common alarm 2x NO/NC	
Charger failure NO/NC	
Remote ON/OFF	
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 for signaling battery fuse/MCCB	
Connection for remote display	
RS232 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 100A)
Ambient temperature range from -10 to +40 °C

## Options

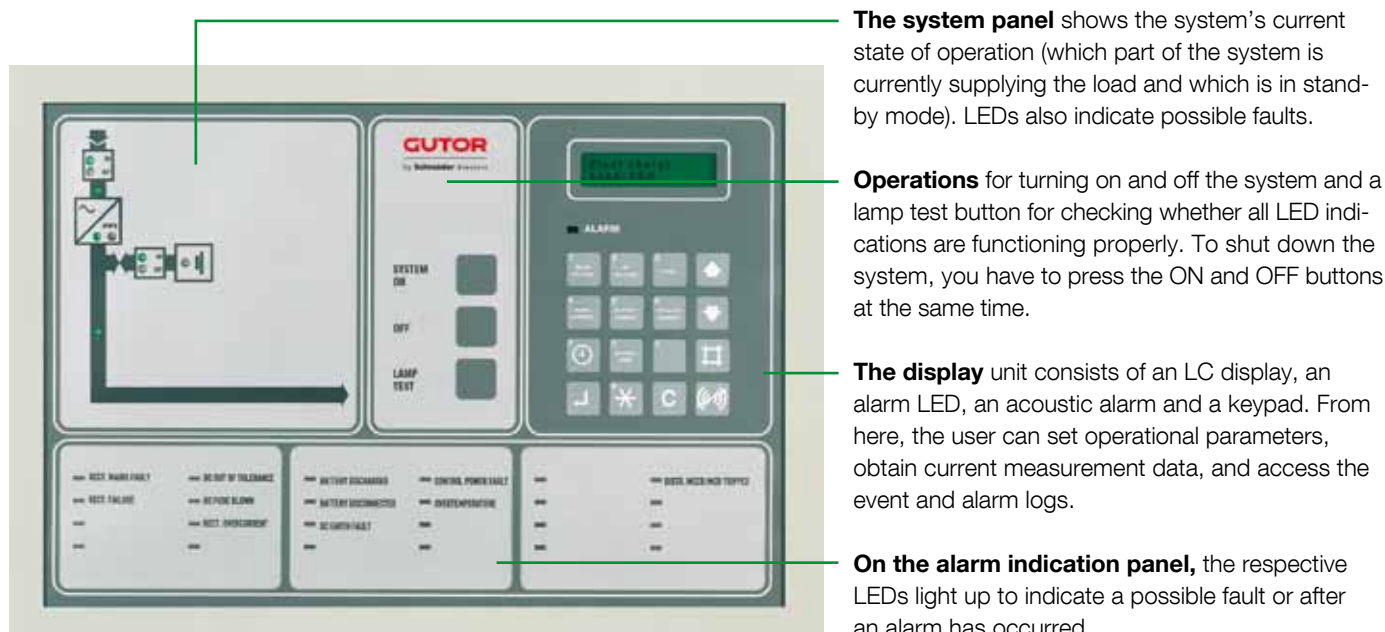
Parallel redundant configuration with load sharing	
Other input voltages (190–690 V)	
Rectifier input frequency 60 Hz +/- 8%	
Ripple filter	
≤ 1% rms without battery	
≤ 2% rms without battery	
≤ 2mV (at 800 Hz, psophometric)	
12-pulse rectifier with isolation transformer	
Rectifier input MCCB	
Sensor & cable for temperature-dependent battery charging, recommended for sealed VRLA batteries and wide temperature range	
Battery temperature alarm (with above sensor and cable)	
Serial diode (for parallel rectifiers)	
Rectifier output isolator	
Rectifier output circuit breaker	
Battery fuse in rectifier	
Battery fuse box	
Battery MCCB in rectifier	
Battery MCCB box	
Additional analog meters 96x96, cl. 1.5	
Relay board, 16 failsafe NO/NC contacts:	
Charger ON	4x programmable
Boost charge ON	Fan fault
Line power failure	DC current overload
DC out of tolerance	Internal PSU fault
Battery discharged	DC ground fault
Battery disconnected	Overtemperature
DC fuse blown	

Extended overload
Advanced battery monitor (programmable battery data)
Battery asymmetry supervision
RS-485 Interface
RJ-45 Ethernet port for Web browser based monitoring
RS-485 MODBUS Protocol (slave)
External time synchronization
Top cable entry
Top and bottom cable entry
Ventilation 100% redundant
Space heaters
Panel lighting
Ambient temperature maximum +55 °C
Allowable altitude < 4000 m above sea level
Air filters at air inlet
Protection up to IP52 (NEMA 12)
Seismic design
Aging tests
Other colors

**Additional options are available on request**

## Human-machine interface (front panel)

The front panel, which is identical for both AC and DC Systems, includes a comprehensive and flexible human-machine interface. It is divided into four sections:



### Operational parameters

Selectable second display language

Auto start

Charge mode (float/boost/initial)

Auto boost charge

Battery capacity test

Advanced battery monitor test (optional)

Set date/time

### Indication & measurements

Operating mode (float/boost/initial)

DC total current

Battery voltage and current

AC Rectifier line power voltage and current

Battery temperature (with optional sensor)

Time left in battery operation with current load (option only with advanced battery monitoring)

Event log with date/time (operating mode changes and alarms)

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