

Rectifier Power Core Flexibel AC input 6 kVA AC + 16-24 kW DC

The Rectifier building block combines both AC and DC feed into one common unit. Simultaneously it provides AC backup power for 230 V_{AC} loads, and 48 V_{DC} power for DC loads and battery charging.

The total DC output can be configured up to 24 kW DC load where the limitation for AC load is set to max 6 kVA.

The flexible AC input can be configured as 1 phase or 3 phase, both for IT and TN network, where the AC output is limited to 1 phase TN network. With this configuration a galvanic isolation between AC input/output is secured.



Rectifier Power Core Flexibel AC input

Up to 6 kVA AC & up to 24 kW 48 VDC output

Doc CTE20807R.DS3 – rev1

MODULAR ARCHITECTURE

RECTIFIER MODULE

The 3 port converter simultaneously provides power for AC and DC loads. During mains outage the Rectifier 48/1200 HE feeds AC loads using energy stored in the battery.

The modular architecture, industry-leading efficiency, compact size, innovative design and comprehensive monitoring and control features provide significant benefits over the current industry standard.



Rectifier Module

APPLICATIONS

TELECOM-MOBILE/WIRELESS

- LTE/4G/WiMAX
- Distributed antenna system
- Broadband
- Radio base stations/cell sites
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RAILWAY & METRO INFRASTRUCTURE

- Control & protection
- Signaling
- GSM-R
- Safety Systems
-

POWER UTILITIES

- Control & protection
- SCADA system

KEY FEATURES

- 230VAC SINGLE PHASE INPUT
- 230 VAC THREE PHASE (Δ) INPUT
- 400 VAC THREE PHASE (Y) INPUT
- SINGLE PHASE OUTPUT
- 48 VDC INPUT/OUTPUT
- MAX 6 KVA AC OUTPUT
- MAX 24 KW DC OUTPUT
- 1 POLE AC DISTRIBUTION OPTION
- 2 POLE AC DISTRIBUTION OPTION
- -48 VDC DISTRIBUTION OPTION
- BUILT IN TRANSFER TECHNOLOGY
- 150% OVERLOAD CAPABILITY, 15S
- 600% QUICK TRIP CURRENT, 20MS
- HOT PLUGGABLE
- SMARTPACK 2 CONTROLLER
- SMARTPACK S CONTROLLER
- OPERATES IN PARALELL WITH FLATPACK2 RECTIFIERS
- GLOBAL COMPLIANCE
- PATENTED HE TECHNOLOGY

Rectiverter Power Core Flexibel AC

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MODEL (OPTION 1) 6 KVA + 16 KW DC

Part number CTE20807R1.4000

INPUT DATA

Voltage range AC	Flexibel input
Voltage range DC	40-58 V
Maximum current AC (per phase)	35 A
Frequency	47-53 / 57-63 Hz
Power factor	> 0.99

OUTPUT DATA

Adjustable range AC	200-240 V
Adjustable range DC	43-58 V
Max output power AC	6,0 kVA
Max output power DC	16,0 kW
Power factor	0,8
Frequency	50Hz, 60 Hz

OTHER SPECIFICATIONS

1 pole AC distribution	10 pc, 2-10 A, C
-48 V _{DC} distribution	8 pc, 10-63 A, C
Battery breaker (plug-in)	3 pc, 100 A, D

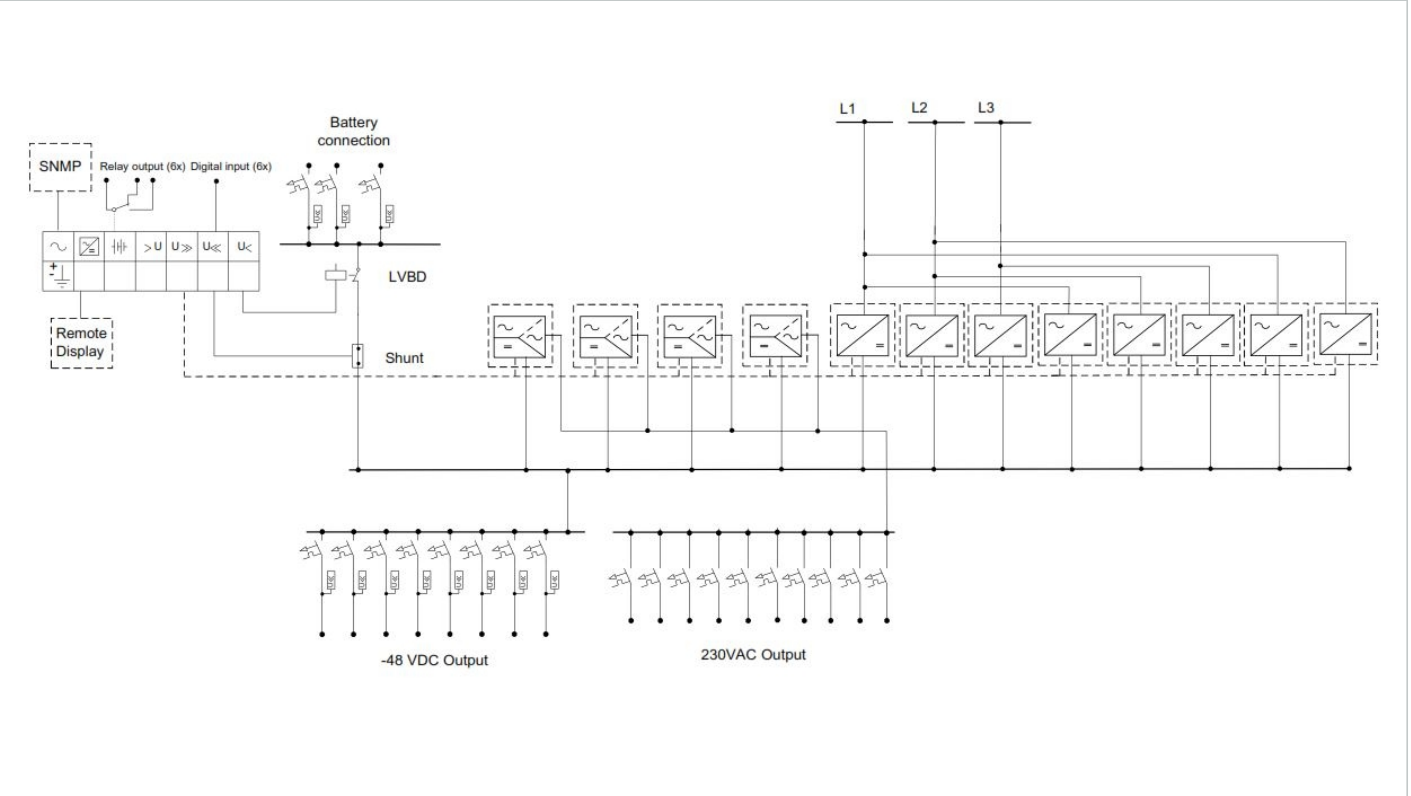
Specifications are subject to change without notice

FRONT VIEW 6KVA + 16 KW DC OPTION 1



Rectiverter 16,0 kW+6 kVA single phase power core (exact distribution see below)

SINGLE LINE 6 KVA + 16 KW DC OPTION 1



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Rectifier Power Core Flexibel AC

Doc CTE20807R.DS3 – rev1

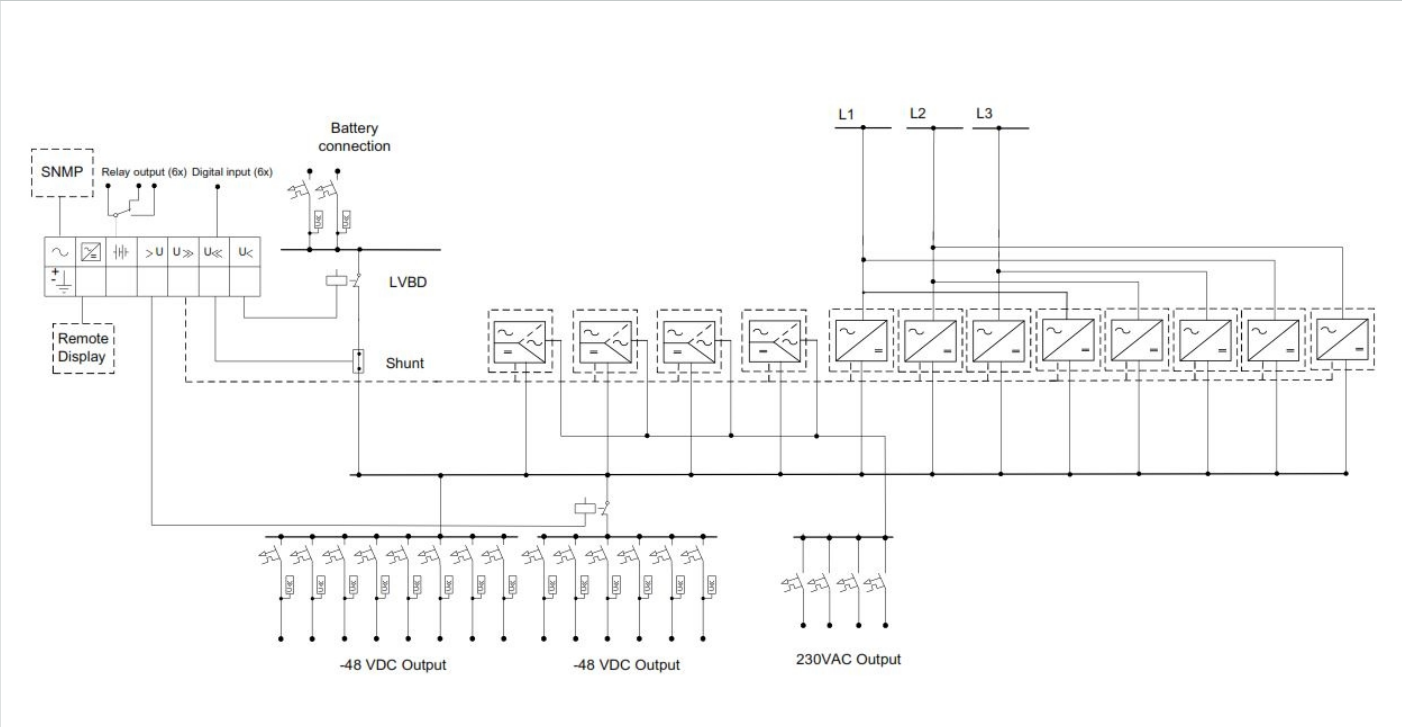
MODEL (OPTION 2)	6KVA + 16 KW DC
Part number	CTE20807R1.4001
INPUT DATA	
Voltage range AC	Flexibel AC input
Voltage range DC	40-58 V
Maximum current AC (per phase)	35 A
Frequency	47-53 / 57-63 Hz
Power factor	> 0.99
OUTPUT DATA	
Adjustable range AC	200-240 V
Adjustable range DC	43-58 V
Max output power AC	6,0 kVA
Max output power DC	16,0 kW
Power factor	0,8
Frequency	50Hz, 60 Hz
OTHER SPECIFICATIONS	
1 pole AC distribution	4 pc, 6-10 A, C
-48 V _{DC} distribution	14 pc, 10-63 A, C
Battery breaker (plug-in)	2 pc, 200 A, D
LVLD	1 pc, 150 A

Specifications are subject to change without notice



Rectiverter 16,0 kW+6 kVA single phase power core (exact distribution see below)

SINGLE LINE 6 KVA + 16 KW DC OPTION 2



Specifications are subject to change without notice

Rectifier Power Core Flexibel AC

Doc CTE20807R.DS3 – rev1

MODEL (OPTION 1) 6 KVA + 24 KW DC

Part number CTE30807R1.4000

INPUT DATA

Voltage range AC Flexibel input

Voltage range DC 40-58 V

Maximum current AC (per phase) 58 A

Frequency 47-53 / 57-63 Hz

Power factor > 0.99

OUTPUT DATA

Adjustable range AC 200-240 V

Adjustable range DC 43-58 V

Max output power AC 6,0 kVA

Max output power DC 24,0 kW

Power factor 0,8

Frequency 50Hz, 60 Hz

OTHER SPECIFICATIONS

1 pole AC distribution 4 pc, 2-10 A, C

-48 V_{DC} distribution 10 pc, 10-63 A, C

Battery breaker (plug-in) 3 pc, 200 A, D

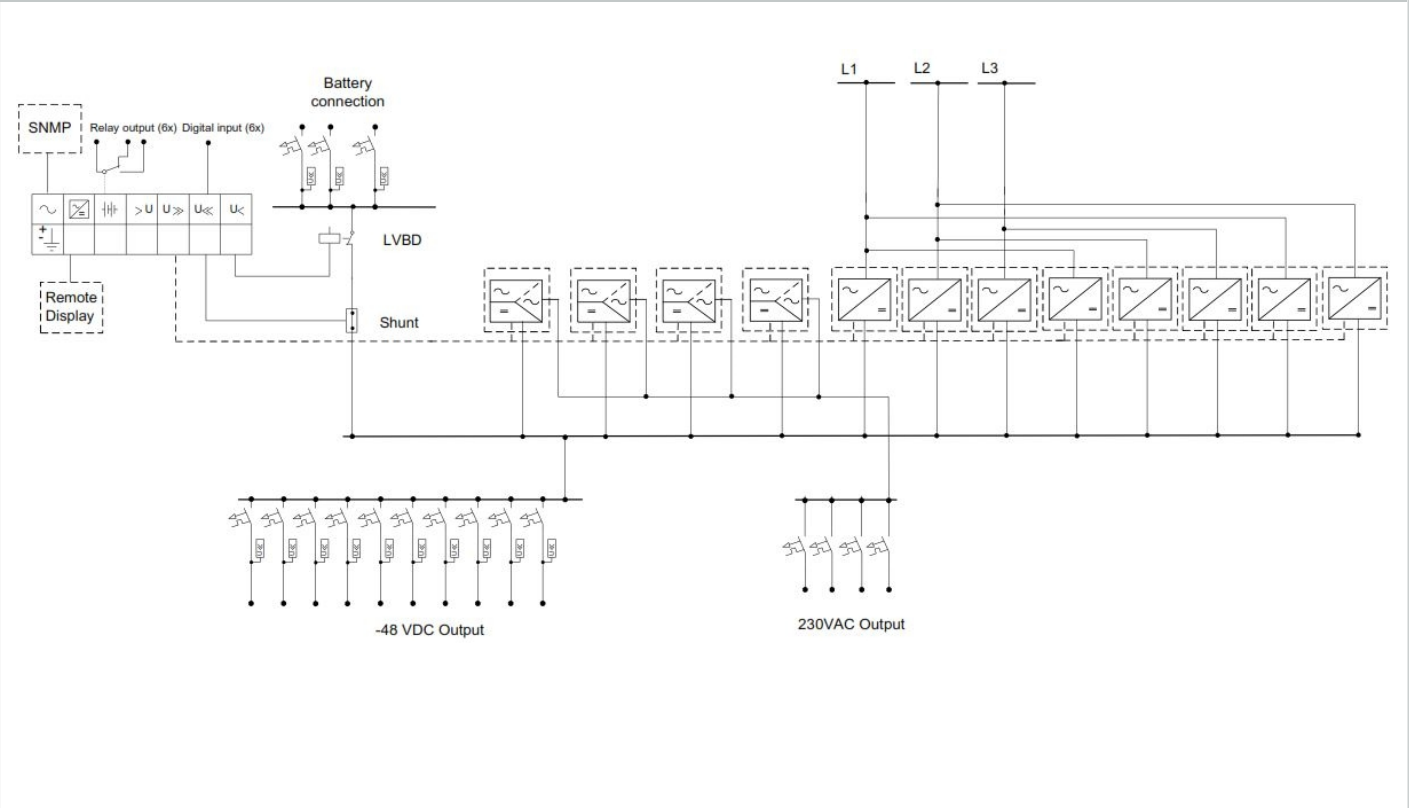
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FRONT VIEW 6KVA + 24 KW DC OPTION 1



Rectifier 24,0 kW+6 kVA single phase power core (exact distribution see below)

SINGLE LINE 6KVA + 24 KW DC OPTION 1



Rectifier Power Core Flexibel AC

Doc CTE20807R.DS3 – rev1

MODEL (OPTION 2)	6 KVA + 24 KW DC
Part number	CTE30807R1.4001
INPUT DATA	
Voltage range AC	Flexibel input
Voltage range DC	40-58 V
Maximum current AC (per phase)	58 A
Frequency	47-53 / 57-63 Hz
Power factor	> 0.99
OUTPUT DATA	
Adjustable range AC	200-240 V
Adjustable range DC	43-58 V
Max output power AC	6,0 kVA
Max output power DC	24,0 kW
Power factor	0,8
Frequency	50Hz, 60 Hz
OTHER SPECIFICATIONS	
1 pole AC distribution	4 pc, 2-10 A, C
-48 V _{DC} distribution	10 pc, 10-63 A, C
Battery breaker (plug-in)	2 pc, 250 A, D

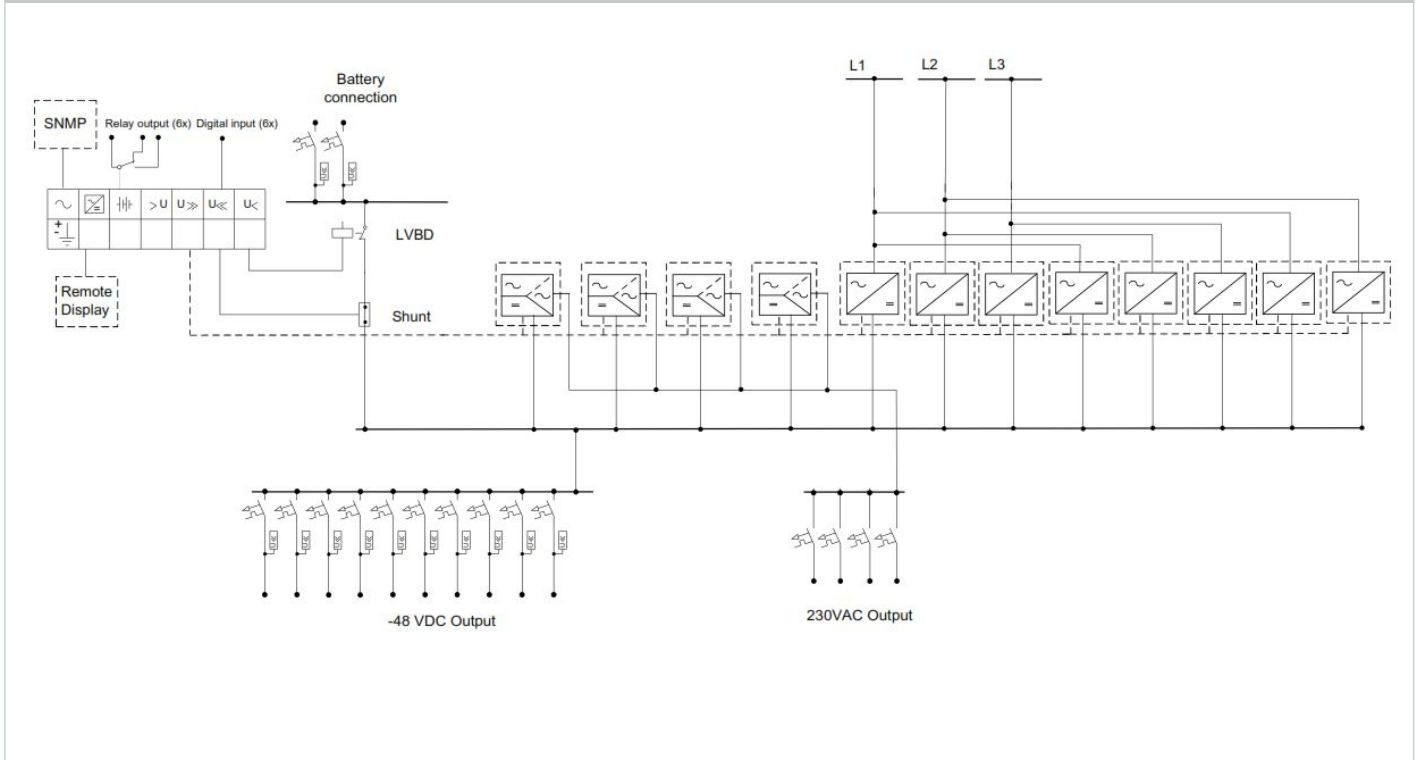
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FRONT VIEW 6KVA + 24 KW DC OPTION 2



Rectifier 24,0 kW+6 kVA single phase power core (exact distribution see below)

SINGLE LINE 6KVA + 24 KW DC OPTION 2



Rectifier Power Core Flexibel AC



Doc CTE20807R.DS3 – rev1

Models / ordering information	6kVA+16 kW-1	6kVA+16 kW-2	6kVA+24 kW-1	6kVA+24 kW-2
Part number	CTE20807R1.4000	CTE20807R1.4001	CTE30807R1.4000	CTE30807R1.4001
AC OUTPUT DATA				
Voltage (default) / (adjustable range)	230 V _{AC} / 200 - 240 V _{AC}			
Frequency (default inverter mode)	50 Hz (adaptive)			
Frequency (set-able inverter mode)	50Hz, 60Hz or last synced 50/60Hz (adaptive)			
Power maximum (continuous / overload (<15s))	4800 W (6000 VA) / 8000 VA			
Current maximum (continuous / overload (<15s))	26A _{RMS} / 34,8A _{RMS}			
Current (maximum) Quick trip (20ms)	120A (6 x nominal)			
Hold up (Voltage dips) (before switching to battery)	> 5 ms @ 4800W load			
THD	< 1.5 % at resistive load			
Output features	Fuse in L and N, Hot pluggable			
DC OUTPUT DATA				
Voltage (default) / (adjustable range)	53.5 V _{DC} / 43 - 58 V _{DC}			
Power (maximum @nominal input)	16 kW ¹⁾	16 kW ¹⁾	24 kW ¹⁾	24 kW ¹⁾
Current (maximum @V _{OUT} ≤ 48 V _{DC})	333 A ¹⁾	333 A ¹⁾	500 A ¹⁾	500 A ¹⁾
Hold up time, maximum output power	>10ms; V _{OUT} > 41 V _{DC}			
Output features	Short circuit proof, Over voltage Shutdown			
INPUT DATA				
AC Mains Input Voltage(flexible AC input)	230 V _{AC} single phase, 3phase (Δ), 230/400 V _{AC} 3phase (Y)			
Surge Protection	OVP Class 2			
AC Current/Phase(at nominal output voltage) (depending on module type)	35-58 A _{RMS}			
Frequency (default: sync range)	47-53 Hz			
Frequency (set-able: sync range)	47-53 Hz, 57-63 Hz or both (adaptive)			
Power Factor / THD	> 0.99 at 50% load or more / < 3.5%			
DC Voltage nominal / extended range (no overload) ²⁾	45 - 58 V _{DC} / 40 - 45 V _{DC}			
DC Current (maximum)	128 A / 180A during overload (15s)			
Input features	Fuse in L and N, Hot pluggable, Varistor, Hot pluggable AC input individual screw terminals 10 mm ² for L1, L2, L3, N & PE Battery breaker (plug-in type) , LVBD default			
LOAD DISTRIBUTION				
LVL	-	150 A	-	-
1 pole AC distribution (L connection directly on MCB)	2*2A, 4*6A, 4*10A, C	2*6, 2*10 A, C	2*6A, 2*10A C characteristics	
-48 V _{DC} distribution (no priority load)	-	2*10A, 2*32A, 2*63A	-	
-48 V _{DC} distribution (priority load)	2*10A, 2*16A, 2*32A, 2*63A		2*10A, 2*16A, 3*32A, 3*63A	
Battery breaker	3*100 A, D (plug-in)	2*200 A, D (plug-in)	3*200 A, D (plug-in)	2*250 A, D (plug-in)
OTHER SPECIFICATION				
Control and monitoring (see Smartpack datasheet)	Smartpack S panel mount		Smartpack 2	
Efficiency	>96% (mains mode (AC/AC and AC/DC)), >94% (inverter mode (DC/AC))			
Operating temperature	-40 to +55°C (-40 to +131°F), humidity 5 - 95% RH non-condensing			
Storage temperature	-40 to +85°C (-40 to +185°F), humidity 0 - 99% RH non-condensing			
Dimensions[WxDxH] / Weight	482 x 432 x 311mm (7U) (19 x 17 x 12,3") / 27kg (60 lbs)			
DESIGN STANDARDS				
Electrical safety	EN 60950-1, EN 62040-1 UPS safety			
EMC	ETSI EN 300 386 V.1.6.1, FCC CFR 47 Part 15 EN 61000-6-1 /-2/-3/-4			
Environment	ETSI EN 300 019: 2-1 (Class 1.2), 2-2 (Class 2.3) & 2-3 (Class 3.2) RoHS (2011/65/EU) and WEEE (2002/96/EC) compliant			

1) AC load has priority. Maximum available DC output power and current is dependent on instant AC load and AC input voltage; i.e maximum 10,9kW/18,9kW at full AC power and nominal input for 230V_{AC}.

2) 40 - 45 V_{DC}: reduced performance - no power boost and increased voltage THD on AC output.

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