Rectiverter Indoor system Scalable system 18-72 kVA with single AC input

The scalable Rectiverter indoor system provides AC backup power for 400 $V_{AC\ 3\text{-}phase}$ or 230 $V_{AC\ 1\text{-}phase}$ loads, and -48 V_{DC} power for battery charging. The flexible DC output can be set to recharge large battery backup with protection time up to 10 hours.

The systems are available in three configurations with maximum AC output power up to 36, 54 or 72 kVA. AC distributions are integrated in the cabinet with possible 3 phase or 1 phase load breakers.

In combination with AC output the system can also feed DC loads up to 57,6 kW with built in DC distribution for -48 V_{DC} loads.

Rectiverter Indoor system

Scalable system 18-72 kVA, with single AC input

Doc CTEJ4843.48.DS3 – rev2

MODULAR ARCHITECTURE

RECTIVERTER MODULE

The 3 port converter simultaneously provides power for AC and DC loads. During mains outage the Rectiverter 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.

Rectiverter Module

APPLICATIONS

TELECOM-MOBILE/WIRELESS

- LTE/4G/WiMAX
- Distributed antenna system
- Broadband
- Radio base stations/cell sites

RAILWAY & METRO INFRASTRUCTURE

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

POWER UTILITIES

- Control & protection
- SCADA system

KEY FEATURES

- 400 VAC 3 PHASE (Y) INPUT
- 400 VAC 3 PHASE (Y)OUTPUT
- 48 VDC INPUT/OUTPUT
- MAX 72 KVA / 57,6 KW AC OUTPUT
- MAX 56,7 KW DC OUTPUT
- AC DISTRIBUTION
- DC DISTRIBUTION OPTION
- LVBD OPTION
- MANUAL BYPASS OPTION
- UP TO 4 BATTERY STRINGS
- BUILT IN TRANSFER TECHNOLOGY
- 150% OVERLOAD CAPABILITY, 15S
- 600% QUICK TRIP CURRENT, 20MS
- HOT PLUGGABLE
- SMARTPACK 2 CONTROLLER
- GLOBAL COMPLIANCE
- PATENTED HE TECHNOLOGY

Scalable System 18-72 kVA, single input

Doc CTEJ4843.48.DS3 – rev2

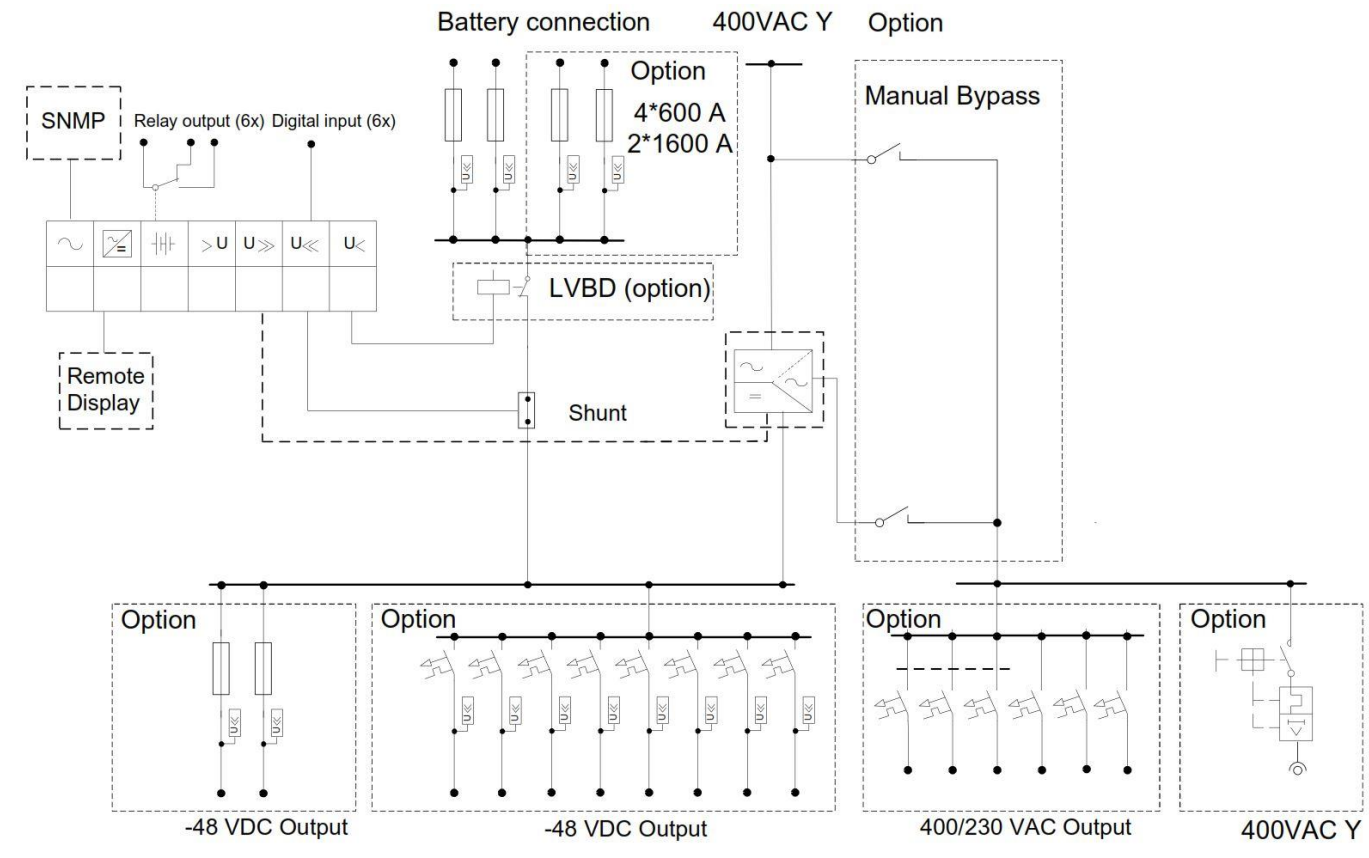
MODEL	48 KW
Part number	CTER2442.xxxx
INPUT DATA	
Voltage range AC (3 phase Y)	320-475 V
Voltage range DC	40-58 V
Maximum current AC (per phase)	56-96 A
Frequency	50 Hz / 60 Hz
Power factor	> 0.99
OUTPUT DATA	
Adjustable range AC (3 phase Y)	346-415 V
Adjustable range DC	43-58 V
Max output power AC	36,0 kVA / 28,8 kW
Max output power DC	28,8 kW
Admissible load power factor	0 Ind. to 0 Cap.
Frequency	50 Hz / 60 Hz
Battery breaker (1-pole)	2*1600 or 4*600 A
OPTIONS	
DC distribution	1 pole, 1-600 A
AC distribution	1-3 pole 2-63 A
Manual Bypass Switch	Internal
LVBD (1-pole)	1800 A

Specifications are subject to change without notice

FRONT VIEW 36 KVA SINGLE AC INPUT

Rectiverter 36 kVA single AC input (without front covers)

SINGLE LINE DIAGRAM 36 KVA SINGLE AC INPUT



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Scalable System 18-72 kVA, single input

Doc CTEJ4843.48.DS3 – rev2

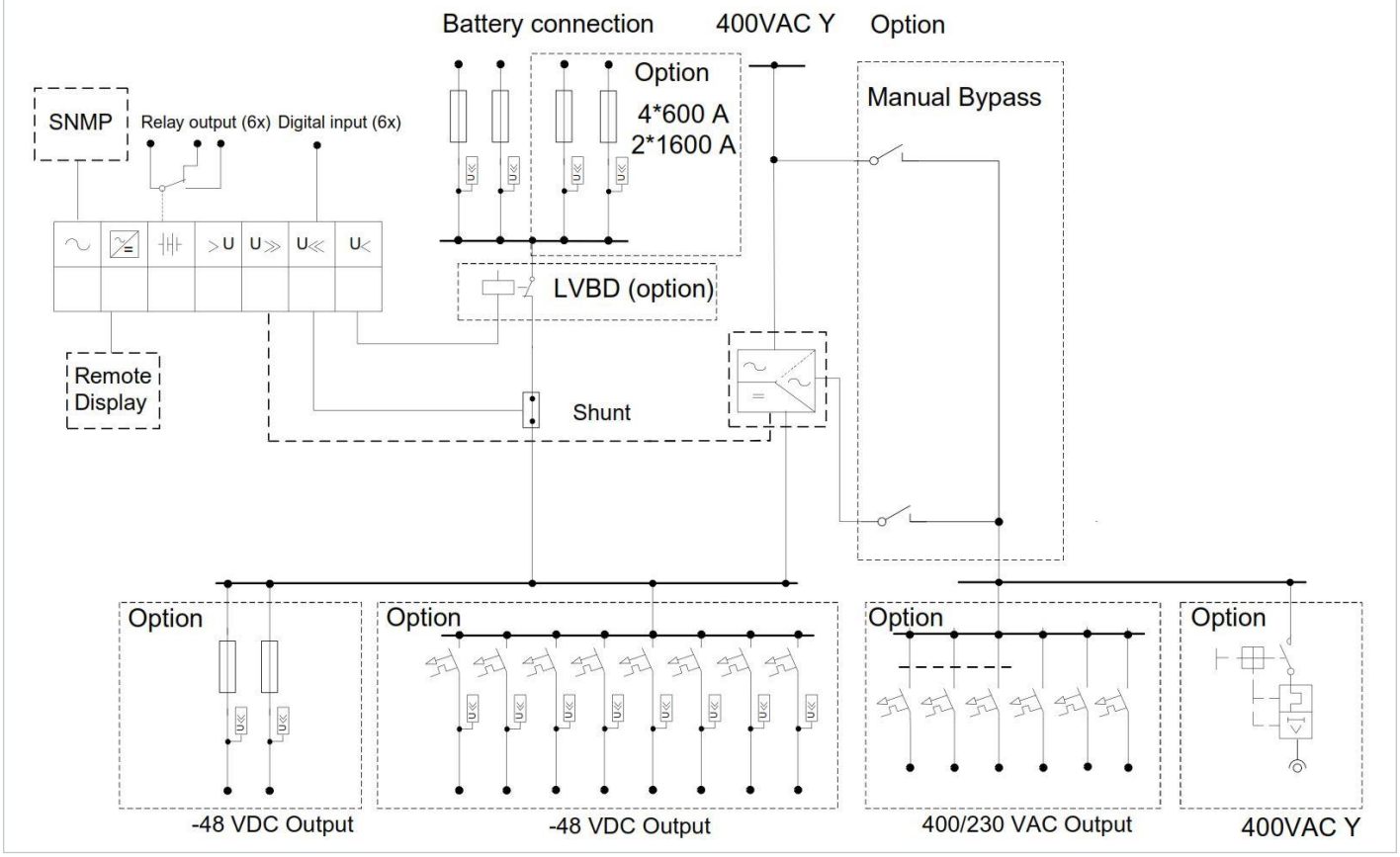
MODEL	72 KW
Part number	CTER3642.xxxx
INPUT DATA	
Voltage range AC (3 phase Y)	320-475 V
Voltage range DC	40-58 V
Maximum current AC (per phase)	84-144 A
Frequency	50 Hz / 60 Hz
Power factor	> 0.99
OUTPUT DATA	
Adjustable range AC (3 phase Y)	346-415 V
Adjustable range DC	43-58 V
Max output power AC	54,0 kVA / 43,2 kW
Max output power DC	43,2 kW
Admissible load power factor	0 Ind. to 0 Cap.
Frequency	50 Hz / 60 Hz
Battery breaker (1-pole)	2*1600 or 4*600 A
OTHER SPECIFICATIONS	
DC distribution	1 pole, 1-600 A
AC Distribution	1-3 pole 2-63 A
Manual Bypass Switch	Internal
LVBD (1-pole)	1800 A

Specifications are subject to change without notice

FRONT VIEW 54 KVA SINGLE AC INPUT

Rectiverter 54 kVA single AC Input (without front covers)

SINGLE LINE DIAGRAM 54 KVA SINGLE AC INPUT



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Scalable System 18-72 kVA, single input

Doc CTEJ4843.48.DS3 – rev2

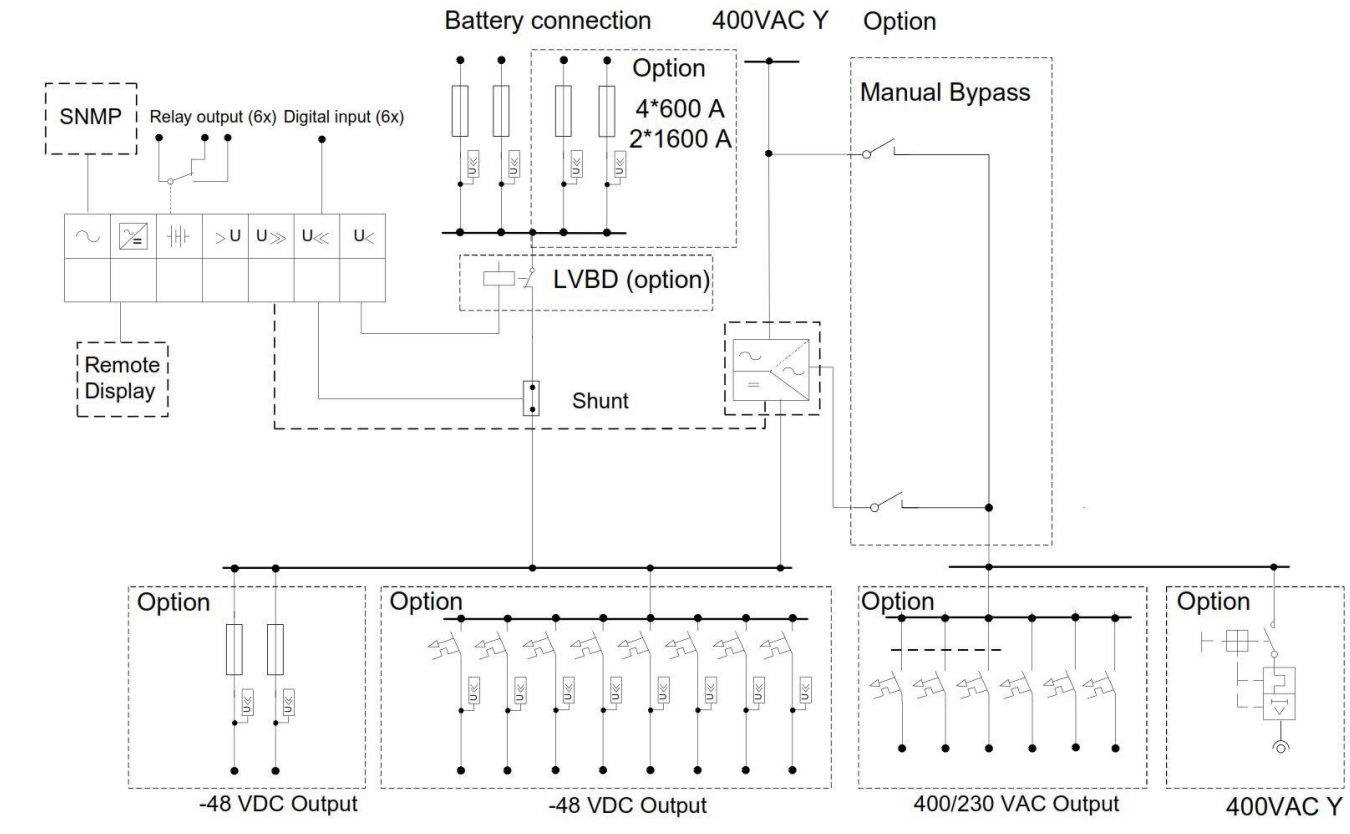
MODEL	96 KW
Part number	CTER4842.xxxx
INPUT DATA	
Voltage range AC (3 phase Y)	320-475 V
Voltage range DC	40-58 V
Maximum current AC (per phase)	112-192 A
Frequency	50 Hz / 60 Hz
Power factor	> 0.99
OUTPUT DATA	
Adjustable range AC (3 phase Y)	346-415 V
Adjustable range DC	43-58 V
Max output power AC	72,0 kVA / 57,6 kW
Max output power DC	57,6 kW
Admissible load power factor	0 Ind. to 0 Cap.
Frequency	50 Hz / 60 Hz
Battery breaker (1-pole)	2*1600 or 4*600 A
OTHER SPECIFICATIONS	
DC distribution	1 pole, 1-125 A
Ac distribution	1-3 pole 2-63 A
Manual Bypass Switch	Internal
LVBD (1-pole)	1800 A

Specifications are subject to change without notice

FRONT VIEW 72 KVA SINGLE AC INPUT

Rectiverter 72 kVA single AC Input (without front covers)

SINGLE LINE DIAGRAM 72 KVA SINGLE AC INPUT



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Scalable System 18-72 kVA, single input

Doc CTEJ4843.48.DS3 – rev2

Models / ordering information	36 kVA	54 kVA	72 kVA
Product family	CTER2442.4xxx	CTER3642.4xxx	CTER4842.4xxx
AC OUTPUT DATA			
Voltage (default) / (adjustable range)[1]	400 V_{AC} 3 phase (Y) / 346-415 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))	28,8 kW (36 kVA) / 48 kVA	43,2 kW (54 kVA) / 72 kVA	57,6 kW (72 kVA) / 96 kVA
Current maximum/phase(continuous overload(<15s))	52A_{RMS} / 69,6A_{RMS}	78A_{RMS} / 104,4A_{RMS}	104A_{RMS} / 139,2A_{RMS}
Current (maximum) Quick trip/phase (20ms)	256A (6 x nominal)	380A (6 x nominal)	512A (6 x nominal)
Hold up (Voltage dips) (before switching to battery)	> 5 ms @ full load		
THD	< 1.5 % at resistive load		
Output features	Module: Fuse in L and N , Hot pluggable 1 pole or 3 pole AC distribution (connection directly on MCB or MCCB) Max breaker capacity according to recommended max breaker for rectiverter module		
DC OUTPUT DATA			
Voltage (default) / (adjustable range)	53.5 V_{DC} / 43 - 58 V_{DC}		
Power (maximum @nominal input)	28,8 kW [2]	43,2 kW [2]	57,7 kW [2]
Current (maximum @V_{OUT} ≤ 48 V_{DC})	600 A [2]	900 A [2]	1200 A [2]
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(3 phase Y)	320-475 $V_{AC,}$		
AC Current/phase (depending on module type)	56-96 A_{RMS} [4]	84-144 A_{RMS} [4]	112-192 A_{RMS} [4]
Frequency (default: sync range)	47-53 & 57-63 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)[3]	45 - 58 V_{DC} / 40 - 45 V_{DC}		
DC Current (maximum)/ during overload (15s)	768 A / 1080 A	1152 A / 1620 A	1536 / 2160 A
Input features	Module : Fuse in L and N, Hot pluggable, Varistor, Hot pluggable AC input individual screw terminals 120 mm2 for L_1-L_3, N & PE		
BATTERY BREAKER			
1-pole battery breaker	2*TPS 2 holder (800-1600 A) or 4*TPS 00 holder (250-600 A)		
OPTIONS			
DC distribution (connection directly on breaker)	1-125 A, 1 pole MCB breaker (max 30 pc 18 mm, max 20 pc 27 mm)		
DC distribution (bulk output)	2*600 A (2*TPS 00 holder 250-600 A)		
Manual Bypass switch	2*200 A		
LVBD (1-pole)	1800 A		
OTHER SPECIFICATION			
Efficiency	>96% (mains mode (AC/AC and AC/DC)), >94% (inverter mode (DC/AC))		
Protection Class	IP 20		
Connection	Top or Bottom connection		
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	600 x 600x 2000mm (23,7 x 23,7 x 78,8") / 300 kg (1100 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, EN62040-2		
Environment	ETSI EN 300 019: 2-1 (Class 1.2), 2-2 (Class 2.3) Normal operating conditions to be as per IEC/EN 62040-3:2011 clause 4.1 RoHS (2011/65/EU) and WEEE (2002/96/EC) compliant		

1) Output voltage ranges configured in factory and have individual keying in top chassis

2) AC load has priority. Maximum **available** DC output power and current is dependent on instant AC load and AC input voltage; i.e maximum 800W/16,7A per module at full AC power and nominal input for 230V_{AC}.

3) 40 - 45 V_{DC}: reduced performance - no power boost and increased voltage THD on AC output.

4) If DC voltage is pulled below 43V the input current may increase above this level

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