

Rectifier Power Core 18 kVA 1ph or 3ph MB

The Rectifier power core combines both AC and DC feed into one common unit. Simultaneously it provides AC backup power for 3-phase or single phase AC loads, and 48 Vdc power for DC loads and battery charging.

The total output power for both AC and DC output is limited to max 24 kW. AC and DC output limits can be set according to the attached load, where the limitation for AC load is set to max 18 kVA and for DC load to max 14,4 kW



Rectifier Power Core 18 kVA 3ph or 1ph MB

Up to 18 kVA AC & up to 14,4 kW 48 VDC output

Doc CIOR1207.DS3 – rev3

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

POWER UTILITIES

- Low & High voltage switchgear
- Transformer & SUB stations
- Power Generation & Distribution
- Control & protection
- SCADA system

OFFSHORE AND PROCESS INDUSTRY

- Safety and Automation Systems (SAS)

MARINE

- Communication onboard ships

RAILWAY & METRO INFRASTRUCTURE

- Control & protection
- Signaling

TELECOM-MOBILE/WIRELESS

- LTE/4G/WiMAX
- Distributed antenna system
- Broadband

KEY FEATURES

- 230/400 VAC INPUT/OUTPUT
- THREE PHASE (Y) INPUT/OUTPUT
- ONE PHASE INPUT/OUTPUT
- 48 VDC INPUT/OUTPUT
- 24 KW TOTAL AC + DC OUTPUT
- MAX 18 KVA AC OUTPUT
- MAX 14,4 KW DC OUTPUT
- 1PHASE AC DISTRIBUTION OPTION
- 3PHASE AC DISTRIBUTION OPTION
- BUILT IN MANUAL BYPASS SWITCH
- BUILT IN TRANSFER TECHNOLOGY
- 150% OVERLOAD CAPABILITY, 15S
- 600% QUICK TRIP CURRENT, 20MS
- HOT PLUGGABLE
- SMARTPACK 2 CONTROLLER
- CAN OPERATE IN PARALELL WITH FLATPACK2 RECTIFIERS
- GLOBAL COMPLIANCE
- PATENTED HE TECHNOLOGY

Rectifier Power Core 18 kVA MB



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MODEL (1PHASE)	24 KW
Part number	CIOR1207.1xxx
INPUT DATA	
Voltage range AC (1 phase)	185-275 V
Voltage range DC	40-58 V
Maximum current AC	84-144 A
Frequency	47-53 / 57-63 Hz
Power factor	> 0.99
OUTPUT DATA	
Adjustable range AC (1 phase)	200-240 V
Adjustable range DC	43-58 V
Max output power AC	18,0 kVA
Max output power DC	14,4 kW
Admissible load power factor	0 Ind. to 0 Cap.
Frequency	50Hz, 60 Hz
OTHER SPECIFICATIONS	
Manual bypass switch	3*63 A
LVBD (option)	350 A
1 pole AC distribution (option)	1-18 pc, 2-20 A, C,B

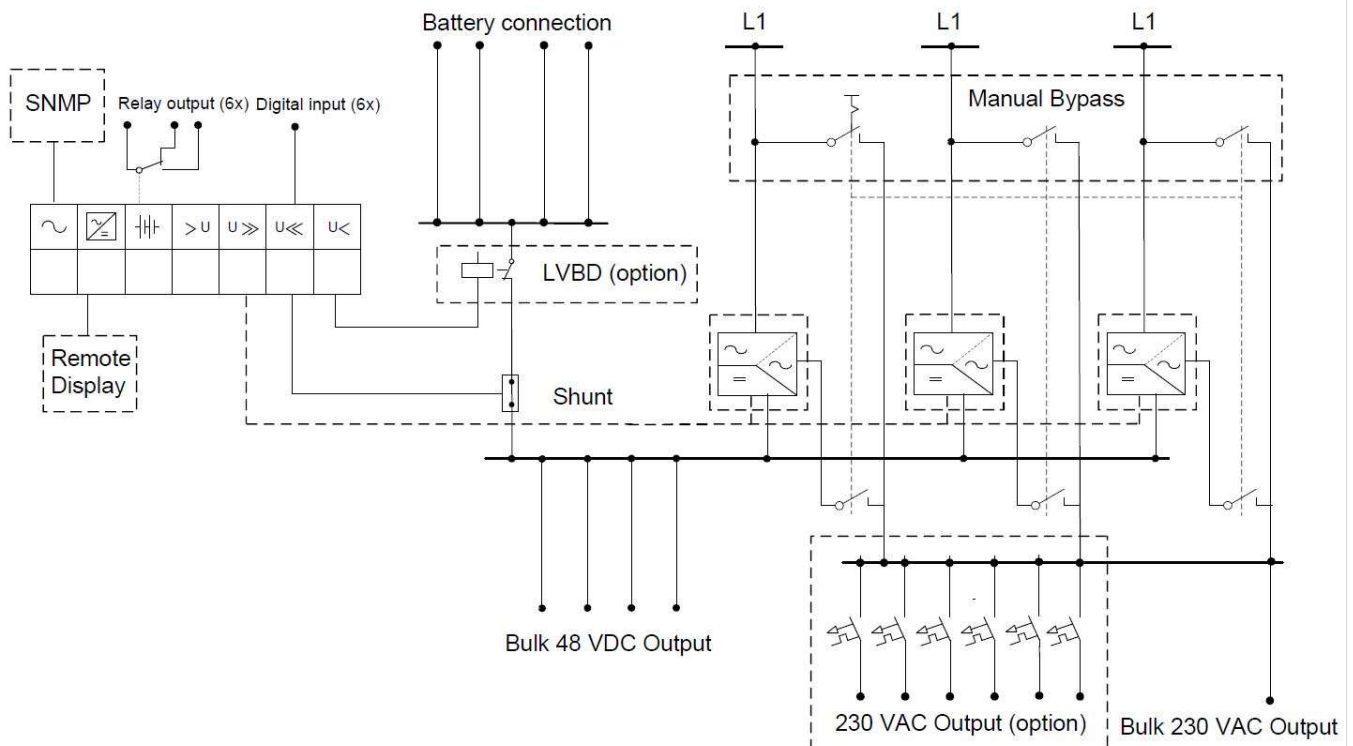
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TOP VIEW



Rectifier 18 kVA 1- phase power core

SINGLE LINE 18 KVA 1PHASE SYSTEM WITH OPTIONAL 1 POLE AC DISTRIBUTION



Rectifier 18 kVA 1- phase power core

Rectifier Power Core 18 kVA MB



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MODEL (3PHASE) 24 KW

Part number CIOR1207.1xxx

INPUT DATA

Voltage range AC (3 phase Y)	320-475 V
Voltage range DC	40-58 V
Maximum current AC (per phase)	28-48 A
Frequency	47-53 / 57-63 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	18,0 kVA
Max output power DC	14,4 kW
Admissible load power factor	0 Ind. to 0 Cap.
Frequency	50Hz, 60 Hz

OTHER SPECIFICATIONS

Manual bypass switch	63 A
LVBD (option)	350 A
3 pole AC distribution (option)	1-6 pc, 2-20 A, C,B
1 pole AC distribution (option)	1-18 pc, 2-20 A, C,B

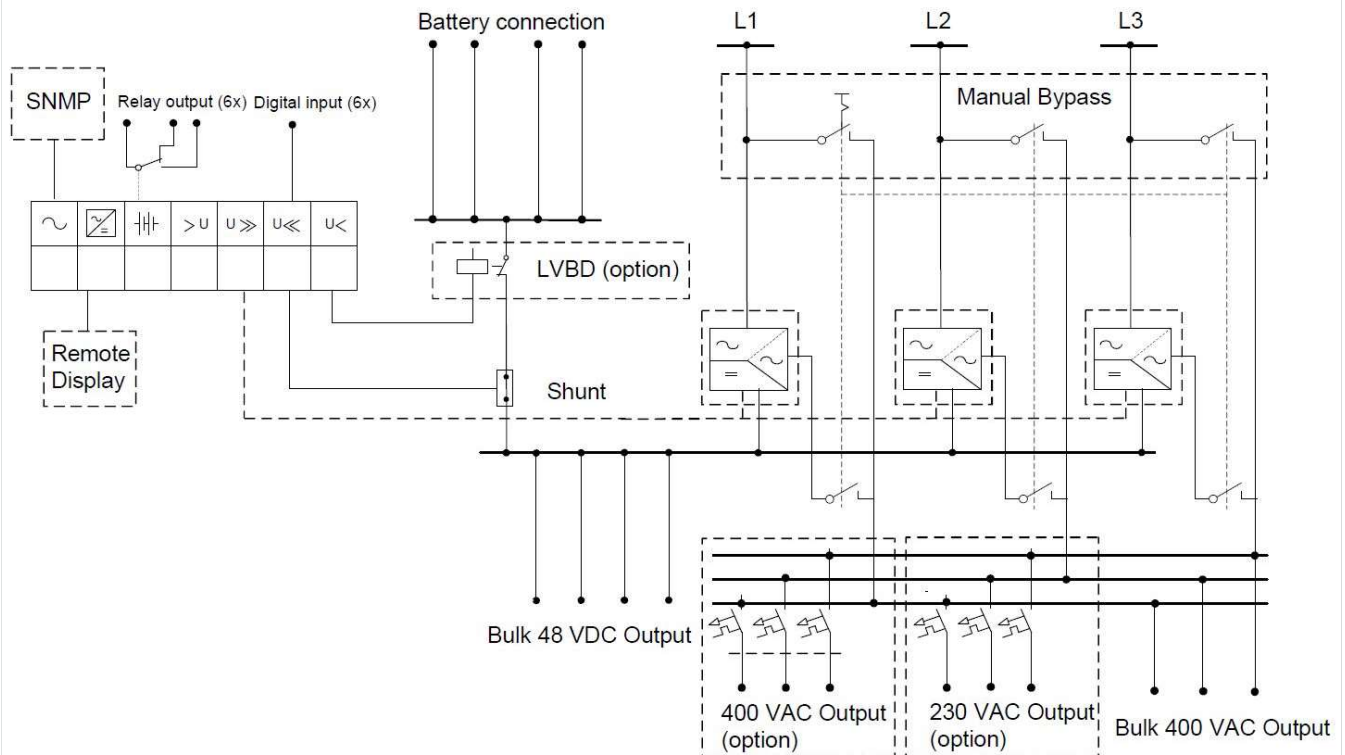
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TOP VIEW



Rectifier 18 kVA 3- phase power core

SINGLE LINE 18 KVA 3PHASE SYSTEM WITH OPTIONAL 1 OR 3 POLE AC DISTRIBUTION



Rectifier 18 kVA 3- phase power core

Rectifier Power Core 18 kVA MB

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Models / ordering information	24 kW, 230 V 1ph	24 kW, 400 V 3ph
Product family	CIOR1207.1xxx	
AC OUTPUT DATA		
Voltage (default) / (adjustable range) ¹⁾	230 VAC / 200 - 240 VAC	400 VAC 3 phase (Y) / 346-415 VAC
Frequency (default inverter mode)	50Hz (adaptive)	
Frequency (set-able inverter mode)	50Hz, 60Hz or last synced 50/60Hz (adaptive)	
Power maximum (continuous / overload (<15s))	14,4 kW (18 kVA) / 24 kVA	
Current maximum/phase (continuous / overload (<15s))	78A _{RMS} / 104,4A _{RMS}	26A _{RMS} / 34,8A _{RMS}
Current (maximum) Quick trip/phase (20ms)	384 A (6 x nominal)	128 A (6 x nominal)
Hold up (Voltage dips) (before switching to battery)	> 5 ms @ 14,4 kW 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)	14,4 kW ²⁾	
Current (maximum @V _{OUT} ≤ 48 V _{DC})	300 A ²⁾	
Hold up time, maximum output power	>10ms; V _{OUT} > 41 V _{DC}	
Output features	Short circuit proof, Over voltage Shutdown, Bulk DC output connection to M8 bolt	
INPUT DATA		
AC Mains Input Voltage(3 phase Y)	185 - 275 V _{AC} (single phase)	320 - 475 V _{AC} (3 phase Y)
AC Current/phase(at nominal output voltage) (depending on module type)	84-144 A _{RMS} ⁴⁾	28-48 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)	384 A / 540 A during overload (15s)	
Input features	Fuse in L and N, Hot pluggable, Varistor, Hot pluggable AC input individual screw terminals 10 mm ² for L ₁ ,L ₂ ,L ₃ , or L ₁ ,L ₁ ,L ₁ + N & PE Bulk DC input connection to M8 bolt Bulk DC battery connection to M8 bolt	
OPTIONS		
Control and monitoring (see Smartpack2 datasheet)	Smartpack2, including industrial basic & I/O monitor type 2	
LVBD	350 A	
1 pole AC distribution (L connection directly on MCB)	1-18 pc, 2-20A, C or B characteristics	1-18 pc, 2-20A, C or B characteristics
3 pole AC distribution (L ₁ -L ₃ connection directly on MCB)	-	1-6 pc, 2-20A, C or B characteristics
OTHER SPECIFICATION		
Efficiency	>96% (mains mode (AC/AC and AC/DC)), >94% (inverter mode (DC/AC))	
Manual bypass switch	63 A (make before break)	
Protection Class	IP 20	
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, 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	
<small>1) Output voltage ranges configured in factory and have individual keying in top chassis 3) 40 - 45 V_{DC}: reduced performance - no power boost and increased voltage THD on AC output. 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 9600W/195 A at full AC power and nominal input for 230V_{AC}. 4) If DC voltage is pulled below 43V the input current may increase above this level</small>		

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