Rectiverter Power Core 18 kVA 1ph or 3ph MB

The Rectiverter 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.

Rectiverter Power Core 18 kVA 3ph or 1ph MB
Up to 18 kVA AC & up to 14,4 kW 48 VDC output

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.

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
Rectiverter Power Core 18 kVA MB

**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

Specifications are subject to change without notice

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

Rectiverter 18 kVA 1-phase power core
Rectifier Power Core 18 kVA MB

**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

Specifications are subject to change without notice

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

![Schematic Diagram]

Rectifier 18 kVA 3-phase power core
## Rectifier Power Core 18 kVA MB

**Doc CIOR1207.DS3 – rev3**

### Models / ordering information

<table>
<thead>
<tr>
<th>Product family</th>
<th>CIOR1207.1xxx</th>
</tr>
</thead>
</table>

### AC OUTPUT DATA

<table>
<thead>
<tr>
<th>Voltage (default) / (adjustable range)</th>
<th>230 VAC / 200 - 240 VAC</th>
<th>400 VAC 3 phase (Y) / 346-415 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency (default inverter mode)</td>
<td>50Hz (adaptive)</td>
<td></td>
</tr>
<tr>
<td>Frequency (set-able inverter mode)</td>
<td>50Hz, 60Hz or last synced 50/60Hz (adaptive)</td>
<td></td>
</tr>
<tr>
<td>Power maximum (continuous / overload (&lt;15s))</td>
<td>14,4 kW (18 kVA) / 24 kVA</td>
<td></td>
</tr>
<tr>
<td>Current maximum/phase (continuous / overload (&lt;15s))</td>
<td>78A&lt;sub&gt;RMS&lt;/sub&gt; / 104,4A&lt;sub&gt;RMS&lt;/sub&gt;</td>
<td></td>
</tr>
<tr>
<td>Current (maximum) Quick trip/phase (20ms)</td>
<td>384 A (6 x nominal)</td>
<td>128 A (6 x nominal)</td>
</tr>
<tr>
<td>Hold up (Voltage dips) (before switching to battery)</td>
<td>&gt; 5 ms @ 14,4 kW load</td>
<td>&lt; 1.5 % at resistive load</td>
</tr>
</tbody>
</table>

### DC OUTPUT DATA

<table>
<thead>
<tr>
<th>Voltage (default) / (adjustable range)</th>
<th>53.5 V&lt;sub&gt;DC&lt;/sub&gt; / 43 - 58 V&lt;sub&gt;DC&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (maximum @nominal input)</td>
<td>14,4 kW&lt;sup&gt;2)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Current (maximum @V&lt;sub&gt;OUT&lt;/sub&gt; ≤ 48 V&lt;sub&gt;DC&lt;/sub&gt;)</td>
<td>300 A&lt;sup&gt;2)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Hold up time, maximum output power</td>
<td>&gt;10ms; V&lt;sub&gt;OUT&lt;/sub&gt; &gt; 41 V&lt;sub&gt;DC&lt;/sub&gt;</td>
</tr>
<tr>
<td>Output features</td>
<td>Short circuit proof, Over voltage Shutdown, Bulk DC output connection to M8 bolt</td>
</tr>
</tbody>
</table>

### INPUT DATA

<table>
<thead>
<tr>
<th>AC Mains Input Voltage(3 phase Y)</th>
<th>185 - 275 V&lt;sub&gt;AC&lt;/sub&gt; (single phase)</th>
<th>320 - 475 V&lt;sub&gt;AC&lt;/sub&gt; (3 phase Y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Current/phase (at nominal output voltage) (depending on module type)</td>
<td>84-144 A&lt;sub&gt;RMS&lt;/sub&gt;</td>
<td>28-48 A&lt;sub&gt;RMS&lt;/sub&gt;</td>
</tr>
<tr>
<td>Frequency (default: sync range)</td>
<td>47-53 &amp; 57-63 Hz</td>
<td></td>
</tr>
<tr>
<td>Frequency (set-able: sync range)</td>
<td>47-53 Hz, 57-63 Hz or both (adaptive)</td>
<td></td>
</tr>
<tr>
<td>Power Factor / THD</td>
<td>&gt; 0.99 at 50% load or more / &lt; 3.5%</td>
<td></td>
</tr>
<tr>
<td>DC Voltage nominal / extended range (no overload)&lt;sup&gt;3)&lt;/sup&gt;</td>
<td>45 - 58 V&lt;sub&gt;DC&lt;/sub&gt; / 40 - 45 V&lt;sub&gt;DC&lt;/sub&gt;</td>
<td></td>
</tr>
<tr>
<td>DC Current (maximum)</td>
<td>384 A / 540 A during overload (15s)</td>
<td></td>
</tr>
</tbody>
</table>

**Input features**

- Fuse in L and N. Hot pluggable
- Varistor. Hot pluggable
- AC input individual screw terminals 10 mm2 for L<sub>1</sub>,L<sub>2</sub>,L<sub>3</sub>, or L<sub>1</sub>,L<sub>1</sub>,L<sub>1</sub> + 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
- 3 pole AC distribution (L<sub>1</sub>-L<sub>3</sub> connection directly on MCB) 1-18 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

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 8600W/195 A at full AC power and nominal input for 230VAC.
3) 40 - 45 V<sub>dc</sub>: 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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