

# Rectiverter 2U, 6kVA Integrated System

The Rectiverter 2U 19" Integrated System can be used as a standalone system with bulk AC & DC outputs in industrial applications where a 230/115 V<sub>AC</sub> and 110 V<sub>DC</sub> backup is needed.

The total output power for both AC and DC is limited to a total 8 kW. AC and DC output limits can be set according to the connected load, where the limitation for AC load is set to max 6 kVA and for DC load to max 4,8 kW.

As additional options, the measuring and signaling can be widely extended with the I/O Monitor or Fleximonitor CAN nodes.



## Rectiverter 2U, 6kVA Integrated System 110 V<sub>DC</sub> Systems with Smartpack2 Touch & Basic/Basic Industrial

DOC. NO: CIOR0402110.DS3, rev1

### MODULAR ARCHITECTURE

#### RECTIVERTER MODULE

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

#### 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

- COMPACT DESIGN AND SIMPLE INSTALLATION
- SINGLE PHASE 230 OR 115 V<sub>AC</sub> INPUT/OUTPUT
- 110 V<sub>DC</sub> INPUT/OUTPUT
- HOUSE UP TO 4 RECTIVERTER MODULES
- 8 KW TOTAL AC + DC OUTPUT
- MAX 6 kVA AC OUTPUT
- MAX 4,8 kW DC OUTPUT
- BULK FEED OUTPUTS AC + DC
- BUILT IN TRANSFER TECHNOLOGY
- 150 % OVERLOAD CAPABILITY, 15 s
- 600 % QUICK TRIP CURRENT, 20 ms
- HOT PLUGGABLE
- SMARTPACK2 TOUCH CONTROLLER
- PROGRAMMABLE MULTIPURPOSE INPUTS AND OUTPUTS

# Rectifier Integrated 2U 19"

Doc CIOR0402110.DS3 – rev1

**MODEL 110 V<sub>DC</sub>** 8 kW / 4 kW

**Product family** CIOR0402.1xxx

### INPUT DATA

Voltage range AC	185-275 / 95-140 V <sub>AC</sub>
Voltage range DC	102-145 V <sub>DC</sub>
Maximum current AC	32,8-46 A
Frequency	47-53 / 57-63 Hz
Power factor	> 0,99

### OUTPUT DATA

Adjustable range AC	200-240 / 100-127 V <sub>AC</sub>
Adjustable range DC	97-145 V <sub>DC</sub>
Max output power AC	6,0 / 3,0 kVA
Max output power DC	4,8 / 2,4 kW
Power factor	0,8
Frequency	50 Hz, 60 Hz

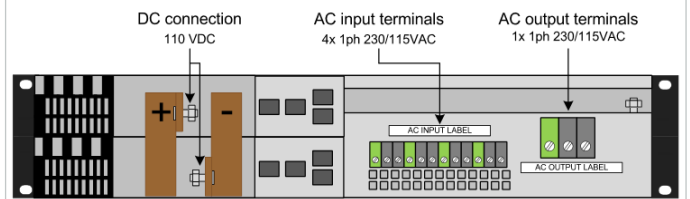
### OTHER SPECIFICATIONS

Control unit (master)	SP2 Touch
Control unit (basic)	SP2 Basic or Basic Industrial
CAN node	I/O Type 2 or Fleximonitor

### FRONT VIEW – RECTIFIER INTEGRATED 2U

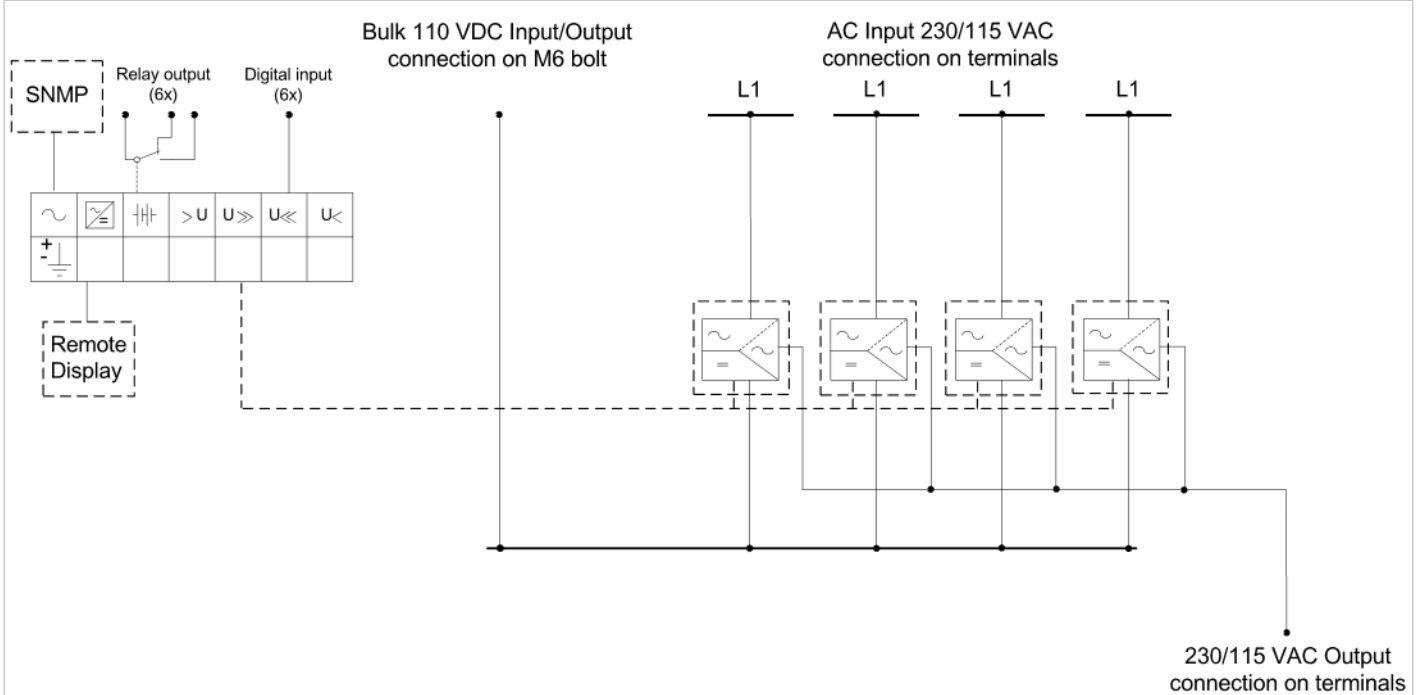


### REAR VIEW – RECTIFIER INTEGRATED 2U



Specifications are subject to change without notice

### SINGLE LINE FOR 110 V<sub>DC</sub> WITH SMARTPACK2 TOUCH & BASIC/BASIC INDUSTRIAL



# Rectifier Integrated 2U 19"



Doc CIOR0402110.DS3 – rev1

Models	8 kW, 230 V <sub>AC</sub>	4 kW, 115 V <sub>AC</sub>
Product family	CIOR0402.1xxx	CIOR0402.1xxx
<b>AC OUTPUT DATA</b>		
Voltage (default) / (adjustable range) <sup>1)</sup>	230 V <sub>AC</sub> / 200-240 V <sub>AC</sub>	115 V <sub>AC</sub> / 100-127 V <sub>AC</sub>
Frequency (inverter mode – default)	50 Hz (adaptive)	60 Hz (adaptive)
Frequency (inverter mode – settable)	50 Hz, 60 Hz or last synced 50 / 60 Hz (adaptive)	
Power maximum (continuous / overload <15s)	4800 W (6000 VA) / 8000 VA	2400 W (3000 VA) / 4000 VA
Current maximum (continuous / overload <15s)	26 A <sub>RMS</sub> / 34,8 A <sub>RMS</sub>	
Current (maximum) quick trip (20ms)	128 A (6 x nominal)	
Hold up (Voltage dips) (before switching to battery)	5 ms	5 ms
THD	< 1,5 % at resistive load	
Protection	Fuse in L, Hot pluggable, Varistor	
<b>DC OUTPUT DATA</b>		
Voltage (default) / (adjustable range)	122,5 V <sub>DC</sub> / 97-145 V <sub>DC</sub>	
Power (maximum @ nominal input)	4800 W <sup>2)</sup>	2400 W <sup>2)</sup>
Current (maximum @ V <sub>OUT</sub> ≤ 108 V <sub>DC</sub> )	44,4 A <sup>2)</sup>	22,2 A <sup>2)</sup>
Current sharing (10 - 100% load)	±5 % of maximum current from 10 to 100 % load	
Protection	Short circuit proof, Over voltage shutdown, Reversed polarity and Fuse	
<b>INPUT DATA</b>		
AC Mains Input Voltage (range / LV disconnect)	185-275 V <sub>AC</sub> / 170 V <sub>AC</sub>	95-140 V <sub>AC</sub> / 85 V <sub>AC</sub>
AC Current (maximum - depends on module type)	32,8-46 A <sub>RMS</sub> <sup>3)</sup>	36,8-45,2 A <sub>RMS</sub> <sup>3)</sup>
Frequency (default: sync range)	47-53 & 57-63 Hz	57-63 & 47-53 Hz
Frequency (settable: sync range)	47-53 Hz, 57-63 Hz or both (adaptive)	
Power Factor / THD	> 0,99 at 70% load or more / < 3,5 %	
DC Voltage nominal / extended range <sup>4)</sup>	102-145 V <sub>DC</sub> / 90-102 V <sub>DC</sub>	
DC Current (maximum)	50 A / 72 A during overload (15 s)	25,2 A / 36 A during overload (15 s)
Input features	Fuse in L and N, Hot pluggable, Varistor AC input individual screw terminals 4 mm <sup>2</sup> for L, N & PE (4x single phase)	
<b>OPTIONS</b>		
Control and Monitoring (master unit)	Smartpack2 Touch	
Control and Monitoring (basic unit)	Smartpack2 Basic or Basic Industrial	
Controller CAN node	I/O Monitor T2 or Fleximonitor (with Relay box)	
AC distribution	AC output individual screw terminals 10 mm <sup>2</sup> for L, N & PE (1x single phase)	
DC distribution	DC bulk connection on 2x M6 bolt	
<b>OTHER SPECIFICATION</b>		
Efficiency	> 96 % (mains mode), > 95 % (inverter mode)	> 93 % (mains mode), > 92 % (inverter mode)
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 [W x D x H] <sup>5)</sup>	482 x 400 x 89 mm (2U) (19 x 15,7 x 3,5 inch)	
Weight	9,4-9,9 kg (20,7-21,8 lbs)	
<b>DESIGN STANDARDS</b>		
Electrical safety	EN 60950-1, EN 62040-1 UPS safety	
EMC	ETSI EN 300 386 V2.1.1, FCC CFR 47 Part 15 EN 62040-2 EN 61000-6-1/-2/-3/-4/-5	
Environment	ETSI EN 300 019: 2-1 (Class 1.2), 2-2 (Class 2.3) & 2-3 (Class 3.2) Normal operating conditions as per IEC 62040-3:2011 clause 4.2. Other operating conditions as per IEC 62040-3:2011 clause 4.3, must be advised RoHS 3 (2015/863/EU) and WEEE (2008/98/EC) compliant	

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

3) If DC port is overloaded pulling the voltage below 97 V the input current may increase above this level.

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 3200 W / 29,6 A at full AC power and nominal input for 230 V<sub>AC</sub>.

4) Reduced performance - no over load support, and for 200-240 V<sub>AC</sub> output THD will increase and maximum output power de-rates (to 970 W for 230 V<sub>AC</sub> @ 90 V<sub>DC</sub>)

5) The system is 40 mm (0,4 inch) deeper in case of variant with Basic Industrial control unit

Specifications are subject to change without notice