

# MRC 110-1600 MRC 220-1600

Rectifier Modules  
for OPUS C Series  
DC Power Systems



## General description

MRC rectifier modules are designed and optimised for demanding industrial and telecom applications.

These convection cooled MRC rectifiers are the key building blocks of OPUS C Series DC Power Systems. The rectifier delivers 1600W output power at 110 VDC or 220 VDC, with a single phase, semi-wide input voltage range.

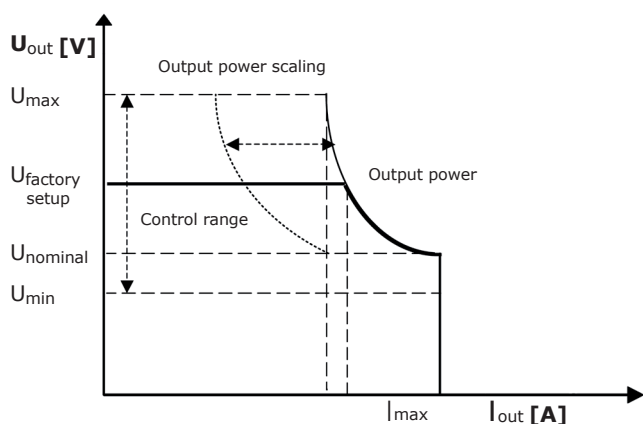


Figure 1. Output power characteristics.

MRC rectifiers may be operated either with a system controller or as stand-alone modules, with or without parallel-connected batteries.

## Features

- Convection cooled
- 110 VDC and 220 VDC output
- 1600W output power
- Constant output power characteristics
- Nominal 230 VAC input, range 140–290 VAC
- Active load current sharing
- Internal overtemperature protection
- Digital communication over CAN bus with VIDDI controller
- Flexible design with full front cabling
- EMC: EN 300 386:2005
- Safety: IEC/EN 60950-1

## Technical specifications

AC Input	MRC 110-1600	MRC 220-1600
Input range	140 VAC – 290 VAC (nominal 180–275 VAC)	
Start-up voltage	180 VAC	
Reduced output power (active limitation)	140–180 VAC, derating factor 1% / 1 VAC	
Input Frequency range	45 to 65 Hz	
Maximum current (at 180VAC, full load)	9.6 A	
Power factor (typical @ 230 VAC)	0.99	
Input protection	Mains fuse Varistor and gas discharge tube for transient surge protection Automatic shut-off above 290 VAC (restart at 280 VAC)	

DC Output	MRC 110-1600	MRC 220-1600
Output voltage range	97–132 VDC	189–265 VDC
Output voltage factory set-up	123.6 VDC	245.3 VDC
Maximum output current	14.5 A @ 110 V	7.2 A @ 220 V
Constant output power (figure 1)	1600 W	1600 W
Hold-up time @ full load, output voltage from nominal to minimum	>20 ms	
Static voltage regulation (load, line & temp.)	±0.3 %	
Dynamic load regulation	±4.0% for 10%–90% or 90%–10% load step, recovery time < 1.0 ms	
Ripple and noise	< 100 mVp-p	
Output protection	Overvoltage shutdown Current limit / short circuit protection Power limiting Internal overtemperature protection	

Features	MRC 110-1600	MRC 220-1600
Efficiency, typical (at 50–85% load)	>92%	>92%
Load current share	±5 % from true average current between modules	
Rectifier Alarms	Mains fault alarm (high/low) Low output voltage alarm Overvoltage shutdown alarm Rectifier fault alarm Temperature alarm	
Visual indications	Green LED: ON, no faults Red LED: rectifier fault Green LED blinking: communication error (controller not present) Red LED blinking: temporary failure (e.g. mains fault, overtemperature) Amber LED: test mode Amber LED blinking: LED test	
Energy save operation mode	See VIDDI controller manual	

Mechanical	MRC 110-1600	MRC 220-1600
Dimensions (HxWxD)	230 x 83 x 350 mm	
Weight	4.60 kg	
Enclosure	IP 20 / IEC 529	

Connections	MRC 110-1600	MRC 220-1600
Connector, AC	Appliance plug IEC 320 / 10 A male	
Connector, DC	FCI TwinBlade™ Power IO connector	
Connector, PowerCAN	2*RJ45	

Environmental	MRC 110-1600	MRC 220-1600
Cooling	Natural convection	
Acoustic noise	< 40 dB (A)	
Operating temp (min/max)	-20 / +50 °C	
Storage temperature (min/max)	-40 / +70°C	
Humidity (max)	95 % (relative humidity, non condensing)	
Altitude (max)	2000 m above sea level	

Applicable standards	MRC 110-1600	MRC 220-1600
EMC	ETSI EN 300 386:2005	
Environmental	Operation: ETS 300 019-2-3 cl T3.2 Storage: ETS 300 019-2-1 cl T1.2 Transportation: ETS 300 019-2-2 cl T2.3	
Safety	IEC/EN 60950-1 ed.2 (2005-12)	
Approvals	CE market, CB-certified	
RoHS, WEEE	2002/95/EC	
Quality	Manufacture and design conform to ISO 9001, ISO 14001	

## Product selection guide

### Rectifier

Description	Part no.
MRC 110-1600 (110 VDC, 1600 W)	92G300- *
MRC 220-1600 (220 VDC, 1600 W)	92G320- *

\* Note, "-" to be replaced with revision letter (A,B,C,...) for a complete-, valid product code.

