

## VCRM & VCRML

### *Rectifier modules*



#### GENERAL DESCRIPTION

The VCRM and VCRML rectifier modules are designed and optimised for telecom and industry applications. These rectifiers provide unprecedented power density and power levels in a true plug and play format and therefore power systems made out of these rectifiers leave you more valuable room for your core applications.

VCRM and VCRML rectifiers are building blocks of EPOS Compact DC power systems. These rectifiers can be operated either with a system controller or as a stand-alone module. These rectifiers are optimal for supplying power with or without a parallel-connected battery according to the need of the system.

#### FEATURES

- Constant current limited recifiers
- Automatic load current share
- "no load" monitoring
- Internal overtemperature protection
- Output fuse monitoring
- Mains monitoring
- Space saving high density design

**SPECIFICATIONS**

Input	VCRM 24/1500	VCRML 48/1250	VCRML 48/2500	VCRM 80/2000
Input voltage (min)	180 VAC	90 VAC	150 VAC	90 VAC 180 VAC
Input voltage (max)	264 VAC	300 VAC	300 VAC	180 VAC 264 VAC
Input Frequency (min)	47 Hz			
Input Frequency (max)	63 Hz			
Input current (max)				
@ 100 VAC	-	15 A	-	15 A
@ 120 VAC	-	13 A	-	12.3 A
@ 180 VAC	10.9 A	9 A	18.1 A	16 A
@ 208 VAC	9.4 A	7.5 A	15.7 A	14 A
Inrush current (max)	30 A peak (excludes X caps in the EMC input filter)			
Power factor (typical @ 230 VAC, full load)	0.98	0.99		0.98
Output	VCRM 24/1500	VCRML 48/1250	VCRML 48/2500	VCRM 80/2000
Output voltage setpoint (min/nom/max)	21/24/28 VDC	42/48/56 VDC		30/60/80 VDC
Regulation	±1% (total regulation line, load, aging & temperature)			
Output current (min/max)	0/60 A	0/25 A	0/50 A	0/20A @ 30-63VDC 0/40A @ 30-63VDC 0/10A @ 64-80VDC 0/20 A @ 64-80VDC
Output power	1680 W	1400 W	2800 W	2000 W
Output power characteristics	Constant current			
Current limit setpoint (min/max)	63/72 A	26/30 A	52/60 A	21/24A @ 30-63VDC 42/48A @ 30-63VDC 11/12A @ 64-80VDC 21/24A @ 64-80VDC
Output noise*	20 mV rms <sup>1</sup>	25 mV rms <sup>2</sup>		20 mV rms <sup>3</sup>
Output rise time* (min/max)	100/400 ms (measured at 10-90% of final output level)			
Dynamic response* (max)	3% (change in output voltage within 10 ms after a 10-100% load step change)			
Turn on delay* (max)	3.5 s (measured from application of valid AC voltage to regulation setpoint)			
Adjustable over-voltage protection (min/max)	27/30 VDC	56/60 VDC		30/80 VDC
Backup over-voltage protection (max)	34 VDC	60 VDC		88 VDC
Load sharing (min/max)	±5% of full load			
Reverse output current (max)	0.5 amps (internal reverse protection is provided)			
Efficiency (@ 230 VAC)	90% typ.	92% typ.		91% typ.
Physical, environmental and standards	VCRM 24/1500	VCRML 48/1250	VCRML 48/2500	VCRM 80/2000
Dimensions (HxWxD)	87.6 x 86.7 x 282.9 mm (includes faceplate)			
Weight	3.2 kg			
Storage temperature (min/max)	-40/+85°C			
Operating temperature (min/max) <i>internal cooling</i>	-40/+75°C	-40/+65°C		-40/+50°C
Humidity (min/max)	5% / 95% (relative humidity, non condensing)			
Altitude (min/max)	-60/2500 m (for operation above 2500 m, max temperature is derated 2°C per 300 m for temperatures above 55°C)			
EMI	EN 300 386:2005			
Shock	IEC68-2-27, Mil-STD-810E, 20G			
Vibration	IEC68-2-64 (random vibration), Frequency range: 20-2000 Hz, time duration: minimum 30 min.			
Seismic rating	GR-63-CORE, zone 4			
Rectifier part no.	92F050A	92F090A	92F120A	92F060A

\* Operating temperature range: VCRM 24V: -20°C to +75°C • VCRML 48V: -20°C to +65°C • VCRM 80V: -40°C to +50°C

<sup>1</sup> Typical (10 kHz to 20 MHz) 30 dBrc (measured without external battery)

<sup>2</sup> Typical (10 kHz to 20 MHz) 40 dBrc (measured without external battery)

<sup>3</sup> Typical (10 kHz to 20 MHz) 30 dBrc (measured without external battery)