Charging Rectifier type PRM1

24/48/110/220V$_{DC}$

PRM1 is a complete module-based device consisting of rectifier and monitoring unit for battery systems with high demands on reliability, suitable as replacement for older rectifiers.

Plug-in rectifier modules

Gives output power flexibility, easy service due to hot swap modules and high availability due to parallel operation.

Safe operation and high availability

We support you with commissioning and service as well as education in handling and maintenance.

DC-system monitoring

Includes battery, rectifier and distribution. Status and alarms distinctly on display and settings via clear menus for easy handling.

Battery status

Battery circuit test and monitoring of battery symmetry for early warning of battery faults. Battery temperature is monitored and will automatically adjust the float charging voltage.

Charging Rectifier type PRM1

General

PRM1 is a complete charging rectifier in 19" rack version including rectifier and monitoring unit. The rectifier can be equipped with up to three rectifier modules of plug-in type.

Enclosure PRM1

Rack

Type:	Rack 2HE for 19" rack frame
Dimensions (h/w/d):	Rack 88.2/481.5/315 mm
Weight:	14 kg (fully equipped)
Colour:	Unpainted galvanized sheet metal
Class of enclosure:	IP20
Ventilation:	Temperature controlled fans in rectifier modules

I/O unit

Type:	Box for mounting on guide rail or flat surface
Dimensions (h/w/d):	117/224/66 mm
Weight:	0.5 kg
Colour:	Unpainted galvanized sheet metal
Class of enclosure:	IP20
Ventilation:	Natural convection

Input AC

Voltage:	230 V_{AC} single-phase
Frequency:	50/60 Hz
Power factor:	> 0.99 at 230 V_{AC}, full load
Connection:	6 mm² screw terminal for each rectifier module. Mains switch and 2.5 m cable enclosed.
Other:	See tables below

Output DC

Voltage, nominal:		24/48/110/220 V_{DC}
Connection	24 V:	10/16 mm² cable, 3 m enclosed
	48 V:	10 mm² cable, 3 m enclosed
	110 V:	6 mm² cable, 3 m enclosed
	220 V:	6 mm² cable, 3 m enclosed
Voltage regulation		
	Static:	< 0.5 % of nominal voltage
	Dynamic:	< 1 % within 3 seconds, 0-100 /100-10 % load change
Current regulation:		< 1 % of rated current
Current limit range:		0 – 100 % of rated current
Ripple voltage:		< 0.1 $\%_{RMS}$
Ripple current:		< 0.1 % of rated current
Other:		See tables below

Environmental data

Ambient temperature	
Operation:	0 to +40 °C
Storage:	-40 to +70 °C
Humidity:	< 90 % RH, non-condensed
Altitude a.s.l:	< 2000 m

Monitoring unit type PCM2

Monitoring unit type PCM2

Monitoring of the complete DC system.
Clear graphical display for showing and setting of alarms, operating data, etc.
Remote alarm via four freely configurable relays.

Distribution:	Fuse monitoring, earth fault monitoring, external alarm
Battery:	Temperature monitoring, battery circuit test, battery symmetry monitoring
Rectifier:	Over/under voltage, rectifier fault, temperature compensated float charging, automatic equalising charging

Standards

Safety:	EN 50178
EMC, immunity:	EN 61000-6-2
EMC, emission:	EN 61000-6-4
Class of enclosure:	EN 60529

Rectifier module type PCS

KRV 129GB-C

Charging Rectifier PRM1			Rectifier Module PCS		
Model	U_{NOM} (V_{DC})	I_{MAX} (A)	Qty	I_{RATED} (A)	Model
PRM1 24/108	24	108	1-3	36	PCS 24/36
PRM1 24/210		210	1-3	70	PCS 24/70
PRM1 48/54	48	54	1-3	18	PCS 48/18
PRM1 48/150		150	1-3	50	PCS 48/50
PRM1 110/24	110	24	1-3	8	PCS 110/8
PRM1 110/48		48	1-3	16	PCS 110/16
PRM1 110/66		66	1-3	22	PCS 110/22
PRM1 220/30	220	30	1-3	10	PCS 220/10

Table 1, Rated data Charging Rectifier PRM1

Output data PCS			Input data PCS			Power loss**
U_{NOM} (U_{RANGE}) V_{DC}	I_{RATED} A	P_{MAX} W	Input voltage range*** V_{AC}	Mains power * VA	Mains current* A_{RMS}	W
24 (22-33)	36	1000	90-290	1150	6	150
	70	2000	90-290	2200	12	175
48 (42-63)	18	1000	90-290	1150	6	135
	50	2700	90-290	2900	15	210
110 (100-158)	8	1000	90-290	1150	6	135
	16	2000	90-290	2200	12	160
	22	2700	90-290	2900	15	200
220 (187-292)	10	2475	90-290	2700	14	200

Table 2, Rated data Rectifier Module PCS
* maximum at 195 V_{AC}, ** type at 230 V_{AC},
*** derating at voltages below 190 V_{AC}

CE

KRAFT POWERCON

KraftPowercon Sweden AB
Hjalmar Petris väg 49
S-352 46 Växjö, Sweden

Phone +46 (0) 470-70 52 00
Fax +46 (0) 470-70 52 01
www.kraftpowercon.com