

High efficiency and reliable rectifiers

The most efficient power conversion module in the industry! Since the launch the Flatpack 2 family has expanded into a wide selection of power ratings and voltages



FLATPACK2 110-125V RECTIFIERS

110V_{DC}/2000W HE, 110-125V_{DC}/10A HE & 110-120V_{DC}/20A HE

Doc 24111x.805.DS3 – v1

APPLICATIONS

POWER UTILITIES

- SWITCH TRIPPING
- CONTROL & PROTECTION SYSTEMS
- EMERGENCY LIGHTING

RAILWAY INFRASTRUCTURE

- CONVERTER STATIONS
- POWER STATIONS

VARIOUS OTHER APPLICATIONS IN DEMANDING INDUSTRIES LIKE MARINE, OIL & GAS, PROCESS ETC.



FLATPACK2 POWER RACK FOR HVDC(PN: 268035)



CTO30210.XXX FLATPACK2 WALLBOX - A 2 RECTIFIERS SYSTEM

KEY FEATURES

- PROVEN RELIABILITY
- HIGH POWER DENSITY
- APPLICATION FLEXIBILITY, 2KW - 2MW
- ACCEPTS DC INPUT (DC/DC CONVERTER)
- GLOBAL COMPLIANCE (CE, UL, NEBS)
- MARINE & OFFSHORE CERTIFICATIONS
- PATENTED TECHNOLOGY
- DIGITAL CONTROLLERS

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APPLICABLE SYSTEMS



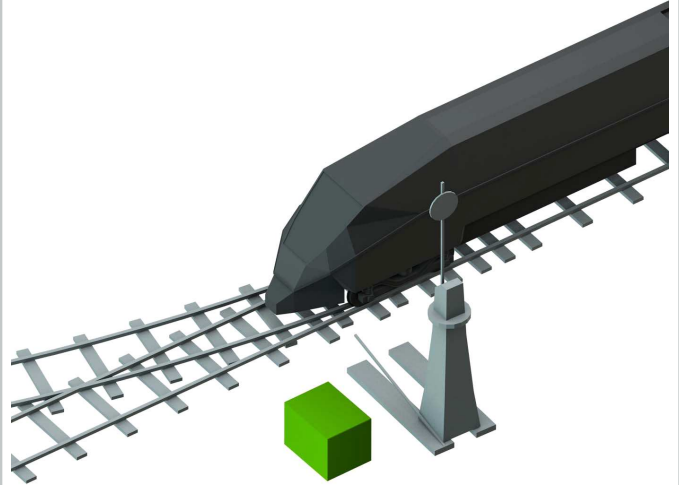
2U FLATPACK2 BULK OUTPUT RACK WITH EARTH FAULT DETECTION



IBB SYSTEM IN FPC CABINET

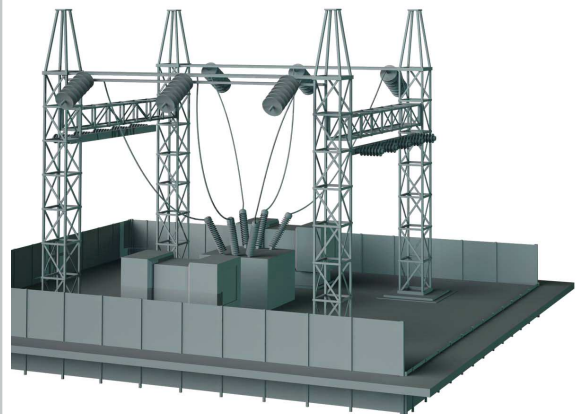
APPLICATION EXAMPLE

RELIABLE POWER FOR RAIL & METRO



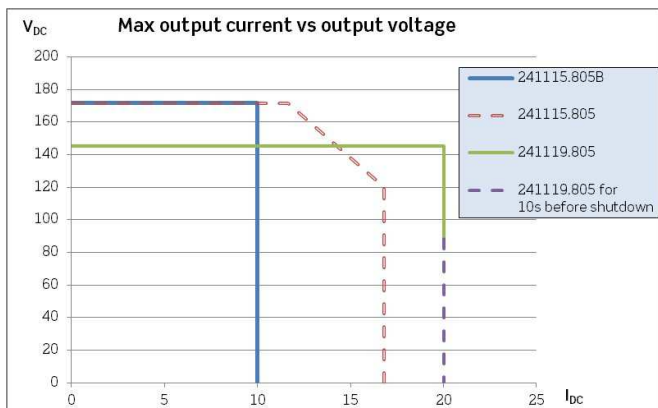
Uninterruptable power solutions based on 110VDC have many advantages and provide an extreme power reliability and power availability.

HV AND MV SWITCHGEAR



Safe and energy efficient powering of HV and MV switchgear

AVAILABLE CURRENT AT NOMINAL INPUTX|



IBB SYSTEM IN FPC CABINET

FLATPACK2 110-125V RECTIFIERS



110V_{DC}/2000W HE, 110-125V_{DC}/10A HE & 110-120V_{DC}/20A HE

Model	110 / 2000 HE WOR	110-125V / 10A HE	110-120V / 20A HE
Part number	241115.805	241115.805B	241119.805
INPUT DATA			
Voltage range	85 - 300 V _{AC/DC}		85 - 275 V _{AC} ¹⁾
Voltage range (nominal)	185 - 275 V _{AC/DC}		185 - 250 V _{AC} ¹⁾
Frequency	0 - 66 Hz		45 - 66 Hz
Maximum current	11.9 A _{RMS}		17.1 A _{RMS}
Power Factor	0.99 (@ load > 1000 W)		0.99 (@ 50-100 % load)
THD (@ 230 V _{AC})	< 5 % (@ 2000W load) / < 9 % (@ 1000W load)		< 5 % (@ full load)
Protection	Varistor for transient protection, fuse in both lines, shutdown above 300/275 V		
OUTPUT DATA			
Default voltage	122.5 V _{DC}		
Voltage range	89.2 - 171.6 V _{DC}		99.7 - 145.0 V _{DC}
# Pb cell supported (1.8 - 2.4 V _{DC} /cell)	54 - 71		54 -60
# NiCad cell supported (1.05 - 1.65 V _{DC} /cell)	85 - 104		-
Max power, nominal input	2000 W	1100 - 1716 W	2900 W
Max power, 85V input	850 W	850 W	1280 W
Max current	16.7 A	10 A	20 A
Current sharing	±5% of maximum current from 10 to 100% load		
Static voltage regulation	±0.5% from 10% to 100% load and nominal input		
Dynamic voltage regulation	±5.0% for 10-80% or 80-10% load variation, regulation time < 50ms		
Hold-up time, default voltage and 1500 W load	20 ms, V _{OUT} > 99.7 V _{DC}		10 ms, V _{OUT} > 99.7 V _{DC}
Rippel and noise, 30 MHz bandwidth	< 500 mV _{PP}		
Protection	Overvoltage shutdown, short circuit proof, high temperature, hot plug-in inrush current limiting, OR-ing diode		
OTHER SPECIFICATIONS			
Efficiency @ nominal input, peak / range	>94%, 30-70% load	>94%, 45-100% load	94.2 %
Isolation	3.0 kV _{AC} – input and output, 1.5 kV _{AC} – input earth, 1.5 kV _{DC} – output earth 3 kV _{AC} CAN – input, 3kV _{AC} CAN – output		
Alarms: Red LED 'on'	Low mains shutdown, High and low temperature shutdown, Rectifier Failure, Overvoltage shutdown on output, Fan failure, Low voltage alarm, CAN bus failure		
Warnings: Yellow LED 'on'	Rectifier in power derate mode, Remote battery current limit activated, Input voltage out of range, flashing at overvoltage		
Normal (module running): Green LED 'on'			
MTBF (Telcordia SR-332 Issue I method III (a))	>391 000h (@ T _{AMBIENT} = 25°C)		>400 000h (@ T _{AMBIENT} = 25°C)
Operating temperature (5 - 95% RH non-cond.)	-40 to +75°C [-40 to +167°F]		-40 to +75°C [-40 to +167°F]
Output power de-rates above temp / to	+55°C / 1350W @ +75°C		+55°C / 2000 W @ +75°C
Storage temperature	-40 to +85°C (-40 to +185°F), humidity 0 - 99% RH non-condensing		
Dimensions[WxHxD] / Weight	109 x 41.5 x 327mm (WxHxD) [4.25 x 1.69 x 13"] / 1.950 kg [4.3lbs]		
DESIGN STANDARDS			
Electrical safety	UL 60950-1, EN 60950-1, CSA 22.2		
EMC	ETSI EN 300 386 V.1.3.2 EN 61000-6-1 / -2 / -3 / -4 / -5		
Mains Harmonics	EN 61000-3-2		
Environment	ETSI EN 300 019: 2-1 (Class 1.2), 2-2 (Class 2.3) & 2-3 (Class 3.2) ETSI EN 300 132-2 2002/95/EC (RoHS) & 2002/96/EC (WEEE) 2011/65/EU (RoHS) & 2008/98/EC (WEEE)		
Marine compliance (EMC class B with AC filter)	DnV Rules for Classification of Ships, High Speed & Light Craft and DnV Offshore Standards		

1) Pending nominal 185 - 277 V_{AC} and range 85 - 305 V_{AC} in later revision