High efficiency and reliable rectifiers

The most efficient power conversion module in the industry! Since the launch the Flatpack2 family has expanded into a wide selection of power ratings and voltages.

Power systems up to the MW-range can be realized using the 10A model addressing small and larger modular data centers' power needs. $220V_{DC}$ power systems provide an excellent alternative to traditional AC UPS providing significant efficiency and reliability improvements.

With $220V_{DC}$, standard components, cables and distribution can be used and most IT equipment designed for $208/230V_{AC}$ can be connected directly to the $220V_{DC}$ bus.

FLATPACK2 220V RECTIFIERS

$220V_{DC}$/2000W HE, $220V_{DC}$/5A HE & $220V_{DC}$/10A HE

Doc 24111x.815.DS3 – v1

APPLICATIONS

POWER UTILITIES

- **SWITCH TRIPPING**
- **CONTROL & PROTECTION SYSTEMS**
- **EMERGENCY LIGHTING**

RAILWAY INFRASTRUCTURE

- **CONVERTER STATIONS**
- **POWER STATIONS**

MARINE AND OFF-SHORE

- **CENTRAL POWER SYSTEM**

DATA CENTER

- **CENTRAL POWER SYSTEM**
- **DC/DC - ISOLATE BRANCHES**

FLATPACK2 POWER RACK FOR HVDC(PN: 268035)

SMARTPACK2 MASTER AND BASIC INDUSTRIAL

KEY FEATURES

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

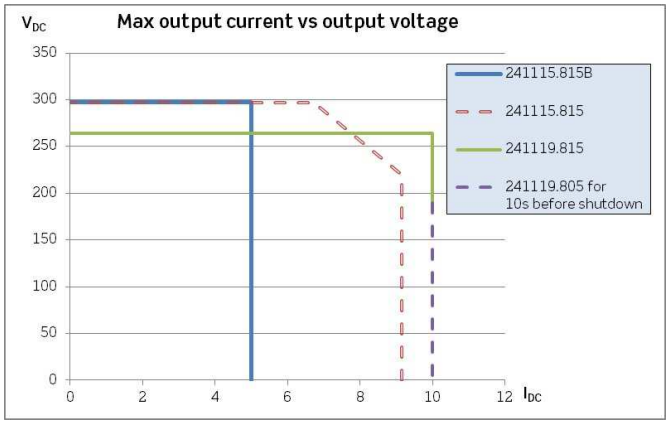
FLATPACK2 220V RECTIFIERS

220V_{DC}/2000W HE, 220V_{DC}/5A HE & 220V_{DC}/10A HE

APPLICABLE INDUSRIAL SYSTEMS

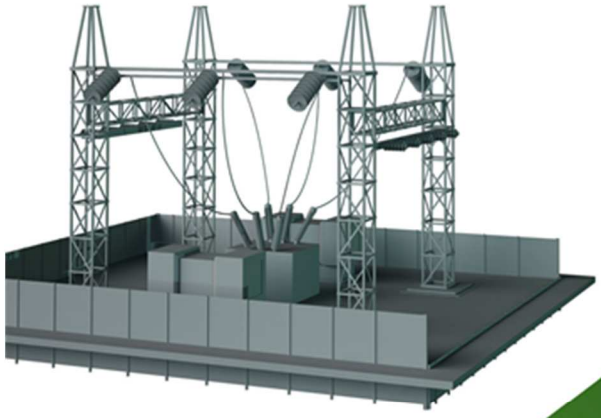
IBB SYSTEM IN FPC CABINET

AVAILABLE CURRENT AT NOMINAL INPUT



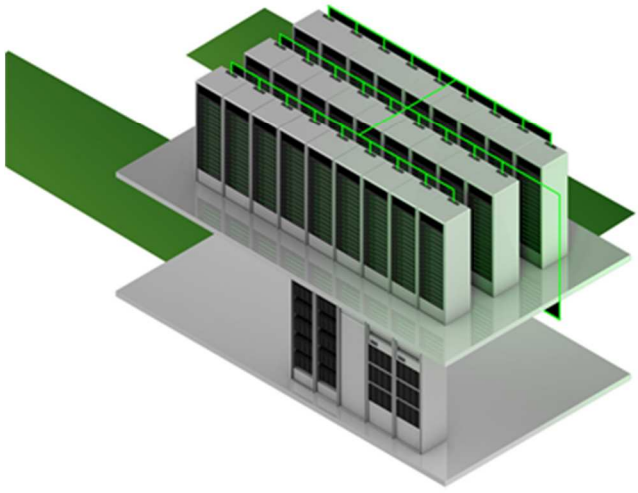
APPLICATION EXAMPLES

HV AND MV SWITCHGEAR



Modular and redundant solutions for safe and energy efficient powering of HV and MV switchgear

RELIABLE POWER FOR DATA CENTERS



Uninterruptable power solutions based on 220VDC have many advantages and provide an extreme power reliability and power availability while opening new possibilities to further improve PUE.

FLATPACK2 220V RECTIFIERS

$220V_{DC}$/2000W HE, $220V_{DC}$/5A HE & $220V_{DC}$/10A HE

Model	220 / 2000 HE WOR	220 / 5A HE	220 / 10A HE
Part number	241115.815	241115.815B	241119.815
INPUT DATA			
Voltage range	85 - 300 $V_{AC/DC}$		85 - 305 V_{AC}
Voltage range (nominal)	185 - 275 $V_{AC/DC}$		185 - 305 V_{AC}
Frequency	0 - 66 Hz		45 - 66 Hz
Maximum current	11.9 A_{RMS}		15.4 A_{RMS}
Power Factor	0.99 (@ load > 1000 W)		0.99 (@ 50-100% load)
THD (@ 230 V_{AC})	< 5 % (@ 2000W load) / < 9 % (@ 1000W load)		< 4% (@ full load)
Protection	Varistor for transient protection, fuse in both lines, shutdown above 300/305 V		
OUTPUT DATA			
Default voltage	245.3 V_{DC}		
Voltage range	178.5[1] - 297 V_{DC}		200[2] - 264 V_{DC}
# Pb cell supported (1.8 - 2.4 V_{DC}/cell)	108 - 122		108-110
# NiCad cell supported (1.05 - 1.65 V_{DC}/cell)	170 - 180		-
Max power, nominal input	2000 W	1100 - 1485 W	2640 W
Max power, 85V input	850 W	850 W	1180 W
Max current, @220V_{DC}	9.16 A	5 A	10 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 10-90% or 90-10% load variation, regulation time < 50ms		
Hold-up time, default voltage and 1500 W load	20 ms, V_{OUT} > 178 V_{DC}		10 ms, V_{OUT} > 200 V_{DC}
Rippel and noise, 30 MHz bandwidth	< 1000 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	- / >95%, 35-65% load	- / >95%, 45-95% load	95.4% / >95% , 30-70% load
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.) Output power de-rates above temp / to	-40 to +75°C [-40 to +167°F] +55°C / 1350W @ +75°C		-40 to +75°C [-40 to +167°F] +50°C / 2200 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) V_{OUT} may increase at no and very light load (< 1 A) for V_{OUT_SET} < 245 V_{DC} set and V_{IN} > 250 $V_{AC/DC}$
2) V_{OUT} may increase at no and very light load (< 1 A) for V_{OUT_SET} < 245 V_{DC} set and V_{IN} > 250 V_{AC}

Specifications are subject to change without notice

Eltek — Gråterudveien 8, PB 2340 Strømsø, 3003 Drammen, Norway Phone: +47 32 20 32 00 Eltek © 2013 – www.eltek.com