HE rectifier for HVDC in data centers

The Flatpack2 380V rectifiers have high efficiency, OR-ing protection on output and high output power.

Distribute pure battery backup DC voltage with a minimum of loss. Remove the low reliable DC-AC step in the central backup power system and maximize its reliability and efficiency.

Stack 48-rectifier cabinets to build power systems up to 2.4MW controlled by a single Smartpack2 control system.

FLATPACK2 380V RECTIFIER

2500W HE

Doc 241119.825.DS3 – v0C

APPLICATIONS

DATACENTER

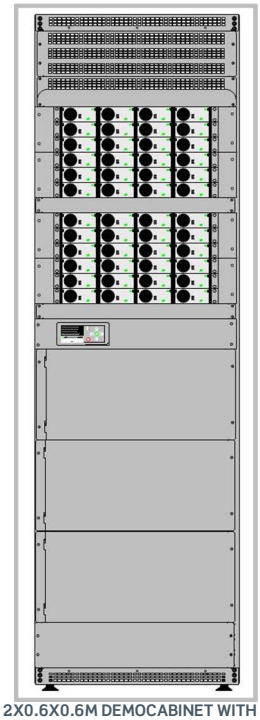
- **CENTRALIZED BATTERY BACK-UP SYSTEMS**

TELECOM – FIXED

- **CENTRAL OFFICE / LARGE SWITCH SITES**

OTHER INDUSTRIES

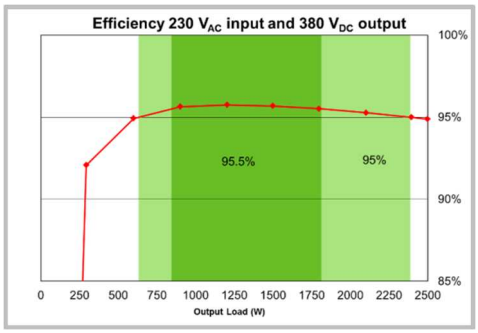
- **HVDC UPS**



2X0.6X0.6M DEMOCABINET WITH 48 RECTIFIERS

KEY FEATURES

- POWER DENSE, 28 W / CU IN
- HIGH EFFICIENCY
- ORING PROTECTION ON OUTPUT
- HOT PLUG-ABLE
- VOLTAGE KEYING



FLATPACK2 380V 2500W EFFICIENCY PLOT

FLATPACK2 380V RECTIFIER

2500W HE

TECHNICAL SPECIFICATIONS

Model	Flatpack2 380V 2500W HE
Part number	241119.825
INPUT DATA	
Voltage (nominal)	185 - 250 V_{AC} [1)]
Voltage (range)	85 - 276 V_{AC} [1)]
Frequency	45 - 66 Hz
Current (maximum) @ nominal input, full load	19.2 A_{RMS}
Power Factor	> 0.99 at 50% load or more
Protection	Fuse Disconnect above 276 V_{AC} [1)]
OUTPUT DATA	
Voltage (default)	381 V_{DC}
Voltage (adjusable range)	300 - 400 V_{DC}
Power (maximum)	2500 W
Power @ 85 VAC	1110 W
Current (maximum) @ nominal input, full load	7.5 A (@ 336 V_{DC}) / 6.6 A @ 381 V_{DC}
Current sharing (10 - 100% load)	±5% of maximum current from 10 to 100% load
Static Voltage regulation (10 - 100% load)	±0.5%
Dynamic Voltage regulation	±5.0% for 10-50% or 50-10% load variation, regulation time < 25 ms
Hold up time	> 20 ms; output voltage > 300 V_{DC} at 1500 W load
Rippel	< 1000 mV peak to peak, 30 MHz bandwidth
Protection	Overvoltage shutdown Hot plug-in - Inrush current limiting ORing diode Short circuit proof High temperature protection
OTHER SPECIFICATIONS	
Efficiency @ nominal input (peak / range)	95.8% / >95.5% @ 35 - 70% load
Isolation	3.0 kV_{AC} – input to output 1.5 kV_{AC} – input to earth 1.5 kV_{DC} – output to earth 3.0 kV_{AC} – CAN to primary 3.0 kV_{AC} – CAN to secondary
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'	
Acoustic noise, at nominal input and full load	< 40dBA @$T_{ambient}$< 25°C / <58dBA @ $T_{ambient}$> 40°C
MTBF (Telcordia SR-332 Issue I method III (a))	>400 000 (@ Tambient : 25 °C)
Operating temperature	-40 to +75°C (-40 to +167°F), humidity 5 - 95% RH non-condensing Output power de-rates linear from 2500W @ 45°C (113°F) to 1650W @ 75°C(167°F)
Storage temperature	-40 to +85°C (-40 to +185°F), humidity 0 - 99% RH non-condensing
Dimensions[WxHxD] / Weight	109 x 41.5 x 327 mm (4.25 x 1.69 x 13") / < 1.95 kg (4.3 lbs)
DESIGN STANDARDS	
Electrical safety	UL 60950-1, EN 60950-1
EMC	ETSI EN 300 386 V.1.4.1 EN 61000-6-1 (immunity, light industry) EN 61000-6-2 (immunity, industry) EN 61000-6-3 (emission, light industry) EN 61000-6-4 (emission, industry)
Environment	ETSI EN 300 019-2-1 Class 1.2 ETSI EN 300 019-2-2 Class 2.3 ETSI EN 300 019-2-3 Class 3.2

1) 277 V_{AC} nominal (shut-off at 305 V_{AC}) target for next revision.

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