

FLATPACK2

DC Power Systems

Overview

Eltek's Flatpack2 line consists of a range of versatile, scalable, and highly-configurable systems tailored to individual needs and requirements. Use of established components – including the efficient and reliable Flatpack2 rectifier, the robust Smartpack controller, and remarkably flexible distribution – make for optimal system design and cost-effective deployment. Flatpack2 systems fully support the unrivaled 96% efficient Flatpack2 HE rectifier.



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DC POWER SYSTEMS

Doc 2048206 Issue 4

DESCRIPTION

Flatpack2 Power System

The Flatpack2 (FP2) power core features an impressive array of distribution configurations and options. Its compact design and efficient use of space complement sites with limited floor and rack space, opening room for better airflow and additional equipment. Flatpack2 chassis are designed to mount in standard 19" or 23" telecommunications racks. Standard, fully-populated configurations accommodate seven to sixteen Flatpack2 rectifiers, yielding total power output of either 14kW to 32kW.

Distribution Features

- Breaker alarming
- Low-voltage disconnect (LVD) contactor options
- Horizontal load landings, vertical bulk battery landings
- Two distribution options for different power levels:
 - Three-bus, 600A, 19" wide, 4U high panel with 20 positions for plug-in circuit breakers or fuse holders, up to two LVD contactors, and rear bulk battery terminals
 - Three-bus, 600A, 23" wide, 4U or 6U high panel with 24 positions for plug-in circuit breakers or fuse holders, emergency power-off (EPO) switch, up to two LVD contactors, and rear bulk battery terminals; an additional 23" distribution panel option doubles the number of cable landings

KEY FEATURES

- **FLATPACK2 RECTIFIERS**
 - Flatpack2 HE with 96% typical efficiency
 - Input voltage range: 100 – 250 VAC
 - 2000W DC output (constant power)
 - 1U in height; 4.25" in width
 - Hot-swap/hot-plug functionality
 - Automatic active load sharing
- **SMARTPACK CONTROLLERS**
 - Local and remote interfaces
 - PowerSuite software for computer interface
 - Advanced battery-monitoring and thermal compensation
 - Various models providing up to six configurable alarm inputs and output relays
 - Web model for TCP/IP or SNMP communication
- **POWER SHELVES**
 - Accommodate up to 4 rectifiers each
 - 1U height (1.75"); 19" width
 - Dual AC feed

FLATPACK2 SYSTEMS

-48V/300A



-48V/600A



Output Power	14kW	32kW
Maximum Output Current (DC)	294A	672A
Total Height**	6RU (10.5")	9RU (15.75")
Controller Slots	1	2
Rectifier Slots	7	16
Distribution Dimensions**	Height: 4RU (7.0") Width: 19" (rack) Depth: 18.75"	Height: 4RU (7.0") Width: 23" (rack) Depth: 21.75"
Configurable Load Buses	3	3
Protected Load Landings	Up to 20	Up to 24
Load Landing Lug Sizes	Two-hole 1/4-20 on 5/8" centers, up to #1 AWG	Two-hole 1/4-20 on 5/8" centers, up to #1 AWG
Bulk Battery Landings	4	8
Battery Landing Lug Sizes	Two-hole 3/8-16 on 1" centers	Two-hole 3/8-16 on 1" centers
LVD Contactor	Up to 2	Up to 2
EPO Circuit and Service Bypass Switch	No	Yes
Additional Distribution Panel Option	No	Yes

*Please consult with a sales representative for other available configurations

**Dimensions are approximate

APPLICABLE STANDARDS

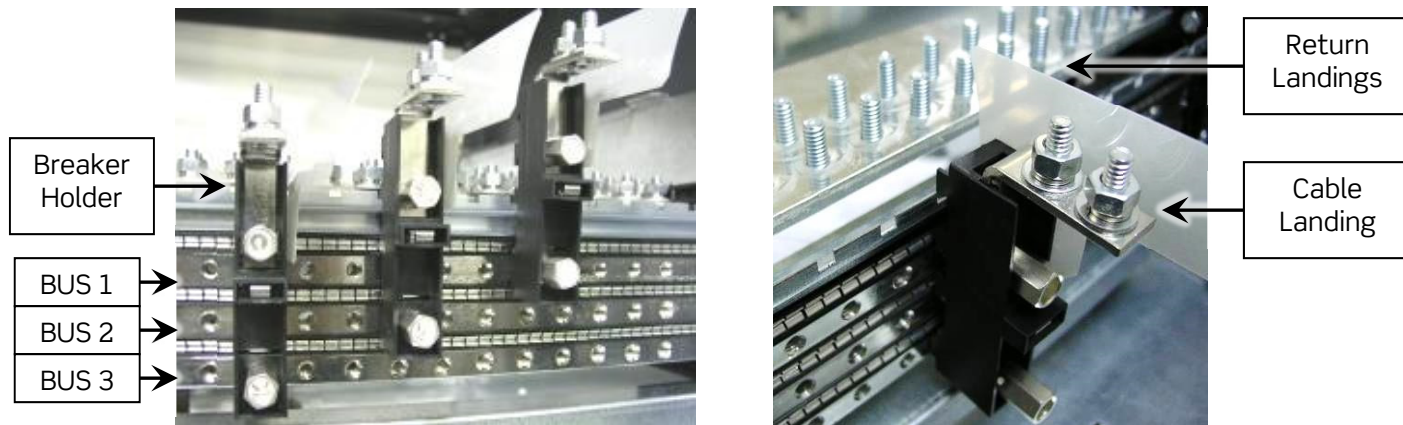
NEBS	Level 3 (GR-63-CORE, GR-1089-CORE)	EN 61000-4-2	Electrostatic discharge (ESD) immunity test
IEC 60950-1		EN 61000-4-3	Electromagnetic field immunity test
UL 60950-1	Electrical safety	EN 61000-4-4	Electrical fast transient/burst immunity test
EN 55022 (CISPER 22)	Radiated disturbance at enclosure port	EN 61000-4-5	Surge immunity test
	Conducted emission at DC output ports	EN 61000-4-6	Conducted radio-frequency (RF) immunity test
	Conducted emission at AC mains ports	EN 61000-4-8	Power frequency magnetic field/pulse magnetic field
EN 61000-3-2		EN 61000-4-9	
EN 61000-3-3 20	Harmonic current emissions	EN 61000-4-11	Voltage dips, short interruptions and voltage variations

Specifications are subject to change without notice

DISTRIBUTIONS

Flatpack2 300A and 600A

The larger Flatpack2 systems make use of a unique front-access distribution section that features three discrete, parallel buses. Each bus has positions for moveable breaker holders that screw into the desired bus. This arrangement facilitates a variety of convenient uses for each bus, such as protected battery connections, load-shedding, and converter output. Kits are available for double-pole and triple-pole breakers. Bulk battery cable landings are available in the rear of these distributions. There are also options for up to two LVD contactors.



Distributions*	300A	600A
Distribution Dimensions	Height: 4RU (7.0") Width: 19" (rack) Depth: 18.75"	Height: 4RU (7.0") Width: 23" (rack) Depth: 21.75"
Controller Slot(s)	One (1) in power shelf	Two (2) in dedicated shelf
Alarm Card(s)	Integrated	Separate shelf
Configurable Load Buses	3	3
Protected Load Landings	Up to 20	Up to 24
Load Landing Lug Sizes	Two-hole 1/4-20 on 5/8" centers, up to #1 AWG	Two-hole 1/4-20 on 5/8" centers, up to #1 AWG
Bulk Battery Landings	4	8
Battery Landing Lug Sizes	Two-hole 3/8-16 on 1" centers, up to 250 MCM	Two-hole 3/8-16 on 1" centers, up to 777 MCM
LVD Contactors	Up to 2	Up to 2
EPO Circuit and Service Bypass Switch	No	Yes
Optional Auxiliary Distribution Panel	No	Yes

*Please consult with a sales representative for other available configurations

FP2 DC POWER SYSTEMS

POWER MODULES

Flatpack2 HE Rectifiers

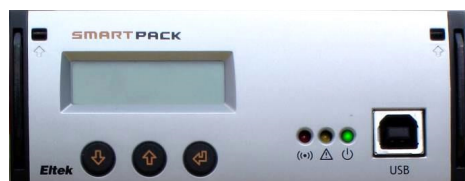
Flatpack2 HE rectifiers are 48V. They are hot-swap, switched-mode power supply units.

Flatpack2 Rectifiers*	48V/2000W HE
Rated AC Input Voltage	100 – 250 VAC
Maximum AC Current	11.6 A _{rms}
DC Output Voltage	43.5-57.6 VDC
Maximum DC Current	41.7A
Typical Efficiency	>96%
Operating Temperature	-40°C to +65°C (-40°F to +149°F)
Storage Temperature	-40°C to +70°C (-40°F to +158°F)
Cooling	One fan, front-to-back airflow
Dimensions	Height: 41.5 mm (1.63") Width: 109 mm (4.29") Depth: 327 mm (12.87")
Weight	1.95 kg (4.30 lbs)

*Please consult with a sales representative for other available models, such as the non-HE rectifiers

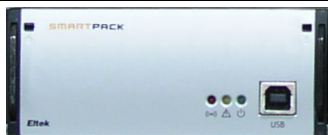


CONTROLLER MODULES



Smartpack Controller

Each Flatpack2 rectifier communicates through a CAN bus and provides real-time monitoring and control information. The Smartpack controller is accompanied by the PowerSuite software program for PC interface. Alarm inputs and output relays can be increased by using a master/slave configuration in systems that can accommodate two controllers.

Smartpack Modules*	Web/SNMP 6+6	Slave
Module Image	 Rear View	 Front View
Input Voltage	24 – 60 VDC	24 – 60 VDC
Configurable Alarm Inputs	6	6
Form C Output Relays	6	6
Computer Interface	USB, Ethernet	USB
Front Display	Yes	No
Battery Symmetry Inputs	4	8
Temperature Sense Inputs	1	2
Battery Current Monitor Input	1	2
Fuse Fail Monitor Input	1	2
LVD Control	Up to 2 contactors	Up to 2 contactors
Dimensions	Height: 44 mm (1.73") Width: 109 mm (4.29") Depth: 140 mm (5.51")	Height: 44 mm (1.73") Width: 109 mm (4.29") Depth: 140 mm (5.51")

*Please consult with a sales representative for other available models

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