Flatpack2, 24VDC / 48kW

Central Power System

Reliable and efficient power supply system, ideal for powering critical equipment in ships, larger buildings and factories.

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C22438.401.DS3, rev1 DRAFT2

APPLICATIONS

Offshore Central Power Supply

Today's offshore platforms and modern ships are full of critical electric powered equipment. This type of equipment is found in many different areas in the ship; the bridge, engine room and cargo room.

The Flatpack2 24V/48kW, IP44 system cabinet is equipped with redundant fans and is designed for use as a 24VDC central power system in offshore platforms or ships, where optional vibration absorbers are needed.

The 24VDC output of the Flatpack2 24V/48kW system can be distributed to 24VDC equipment all around the offshore platform or ship in an easy and cost-effective manner.

The co-location of the back-up batteries saves space and limits areas with temperature control requirements. It also simplifies maintenance compared to a system where batteries are kept locally in the different areas in the platform or ship.

The system can be fed by both AC generators and harbor mains.
Wide input voltage and frequency ranges of the Flatpack2 rectifiers allows for problem-free feeding of the power system around the world.

Small to large

The modular concept of the Flatpack2 systems makes it easy to scale the Flatpack2, 24V/48kW to fit specific power needs from 4 to 48kW. A system with unused rectifier positions can be expanded later, simply by adding more rectifiers.

KEY FEATURES

- RELIABILITY
  The system distributes 24V DC directly from the batteries and rectifiers. The system has 2 battery breakers supporting 2 external battery strings, thus increasing the breaker redundancy and strengthening the reliability of the system.
  Two output breakers allows for 2 redundant distribution branches.
- EFFICIENCY
  Resonant topology in the rectifiers contributes to the modules' ultra-compact dimensions and industry leading efficiency. Less energy wasted on cooling the power equipment and batteries, results in a significant operational cost reduction.
- GLOBAL COMPLIANCE
  Eltek is among the market leaders in all regions in the world, and designs the core products to be compliant to all relevant standards and customer requirements. This Flatpack2 system is CE marked and DNV approved.

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AC INPUT

Connection	2 x 3phase + PE terminals Tension clamp (2.5 – 35mm2)
Voltage (phase to phase)	230 VAC (Δ) nominal
Frequency	45 to 66Hz
Maximum Current	100 A_{rms} per phase (at full load)
Power Factor	> 0.99 at 50% load or more
Input Protection	o 3 pole 100A MCB o SPD
Input protection in each rectifier	o Varistors for transient protection o Mains fuse in both lines o Disconnect above 300 VAC

DC OUTPUT

Voltage	Adjustable Range: 21.5 – 36.0 VDC Default voltage: 26.7VDC
NiCd batteries support	20 – 22 cells Float charge: 1,40 – 1.45 VDC/cell Boost charge: 1.45 – 1.70 VDC/cell Standby/Test: 1.05 – 1.2 VDC/cell
Pb batteries support	12 cells Float charge: 2.00 – 2.30 VDC/cell Boost charge: 2.35 – 2.40 VDC/cell Standby/Test: 1.80 – 1.9 VDC/cell
Output Power	48 kW maximum within nominal input
Output Current	Max. 1680 A at 29VDC V_{OUT} and within nominal input
Output protection in rectifiers	o Overvoltage shutdown o Fuse on output o Short circuit proof o High temperature protection
Battery protection connection	o 2 x 1200A MCB in + and – pole
Load protection connection	o 2 x 1200A MCB in + and – pole

OTHER SPECIFICATIONS

Efficiency	91%
Rectifier slots	24 (2 rectifiers included)
Isolation	3.0 kVAC – input and output 1.5 kVAC – input earth 0.5 kVDC – output earth
Operating temp.	-40 to +75°C (-40 to +167°F)
Storage temp.	-40 to +85°C (-40 to +185°F)
Cooling	Fan (door to top airflow)
Humidity	Operating: 5% to 95% RH non-condensing Storage: 0% to 99% RH non-condensing
Dimensions	1800 x 800 x 600 mm (HxDxW), with plinth 100mm, absorbers and hat (70.9 x 34.5 x 23.6")
Weight	Approx. 272 kg (600 lbs)

CONTROL AND MONITORING

Controller	Smartpack2 Master and Basic controllers
User interface	3.2" display and keys, Ethernet port for access to Web pages and SNMP, SD card
Ethernets Protocols	SNMPv2vc/v3(pending), HTML, JSON (Multisite monitor support), MODBUS TCP (pending)
Protocols with Smartnode	MODBUS RTU on RS-485 port, modem support: call-back and SMS on RS-232 port
Digital inputs	6 (Aux Sw: NO/NC)
Temperature	3 inputs (NTC probes)
Relay outputs	6 (Switching capacity max 2A/75V/60W)
Connections	Tension clamp (0.5 – 1.5mm^2)

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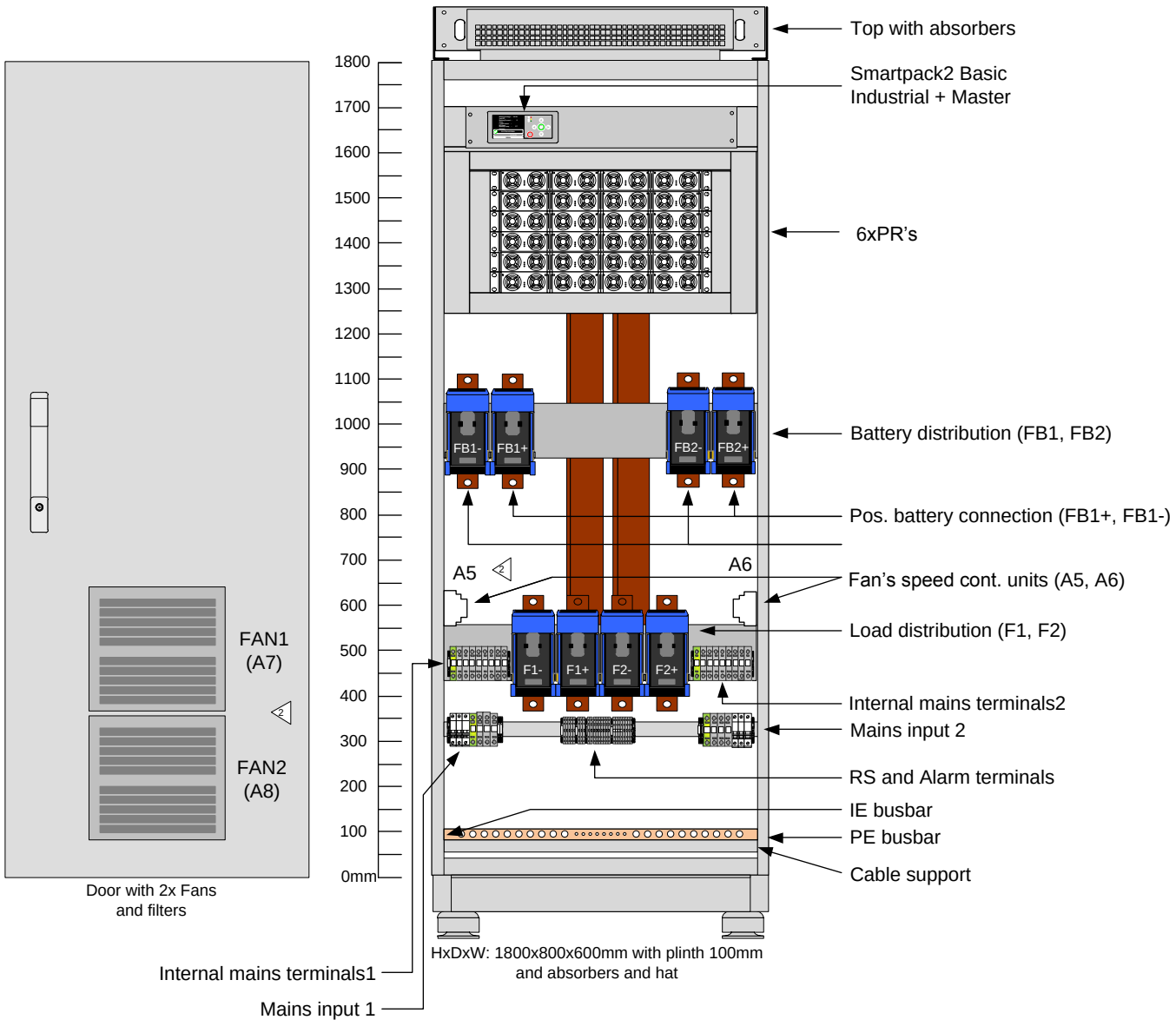
APPLICABLE STANDARDS

Electrical safety	IEC 60950-1
EMC	ETSI EN 300 386 V.1.3.3 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)
Mains Harmonics	EN 61000-3-2
Environment	ETSI EN 300 019-2-1 Class 1.2 ETSI EN 300 019-2-3 ETSI EN 300 019-2-2 Class 3.2 Class 2.3 RoHS compliant

ORDERING INFORMATION

Part No.	Description
C22438.401	FP2 24VDC, 48kW 2x3PH 220VAC BCE
241115.250	Flatpack2 24/2000 HE WOR
BE0138.000	Batt. cabinet CPS 4sh 38U



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