

Flatpack2 48/3000

Rectifier Module



Leading power density and high efficient rectifier

The combination of innovative design, efficiency and reliability makes the Flatpack2 stand out. With an efficiency up to 95%, the losses have been reduced by 40% compared to the current industry standard.

In a global perspective, considering the high energy consumption in the telecom industry, this technology breakthrough is not only reducing operational cost for the operators, but it can also have a significant environmental impact.

Applications

Wireless, fiber and fixed line communication

Today's communications demand state of the art, cost effective and compact DC power systems. Flatpack2 delivers an industry leading power density and superb reliability at lowest lifetime cost.

The rectifier also has a high efficiency at low load; higher than 94% at 15% load. This has historically has been a drawback with most modern soft switching technologies.

Broadband and network access

Increasing network speed demands flexible and expandable DC power solutions. The Flatpack2 rectifiers are your key building blocks for future needs.

Small and large

Due to the high power density (33W/in³), cost competitive design and a highly flexible system communication interface, Flatpack2 48/3000 rectifiers are used in system solutions from 3kW to 288kW.

Product Features and Advantages

Flexibility and reliability

Extensive use of digital controllers has enabled advanced functionality to meet most customers' requirements. It also provides intelligent self-protective features like reduced output power at high temperatures or low mains.

Plug and play

Plug a new rectifier into the system, and it automatically logs on, gets an assigned ID, downloads the system set parameters from the control system and starts up with a minimum of installation time, and without interrupting the system or attached equipment.

The Flatpack 48/3000 rectifier is made fully compliant with the Flatpack2 family of rectifier which means it can be used in any FP2 system solutions, whether it is in new installations, site expansions or replacement programs.

Global compliance

Eltek Valere 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. The Flatpack2 48/3000 rectifier is CE marked and UL recognized.

Patents pending

Flatpack2 is a result of intensive research over many years. Several unique technical solutions are introduced, protected by patent applications.

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Additional Technical Specifications

AC Input	
Voltage	85-300 VAC (Nominal 176 – 275 VAC)
Frequency	45 to 66Hz
Maximum Current	19 A _{rms} maximum at nominal input and full load
Power Factor	> 0.99 at 50% load or more
Input Protection	<ul style="list-style-type: none">Varistors for transient protectionMains fuseDisconnect above 300 VAC

Other Specifications	
Efficiency	>94% at 15-85% load
Isolation	3.0 KVAC – input to output 1.5 KVAC – input to earth 0.5 KVDC – output to earth
Alarms:	<ul style="list-style-type: none">Low mains shutdownHigh temperature shutdownRectifier FailureOvervoltage shutdown on outputFan failureLow voltage alarmCAN bus failureLow temperature shutdown
Warnings:	<ul style="list-style-type: none">Rectifier in power derate modeRemote battery current limit activatedInput voltage out of range, flashing at overvoltageLoss of CAN communication with control unit, stand alone mode
Visual indications	<ul style="list-style-type: none">Green LED: ON, no faultsRed LED: rectifier failureYellow LED : rectifier warning
Operating temp	-40 to +75°C (-40 to +167°F), output power de-rates linear from 3000W @ 45°C (113°F) to 2100W @ 75°C(167°F)
Storage temp	-40 to +85°C (-40 to +185°F)
Cooling	Fan (front to back airflow)
Fan Speed	Temperature and output current regulated
MTBF	> 300, 000 hours Telcordia SR-332 Issue I, method III (a) (T _{ambient} : 25°C)
Acoustic Noise	< 40dBA at nominal input and full load (T _{ambient} < 25°C) < 58dBA at nominal input and full load (T _{ambient} > 40°C)
Humidity	Operating: 5% to 95% RH non-condensing Storage: 0% to 99% RH non-condensing
Dimensions	109 x 41.5 x 327mm (wxhxd) (4.25 x 1.69 x 13")
Weight	1.850 kg (3.9lbs)

DC Output	
Voltage	53.5 VDC (adj. range: 43.2-57.6 VDC)
Output Power	3000 W within nominal input, derates to 1380W at 85 VAC
Maximum Current	62.5 Amps at 48 VDC and nominal input
Current Sharing	±5% of maximum current from 10 to 100% load
Static voltage regulation	±0.5% from 10% to 100% load
Dynamic voltage regulation	±5.0% for 10-90% or 90-10% load variation, regulation time < 50ms
Hold up time	>20ms; output voltage > 43 VDC at 1500W load >10ms; output voltage > 43 VDC at 3000W load
Ripple	< 150 mV peak to peak, 30 MHz bandwidth
Output Protection	<ul style="list-style-type: none">Overvoltage shutdownHot plug-in - Inrush current limitingFuseShort circuit proofHigh temperature protection

Applicable Standards	
Electrical safety	IEC 60950-1 /-3 rd edition UL 60950-1/-3 rd edition
EMC	ETSI EN 300 386 V.1.3.2 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) FCC Part 15 Subpart 109
Mains Harmonics	EN 61000-3-2
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 ETSI EN 300 132-2 RoHS compliant

Specifications are subject to change without notice

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Part no.	Description
241119.903	Flatpack2 48/3000