

Flatpack2 110/2000 HE WOR Rectifier Module



The most efficient rectifier in the industry!

The combination of innovative design, efficiency and reliability makes the Flatpack2 HE stand out. With an efficiency up to 94.4%, the losses have been reduced by 50% compared to the current industry standard.

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

Applications

Industry

High efficiency rectifier for DC power supply facilities with or without battery in all areas of industry, power generation and power distribution.

The HE rectifier also has an extremely high efficiency at low load, which historically has been a drawback with most modern soft switching technologies.

Wide Output Range (WOR)

Wide DC output range to support battery banks of both NiCd and lead acid. For NiCd battery banks the any number cells from 84 to 105 are fully supported.

Small and large

Due to the high power density, cost competitive design and a highly flexible system communication interface, Flatpack2 HE rectifiers are used in system solutions from 2kW to 192kW.

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 HE rectifier is made fully compliant with the standard Flatpack2 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. All Flatpack2 rectifiers are CE marked, UL recognized.

Patents pending

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

Flatpack2 110/2000 HE WOR

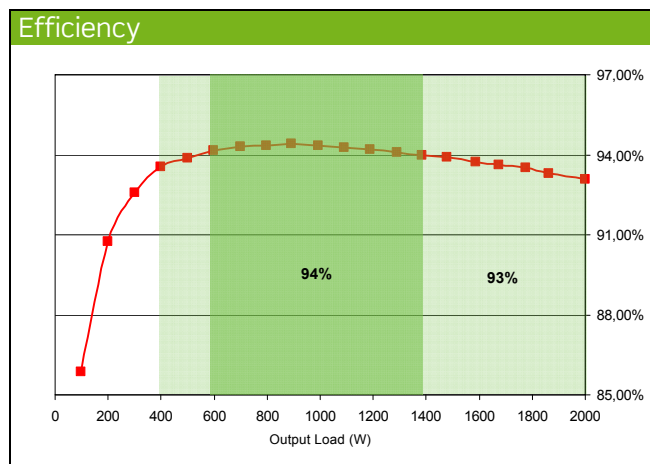
Additional Technical Specifications

| AC Input | |
|------------------|--|
| Voltage | 85-300 VAC (Nominal 185 – 275 VAC) |
| Frequency | 45 to 66Hz |
| Maximum Current | 11.9 A _{rms} maximum at nominal input and full load |
| Power Factor | > 0.99 at 50% load or more |
| THD | < 5 % at nominal input and full load |
| Input Protection | <ul style="list-style-type: none"> ○ Varistors for transient protection ○ Mains fuse in both lines ○ Disconnect above 300 VAC |

| DC Output (floating) | |
|----------------------------|---|
| Voltage | Default: 122.56 VDC (without controller) |
| Adjustable | Range: 89.2-171.6 VDC |
| NiCd batteries | Float charge: 1.40 – 1.45 VDC/cell Boost charge: 1.45 – 1.70 VDC/cell Standby/Test: 1.05 – 1.2 VDC/cell No of cells configurable in controller Min: 85 / Max: 104 |
| Output Power | 2000 W at nominal input, derating linear below 185VAC to 850W at 85VAC Constant Power > 120V > Constant Current |
| Maximum Current | 16.8 Amps at 120 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 10-80% or 80-10% load variation, regulation time < 50ms |
| Hold up time | > 20ms; output voltage > 89 VDC at 1500W load |
| Ripple and Noise | < 500 mV peak to peak, 30 MHz bandwidth |
| Output Protection | <ul style="list-style-type: none"> ○ Overvoltage shutdown ○ Hot plug-in ○ OR-ing diode ○ Short circuit proof ○ High temperature protection |

| Applicable Standards | |
|----------------------|--|
| Electrical safety | IEC 60950-1 /UL 60950-1 / CSA 22.2 |
| 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) EN 61000-6-5 (immunity, power station and substation) |
| 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 |

| Other Specifications | |
|----------------------|--|
| Efficiency | >94% at 30-70% load |
| Isolation | 3.0 KVAC – input to output 1.5 KVAC – input to earth 1.5 KVDC – output to earth 3.0 KVAC – CAN to primary 3.0 KVAC – CAN to secondary |
| Alarms: | <ul style="list-style-type: none"> ○ Low mains shutdown ○ High temperature shutdown ○ Rectifier Failure ○ Overvoltage shutdown on output ○ Fan failure ○ Low voltage alarm ○ CAN bus failure |
| Warnings: | <ul style="list-style-type: none"> ○ Low temperature shutdown ○ Rectifier in power derate mode ○ Remote battery current limit activated ○ Input voltage out of range, flashing at overvoltage ○ Loss of CAN communication with control unit, stand alone mode |
| Visual indications | <ul style="list-style-type: none"> ○ Green LED: ON, no faults ○ Red LED: rectifier failure ○ Yellow LED : rectifier warning |
| Operating temp | -40 to +75°C (-40 to +167°F), derating above +55°C (+131°F) to 1350W at +75°C (+167°F) |
| Storage temp | -40 to +85°C (-40 to +185°F) |
| Cooling | Fan (front to back airflow) |
| Fan Speed | Temperature and load regulated |
| MTBF | > 391, 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 | 1.950 kg (4.3lbs) |



241115.805.DS3 – v2

Specifications are subject to change without notice

| Part no. | Description |
|------------|---------------------------|
| 241115.805 | Flatpack2 110/2000 HE WOR |