# Flatpack | 1800

## Switch Mode Power Supply 48 VDC

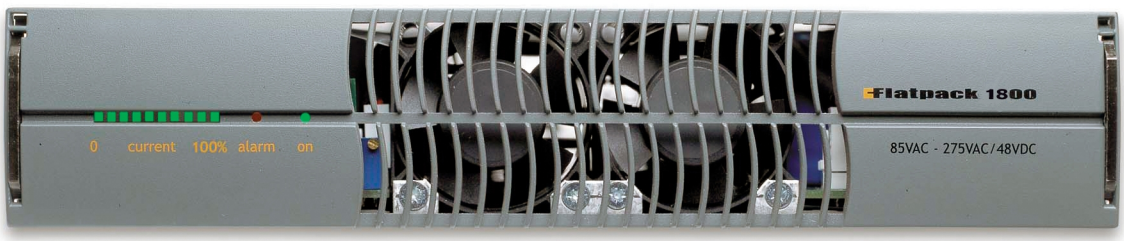
POWERFUL TECHNOLOGY


**The Flatpack 1800 48V is a battery charger and rectifier for stand-alone use, or for working in parallel as part of a power rack system controlled by the Flatpack MCU Monitoring & Control Unit. When connected in parallel, the rectifiers provide active current sharing, with or without the Monitoring & Control Unit.**

Switch mode technology with soft switching and high switching frequency is used to minimize volume and weight, and to obtain fast output voltage regulation. The module accepts large variations on the input voltage (85-300 VAC) and draws sinusoidal current with a soft start power-up. The Flatpack 1800 can operate in parallel with Flatpack 1500 rectifier module.

The Flatpack 1800 48V will operate in ambient temperatures up to +65°C (+149°F). It delivers maximum output power up to an ambient temperature of +45°C (+113°F) and de-rates to approximately 85% output power at 55°C (+131°F). At higher temperatures, the rectifier will de-rate the output power and deliver the maximum possible power until it goes into and over-temperature shutdown at an ambient temperature of approximately+70°C (+158°F).

The rectifier provides 1800 W output power (37.5 Amps at 48 VDC) at 230 VAC nominal input voltage.



# FLATPACK 1800 48 VDC

## SPECIFICATIONS

| INPUT | |
|---|---|
| Input voltage | 85-300 VAC* |
| High voltage | The rectifier will disconnect itself from the mains input at 312 VAC ±5 VAC. It will automatically restart when the input voltage is within a safe level |
| Low voltage | The rectifier will shutdown at mains voltages < 85 VAC |
| Frequency | 45 to 66Hz |
| Maximum Current | 11.1 Arms maximum at 185 VAC and 1800 W output |
| Power factor | > 0.99 at 50% load or more |
| THD | < 6% |
| Input protection | Soft start<br>Surge protection (varistors)<br>Internal fuses (L & N)<br>Automatic disconnect at 312 VAC ±5 VAC (auto reset) |

| OUTPUT | |
|---|---|
| Voltage | 48 VDC (range: 44-58 VDC) |
| Output power | 1800 W at 185-275 VAC<br>1200 W at 150-185 VAC<br>500 W at 85-150 VAC |
| Maximum current | 37.5 Amps at 48 VDC<br>(230 VAC nom.) |
| Current share | ±1 Amp from true average current between modules<br>(2 Amps average) |
| Static voltage regulation | ±0.5% from 0 to full load |
| Dynamic voltage regulation | ±4.0% for 10-90% or 90-10% load variation > 10ms |
| Hold up time | > 20ms (Output voltage > 43 VDC) |
| Ripple and Noise | < 100 mV peak to peak,<br>30 MHz bandwith<br>< 0.96mV rms psophometric |
| Output Protection | High voltage shutdown |

*** The module will disconnect itself from the mains for voltages above 300 VAC. For voltages between 275 and 300 VAC, the module will operate with reduced power factor.**

| OTHER SPECIFICATIONS | |
|---|---|
| Efficiency | > 90% |
| Isolation | 3.0 KVAC – input and output<br>1.5 KVAC – input earth<br>1.0 KVDC – output earth |
| Rectifier Alarms | Input voltage out of range (shutdown)<br>High output voltage shutdown<br>High temperature shutdown<br>Fan Failure |
| Protection | Output blocking diode<br>Mains voltage monitoring and disconnect at high/low voltage,<br>Non-destructive short circuit operation and high output voltage shutdown |
| Current limit signal | Yes (Open collector) |
| Visual indications | Green LED: ON, no faults<br>Red LED: Rectifier failure<br>Yellow LED bargraph: 10 LEDs showing output current (0-100%) |
| Operating temp | -40 to +70°C (-40 to +158°F)<br>derating above +50°C (+122°F) |
| Storage temp | -40 to +85°C (-40 to +185°F) |
| Cooling | 2 fans (front to back airflow)<br>Brushless w/ magnetic bearing |
| Fan Speed | Temperature regulated<br>High internal temperature: Full speed |
| MTBF | > 210,000 hours Telcordia Issue I, method III (a) |
| Acoustic Noise | < 55dBA (sound pressure) |
| Humidity | Operating:<br>5% to 95% RH non-condensing<br>Storage:<br>0% to 99% RH non-condensing |
| Dimensions | 214 x 41.5 x 243mm (wxhxd)<br>(8.43 x 1.64 x 9.57”) |
| Weight | 2.8kg (6.17lbs) |

| APPLICABLE STANDARDS | |
|---|---|
| Electrical safety | EN 60950<br>UL 60950 |
| EMC | ETSI EN 300 386 V.1.3.1<br>(telecommunication network)<br>EN 61000-6-3<br>(emission, light industry)<br>EN 61000-6-2<br>(immunity, industry) |
| Harmonics | EN 61000-3-2 |
| Environment | ETSI EN 300 019-2 |

**Specifications are subject to change without notice.**

### ORDERING INFORMATION

| Part no. | Description |
|---|---|
| 241114.800 | FLATPACK 1800 48V rectifier module |

241114.800.DS3 v.02


| Location | Company | Telephone | Fax |
|---|---|---|---|
| Europe | Eltek Energy AS | +47 32 20 32 00 | +47 32 20 32 10 |
| Americas | Eltek Energy, LLC | +1 815 459 9100 | +1 815 459 9118 |
| Asia/Pacific | Eltek Energy Pte Ltd. | +65 6 7732326 | +65 6 7753602 |
| China | Eltek Energy Ltd. | +852 28982689 | +852 28983189 |
| Middle East | Eltek Middle East | +971 4 887 1176 | +971 4 887 1175 |