



Sierra is the world's first multidirectional power converter. This solution offers many new features within a unique module!

 Telecom
  Datacom
  Mass transport
  Industry
  Power Utilities
  Renewable

**AC In**  
230 Vac

**DC In**  
48 Vdc

**AC Out**  
230 Vac

**DC Out**  
48 Vdc

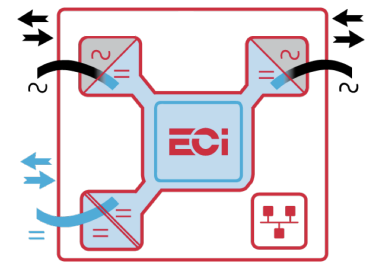
**Power**  
1.25 kVA  
1.2 kW

**up to 38 kVA**

## Technology

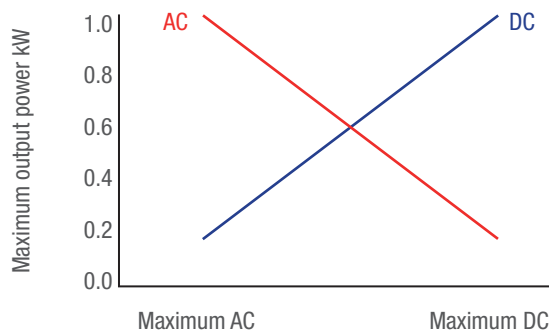
Sierra is the world's first **fully bidirectional** power converter. The three ports (two AC and one DC) built into each module can all function as **input** and **output**. This means that you can use it to **secure AC & DC loads** and charge **batteries** at the same time.

Sierra is also the right choice for **energy management** applications such as grid reinjection, peak shavings, phase balancing or **innovative solutions** based on energy sharing via a DC distribution.



## How it works?

At the heart of each module, there is a DC **energy buffer**. It uses the energy that comes, whatever its source, to feed what needs it. The total output power is **shared live** between the loads and the batteries. It's that simple! No configuration is required, you are totally autonomous.



### Key features:

- Secure AC & DC loads
- Modular (1.2 kW to 38 kW)
- Highest power density
- Hot-swappable capacity
- Compact, easy to install and operate
- User-friendly monitoring

The total output power per module is 1.2 kW, limited to 1 kW for each AC or DC port.

## Versions

Sierra 10 - 48/230 is also available in a **Subrack System** to provide up to 6 kW in just 1U high or **4.8 kW with built-in monitoring**.



For larger loads, use the Sierra 25 - 48/230.

Illustrations are non-binding and may include customized fittings.

# Sierra 10 - 48/230

## General

Part Number	T711730201
Cooling / Audible noise	Fan forced cooling / <65db @1meter
MTBF	200 000 hrs (MIL-2171F)
Dielectric strength DC/AC	4300 Vdc
RoHS	Compliant
Operating T° / Relative Humidity (RH) non-condensing	Tested according ETS300-019-2-3 Class 3.1 -20°C to 65°C, power de-rating from 40°C to 65°C / Max RH 95% for 96 hours per year
Storage T° / Relative Humidity (RH) non-condensing	Tested according ETS300-019-2-1 Class 1.2 -40°C to 70°C / Max RH 95% for 96 hours per year
Public transport T°/Relative Humidity (RH) non-condensing	Tested according ETS300-019-2-2 Class 3.1 -40°C to 70°C / Max RH 95% for 96 hours per year
Material (casing)	Zinc coated steel

## Power

### AC Input Data

Nominal voltage (AC) / Current	230 Vac / 4.6 A
Voltage range (AC)	150 - 265 Vac
Brownout	800 W @ 150 Vac / 1200 W @ 190 Vac linear decreasing
Power factor / THD	> 99% / < 3%
Frequency range (selectable) / synchronization range	50 Hz (range 47 - 53 Hz) / 60 Hz (range 57 - 63 Hz)

### DC Input Data

DC voltage: Nominal / range	48 Vdc / (40-60V) <sup>1</sup>
Nominal current (at 48 Vdc and 1000 W output)	22.4 A
Maximum input current (for 15 second) / voltage ripple	34 A / < 10 mV RMS

### AC Output Data

Efficiency AC to AC (EPC) / DC to AC / AC to DC	96% / >93% / >93%
Nominal voltage AC <sup>2</sup> (Adjustable)	230 V (200 - 240 Vac)
Frequency / frequency accuracy	50 or 60 Hz / 0.03%
Nominal Output power (VA) / (W)	1.25 kVA / 1 kW (at 1000 W AC load, still 200 W are available for 48V DC output)
Short time overload capacity	150% (15 seconds)
Admissible load power factor	Full power rating from 0 inductive to 0 capacitive
Total harmonic distortion (resistive load)	< 3%
Load impact recovery time (10% - 90%)	≤ 0.4 ms
Nominal current	5.4 A @ 230 Vac
Crest factor at nominal power	3 : 1 for load P.F. ≤ 0.7
Short circuit clear up capacity 0-20 ms	20.3 A
Short circuit current after 20 ms	9.9 A (20 ms to 15 s) , 7.4 A (15 s to 60 s), > 60 s - manual reset is required
AC output voltage stability	±1% from 10% to 100% load

### DC Output Data

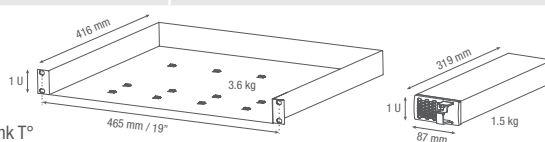
Nominal voltage (range)	53.5 Vdc (44 - 60 Vdc)
Maximum power	1.2 kW (at 1000 W DC load, still 200 W available for AC output)
Maximum current at 48 Vdc	20.8 A
Reverse polarity protection	YES
Efficiency AC to DC	> 93%
Max. Voltage interruption / total transient voltage duration (max)	0 sec / 0 sec

## Signaling & Supervision

Display	Synoptic LED
Supervision / Part number	Inview ranges: Inview S - T302004100, Inview S Slot - T602004110, Inview GW - T602004000
Remote on / off	On rear terminal of the shelf through Inview
Battery Monitoring / Part number	MBB (Measure Box Battery) - 6 dry contacts and 8 digital Inputs / T302006000

## Safety & EMC

Safety	EN62040-1
EMC	EN 61000-4-2 / EN 61000-4-3 / EN 61000-4-4 / EN 61000-4-5 / EN 61000-4-6 / EN 61000-4-8 ETSI EN 300386 v1.9.1



LE FONDS EUROPÉEN DE DÉVELOPPEMENT RÉGIONAL  
ET LA WALLONIE INVESTISSENT DANS VOTRE AVENIR

1 Permanent 1200 W / de-rating apply based on internal heatsink T°

2 Operation within lower voltage networks leads to de-rating of power performances.

Sierra 10 - 48/230 – Datasheet v2.5 Specifications can change without notice. New data will be updated on our website: [www.cet-power.com](http://www.cet-power.com).

The present equipment is protected by several international patents, trademarks and copyrights.