



Sierra is the world's first multidirectional power converter. The industrial version of this solution offers many new features within a unique module!

 Telecom
  Datacom
  Mass transport
  Industry
  Power Utilities
  Renewable



Applications

Designed for **110 Vdc infrastructures**, this solution can be installed in **industrial plants** and **marine environments** for instance.

You don't use 110 Vdc? Discover our versions designed for 48Vdc infrastructures on our website.

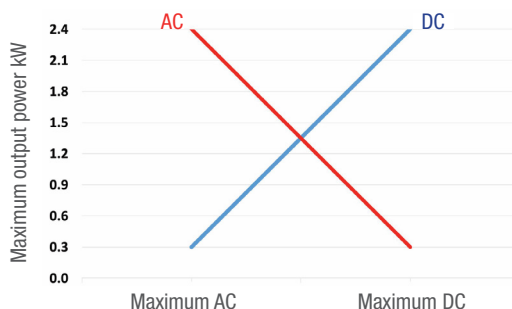
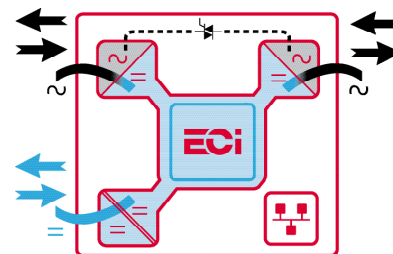
Technology

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.



The total output power per module is 2.7 kW, limited to 2.5 kW for each AC or DC port.

Versions

4 modules can be integrated into 2U high shelves to provide up to 10.8 kW:



Illustrations are non-binding and may include customized fittings.

Key features:

- Secure AC & DC loads
- Modular (2.7 kW to 2 MW)
- Highest power density
- Hot-swappable capacity
- Compact, easy to install and operate
- User-friendly monitoring

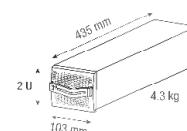
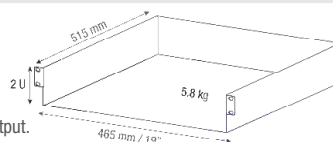
Sierra 25 - 110/230

General	
Part Number: Module / Shelf without Isolation Port / Shelf with Isolation Port	T721D50201 / T724D50000 / T724D50010
Cooling / Audible noise	Fan forced cooling / <65db @1meter
MTBF	240 000 hrs (MIL-217IF)
Dielectric strength DC/AC	2100 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)	Nickel-Zinc coated steel
Power	
AC Input Data	
Nominal voltage / Current	230 Vac / 11.7 A
Voltage range	195 - 290 Vac (De-rating from 195 to 150 Vac)
Brownout	2500 W @ 195 Vac linear decreasing
Power factor / THD	> 0.99 / < 3%
Frequency (Synchronization range)	50 Hz (47 - 53 Hz) or 60 Hz (57 - 63 Hz)
DC Input Data	
Nominal voltage (range)	110 Vdc (90 - 150 Vdc) ¹
Nominal current (at 110 Vdc and 2500 W output)	24.3 A
Maximum input current (for 15 seconds) / voltage ripple	30.3 A / < 10 mV RMS
AC Output Data	
Efficiency AC to AC (EPC) / DC to AC / AC to DC	> 96% / > 93.7% / > 93.7%
Nominal voltage ² (Adjustable)	230 Vac (200 - 240 Vac)
Frequency / frequency accuracy	50 or 60 Hz / 0.03%
Nominal Output power (VA) / (W)	3 kVA / 2.5 kW (at 2.5 kW AC load, still 200 W available for DC load)
Short time overload capacity	125% (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	13 A @ 230 Vac
Crest factor at nominal power	3 : 1 for load P.F. ≤ 0.7
Short circuit clear up capacity at AC input / On battery	109 A / 34 Arms for 20 ms
Short circuit current after > 20 ms	22.5 A for 15 seconds
AC output voltage stability	±1% from 10% to 100% load
Static / Dynamic voltage regulation	±1% between 10% and 100% load / <5% from 0 to 100% to 0 load impact (100 ms)
DC Output Data	
Nominal voltage (range)	110 Vdc (90 - 150 Vdc)
Maximum power	2.5 kW ³ (at 2.5 kW DC load, still 200 W available for AC output)
Maximum current at 110 Vdc	24.3 A
Reverse polarity protection	YES
Efficiency AC to DC	> 93.7%
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 GW - T602004000
Remote ON / OFF	On rear terminal of the shelf through Inview
Battery Monitoring / Part number	UMB (Universal Measure Box) - 3 dry contacts and 4 digital Inputs / T602006110
Safety & EMC	
Electrical Safety	IEC/EN 60950, IEC/EN 62040-1, IEC/EN 62477-1
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

1 Permanent 2500 W / de-rating apply based on internal heatsink T°

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

3 AC output load is the highest priority. Even if AC output is fully loaded (2.5 kW), still 200 W is available for DC output.



Sierra 25 - 110/230 - Datasheet - v1.2 Specifications can change without notice. New data will be updated on our website: www.cet-power.com.

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