



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, 240 & 277
Vac

DC In
380 Vdc

AC Out
230, 240 & 277
Vac

DC Out
380 Vdc

Power
3 kVA
2.7 kW


up to
2 MW

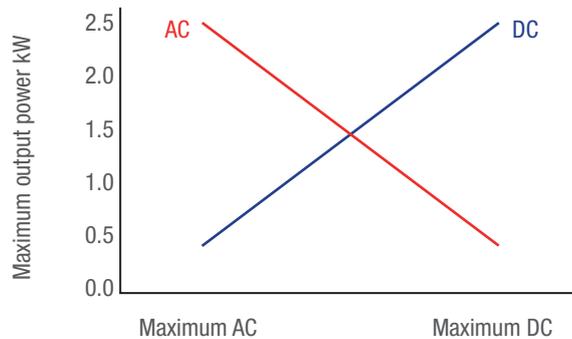
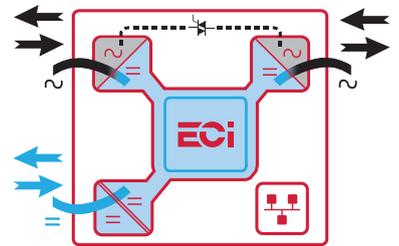
Technology

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

This Sierra version is designed for **380 Vdc** and available in **230, 240** and **277 Vac**.

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



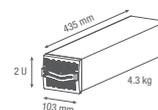
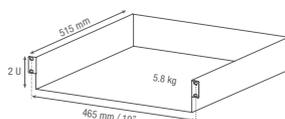
Key features:

- 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

Illustrations are non-binding and may include customized fittings.

Sierra 25 - 380/230-277Vdc

General	
Part Number: Module / Shelf / Shelf without Isolation	T721D70201 / T724D70010 / T724D70000
Cooling / Audible noise	Fan forced cooling / <65db @1meter
MTBF	240 000 hrs (MIL-217-F) at 30°C ambient and 80% load
Dielectric strength DC/AC	2100 Vdc
RoHS / Material (casing)	Compliant / Aluzinc steel
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
Vibration	GR63 office vibration 0 to 100 hz-0.1 g / transport vibration 5-100 Hz 0.5 g 100 to 500 hz-1.5 g / Drop test
Altitude above sea without de-rating of power	< 1500 m / derating > 1500 m – 0.8 % per 100 m / max 4000 m
Power	
AC Input Data	
Nominal voltage / Current	230 Vac / 11.8 A, 240 Vac / 11.0 A and 277 Vac / 9.5 A
Voltage range	150 - 293 Vac (De-rating from 195 to 150 Vac)
Brownout	1600 W @150 Vac / 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)	336 Vdc (200 - 430 Vdc) ¹ derating starts @259 Vdc
Nominal current at 336 Vdc	8 A
Maximum input current (for 15 seconds) / voltage ripple	9.9 A / < 250 mV RMS
Reverse polarity protection	Yes
AC Output Data	
Efficiency AC to AC (EPC) / DC to AC / AC to DC	> 96% / > 94.5% / > 94.5%
Nominal voltage ² / Current (User selectable)	230 Vac / 13.1 A, 240 Vac / 12.5 A and 277 Vac / 10.8 A (200 - 277 Vac)
Frequency / frequency accuracy	50 or 60 Hz / 0.03%
Nominal Output power	3 kVA / 2.5 kW at 230 Vac (at AC full 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 < 20 ms at AC input / On battery	109 Arms for 20 ms / 34 Arms for 20 ms
Short circuit current after > 20 ms	22.5 A for 15 s
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)	336 Vdc (200 - 430 Vdc) ¹
Nominal power	2.5 kW ³ (at DC full load, still 200 W available for AC output)
Nominal current at 336 Vdc	8 A
Efficiency AC to DC	> 94.5%
Max. Voltage interruption / total transient voltage duration (max)	0 sec / 0 sec
Signaling & Supervision	
Display	Synoptic LEDs on module and touchscreen with Inview S and Inview X
Supervision / Part number	Inview ranges: Inview X - T602004200 and Inview S - T602004100
Remote ON / OFF	At rear terminal of the shelf
Battery Monitoring / Part number	MBB - HV (Measure Box Battery) - 6 dry contacts and 8 digital Inputs / T602006380
Safety & EMC	
Electrical Safety	EN60950-EN62040-1-UL1778-IEC62109/1-IEC62109/2
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 / FCCpart 15 class A



- 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 - 380/230-277 - Datasheet v1.7 Specifications can change without notice. New data will be updated on our website: www.cet-power.com.

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