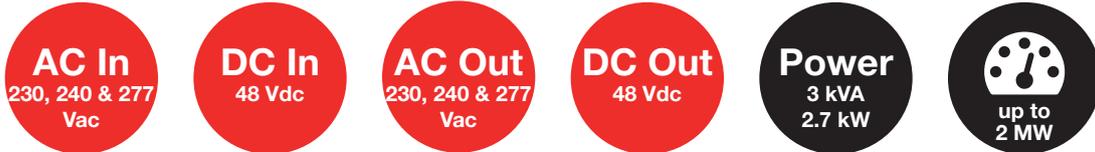


SIERRA 25 48/277 SHELF ECI



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

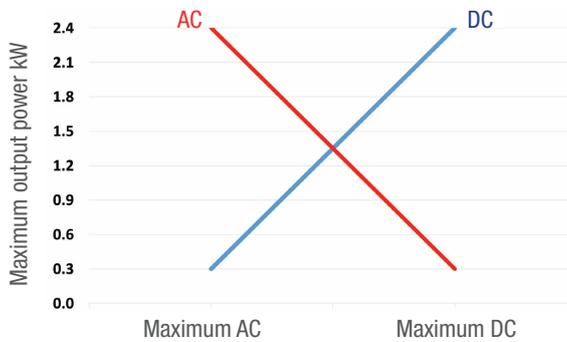
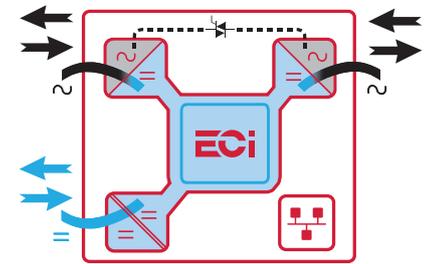


Technology

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.

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 (2.7 kW to 2 MW)
- Highest power density
- Hot-swappable capacity
- Extended AC input range 150 - 293 Vac
- Re-inforce coating for harsh environment conditions
- User-friendly monitoring

The total output power per module is 2.7 kW, limited to 2.4 kW for each AC or DC port.

Version

4 modules can be integrated into 2U high shelves to provide up to 10.8 kW (AC + DC):



Illustrations are non-binding and may include customized fittings.

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General	
Part Number: Module / Shelf	T721D30271 / T724730070
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	4300 Vdc
RoHS / WEEE	Compliant to RoHS Directive 2011 /65/EU / WEEE Directive 2012/19/EU
Operating T° / Relative Humidity (RH) non-condensing	Tested according ETS300-019-2-3 Class 3.1 Full power from -40°C to +40°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 GR3108 Class 2 -40° C to +70° C / RH 5% to 85%
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
Maximum Altitude	2000 m, de-rating above 1500 m at 0.8% per 100 m
Material (casing)	Aluzinc steel
Type of compatible battery chemistry	Lead-based (Lead-acid, Lead carbon, Pure lead) and Li-Ion (LFP, NMC , NCA, LTO, LCO, LMO)
Country of origin	Belgium / India / China
AC Input Data	
Nominal voltage / current at full output power (AC+DC) 2.7 kW	208 Vac / 4 x 13.8 A, 230 Vac / 4 x 12.4 A and 277 Vac / 4 x 10.3 A
Voltage range	150 – 293 Vac (derating from 150 to 195 Vac)
Brownout	1600 W @150 Vac / 2400 W @195 Vac linear decreasing
Power factor / THD	0.8 / < 3%
Frequency (Synchronization range)	50 Hz (47 – 53 Hz) or 60 Hz (57 – 63 Hz)
DC Input Data	
Nominal voltage (range)	48 Vdc (32 – 63 Vdc) ¹ , derating from 32 – 44 Vdc
Nominal current	4 x 54.4 A
Maximum input current (for 15 seconds) / voltage ripple	4 x 66.8 A / < 10 mV RMS
Reverse polarity protection	Yes
AC Output Data	
Efficiency AC to AC (EPC) / DC to AC / AC to DC	> 96% / > 93.7% / > 93.7%
Nominal voltage ² (Current) / Adjustable	208 Vac (4 x 13.2 A), 230 Vac (4 x 13 A) & 277 Vac (4 x 10.8 A) / 208 – 277 Vac
Frequency / frequency accuracy	50 or 60 Hz / 0.03%
Nominal Output power ³	4 x 3 kVA / 4 x 2.4 kW @ 230 Vac (at AC full load, still 300 W available for 48 V 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
Crest factor at nominal power	3 : 1 for load P.F. ≤ 0.7
Short circuit clear up capacity at AC input / On battery	4 x 100 A / 4 x 34 Arms for 20 ms
Short circuit current after > 20 ms	4 x 22.5 A for 15 seconds
Short circuit current with inrush current mode activated	4 x 34.75 Arms for 500 ms
AC output voltage stability	±1% from 10% to 100% load
DC Output Data	
Nominal voltage (range)	48 Vdc (32 – 63 Vdc)
Maximum power	4 x 2.4 kW (constant power from 48 V to 63 V derating constant current from 32 V to 48 V) within AC output voltage 195 to 293 Vac without AC output load
Maximum current at 48 Vdc	4 x 54.4 A
Efficiency AC to DC	> 93.5%
Signaling & Supervision	
Display	Synoptic LED
Supervision / Part number	Inview ranges: Inview X - T602004200, Inview S - T602004100 and Inview GW - T602004000
Remote ON / OFF	At rear terminal of the shelf
Battery Monitoring / Part number	MBB (Measure Box Battery) - 6 dry contacts and 8 Digital Inputs / T302006000
Safety & EMC	
Safety	IEC62109-1 / IEC62109-2 / UL1778
Protective Class	Class I
Pollution Degree	Degree II
Over Voltage Category	OVC II
EMI/EMC	FCC Part 15 class A, CISPR 32 Class A, IEC61000-4-2/3/4/5/6 ETSI300386
Environment	ETSI300019
NEBS	GR3108 class 2
Ingress Protection	IP20 ⁴

- 1 Permanent 2400 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 (2.4 kW), still 300 W is available for DC output.
- 4 IP20 on front surface during installation in the built-in product.

SIERRA 25 48/277 SHELF ECI - Datasheet - v1.0 Specifications can change without notice. New data will be updated on our website: www.cet-power.com.
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