HELIOS POWER SOLUTIONS

Subrack System Sierra 10 - 48/230

ECi technology inside

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 6 kW

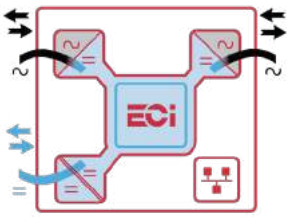
Introduction

This **Subrack System** is an all-in-one solution including the **Sierra 10 - 48/230** power converters, **Inview S Slot monitoring** and AC & DC outputs in only **1U high**. The system is single-phase and designed for 48 Vdc (DC loads & batteries) and 230 Vac (grid & AC loads) infrastructures. The solution is modular: you can start with a single module (1.2 kW) and increase, according to your needs, up to 6 kW.

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.

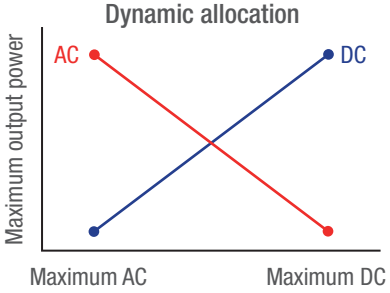
Sierra is also the right choice for **energy management** applications such as grid reinjection, peak shavings, phase balancing or **innovative solutions** based on energy sharing via a DC distribution.



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.

Dynamic allocation



Versions

The Subrack System is available in different versions:

- **All-in-one:** from 1 to 4 Sierra modules with Inview S Slot monitoring included.
- **All-in-one with sockets:** same as all-in-one but with 2 IEC sockets to easily plug your AC loads.
- **External monitoring:** up to 5 Sierra modules with Inview S monitoring for door or wall mounting.

All-in-one

All-in-one with sockets

System with external monitoring

Key features:

- Secure AC & DC loads
- Modular (by increments of 1.2 kW)
- Highest power density (1U high)
- Hot-swappable capacity
- Easy to install and operate
- User-friendly monitoring

Illustrations are non-binding and may include customized fittings.

AU: sales@heliosps.com.au **NZ:** sales@heliosps.co.nz **Asia & ME:** sales@heliosps.asia

Subrack system - Sierra 10 - 48/230

General	1.2 kW / 1.25 kVA	2.4 kW / 2.5 kVA	3.6 kW / 3.75 kVA	4.8 kW / 5 kVA	6 kW / 6.25 kVA
Cooling / Audible noise	Self-adjustable speed / < 65 dBA at 1 meter				
MTBF	200 000 hrs (MIL-217IF)				
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)	Aluminium / Zinc coated steel				
Part number					
All-in-one	S71A73E0104SN000N001	S71A73E0204SN000N001	S71A73E0304SN000N001	S71A73E0404SN000N001	NA
All-in-one with sockets	S71A73E0103SN0KKN001	S71A73E0203SN0KKN001	S71A73E0303SN0KKN001	NA	NA
System with external monitoring	S71A73E0105SN000K001	S71A73E0205SN000K001	S71A73E0305SN000K001	S71A73E0405SN000K001	S71A73E0505SN000K001
Power					
AC Input Data					
Nominal voltage (AC) / Current	230 Vac				
Nominal current	4.6 A	9.2 A	13.8 A	18.4 A	23 A
Voltage range (AC)	150 - 265 Vac				
Brownout for per module	800 W @ 150 Vac / 1000 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)[1]				
Nominal current (at 48 Vdc)	22.4 A	44.8	67.2	89.6	112
Maximum input current (for 15 second) / voltage ripple	34 A / < 10 mV RMS	68 A / < 10 mV RMS	101 A / < 10 mV RMS	135 A / < 10 mV RMS	168 A / < 10 mV RMS
AC Output Data					
Efficiency AC to AC (EPC) / DC to AC / AC to DC	96% / > 93% / > 93%				
Nominal voltage AC[2] (Adjustable)	230 V (200 - 240 Vac)				
Frequency / frequency accuracy	50 or 60 Hz / 0.03%				
Nominal Output power[3]	1.25 kVA / 1 kW	2.5 kVA / 2 kW	3.75 kVA / 3 kW	5 kVA / 4 kW	6.25 kVA / 5 kW
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 @ 230 Vac	5.4 A	10.8	16.2	21.6	27.2
Crest factor at nominal power	3 : 1 for load P.F. ≤ 0.7				
Short circuit clear up capacity 0-20 ms	21.7 A	43.4 A	65.1 A	86.8 A	110.5 A
Short circuit current after >20 ms for one minute	8.1 A	16.2 A	24.3 A	32.4 A	40.5
AC output voltage stability	±1% from 10% to 100% load				
DC Output Data (per module)					
Nominal voltage (range)	53.5 Vdc (44 - 60 Vdc)				
Maximum power[4]	1 kW	2 kW	3 kW	4 kW	5 kW
Maximum current at 48 Vdc	20.8 A	41.6 A	62.4 A	83.2 A	104 A
Reverse polarity protection	YES				
Efficiency AC to DC	> 93%				
In Transfer Performance					
Max. Voltage interruption / total transient voltage duration (max)	0 sec / 0 sec				
Signaling & Supervision					
Supervision (Part number)	Inview S Slot (T602004110) and Inview S (T302004100)				
Remote on / off	On rear terminal of the shelf				
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				

1 Permanent 1000 W / de-rating apply based on internal heatsink T°
2 Operation within lower voltage networks leads to de-rating of power performances.
3 Each module at 1000 W AC load, still **200 W** available for **48 Vdc output**.
4 Each module at 1000 W DC load, still **200 W** available for **230 Vac AC output**