

Micro Modular Converter

Hybrid smart power solution delivering reliable power for telecom

Micro Converter units are **modular** and can be combined to **suit any site power need**, from small good-grid sites up to off-grid hybrid sites with gensets and solar power.



Micro Modular Converter units features a unique outdoor power conversion technology, based on natural convection cooling. The conversion of AC single or three phase to -48 VDC is performed without any cooling fans or filters and therefore does not require any maintenance.



Easy Installation & Maintenance

Micro power systems feature sealed converter units for easy installation, with remote support from Clear Blue's expert service team. More than 80% of issues are managed and resolved through Clear Blue's remote management service.



Maximum Uptime

The system ensures uptime with Smart Off-Grid 24x7 monitoring, alerts, and alarms. Predictive analytics, weather forecasting, and load control enable proactive maintenance and expert management for maximum performance and reliability.



Long Life

The Clear Blue system ensures that battery power management, lifecycle optimization and proactive maintenance are easy and can be controlled over the internet, so you get the longest life possible out of your batteries.

Micro Converter

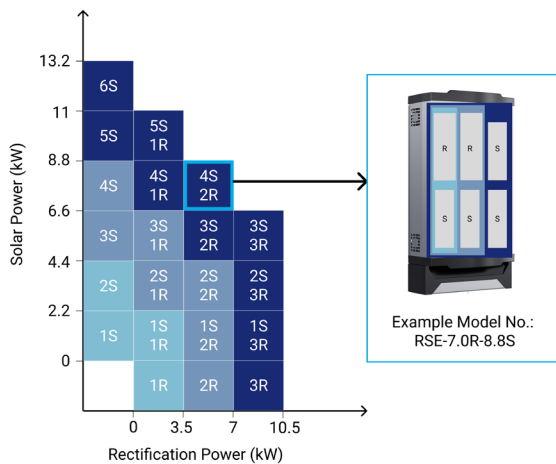
Technical Data



General	
Mounting	Frame support on cabinet
Height x Width x Depth	995 x 541 x 234 mm
Weight	~65kg depending on solar and rectification power

AC Input	
Type	Dual single-phase inputs to each rectifier, inputs controller via solid state transfer switch, no moving parts, convection cooled.
Nominal	230-250 VAC
Range	85-300V VAC
Frequency	45-65 Hz
Input Current	Qty. 1-3 x 19A
Power Factor	>0.99
THD	<5% at 230 VAC, 100% load
Input Voltage Derating	Linear derating for each phase starting at 190 VAC, down to 1500W @85 VAC
Protection	Varistor transient protection of all phases towards neutral. Varistor and GDT transient protection towards protective earth. Solid state transfer switch for long duration over voltages.

Converter Power Modularity





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DC Output	
Operational Range	-42 to -58 VDC
Rectifier Capacity	Qty. 1-3 x 3500W
Output Power	10.5 kW
Current	195 A @54 VDC
Max Current	235 A
Output Power Derating (Continuous Operation 230VAC)	Continuous power at 45C ambient temperature: 9750 W Continuous power at 50C ambient temperature: 8500 W
Output Power Derating (Cyclic Operation 230VAC)	Full power at 45C ambient temperature for 65 minutes, then derating to 9750W Full power at 50C ambient temperature for 40 minutes, then derating to 9750W <i>Full power is available again after cooling period of ~45 minutes</i>
Rectifier Peak Efficiency	Linear derating for each phase starting at 190 VAC, down to 1500W @85 VAC
DC Power System Efficiency	Varistor transient protection of all phases towards neutral. Varistor and GDT transient protection towards protective earth. Solid state transfer switch for long duration over voltages.
Build-in Automated Transfer Switch (ATS)	Built-in automated transfer switch (ATS) eliminates the need to purchase and wire an external ATS.

Solar Converter	
Nominal Input Voltage	125 VDC
Permitted Input Voltage Range	50 to 165 VDC
Power Conversion	6600 W for solar and rectifier hybrid models 13200 W for pure solar models
Maximum Input Current	Qty. 1-6 x 22 ADC
Power Conversion Peak Efficiency	> 96.5%

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Technical Data

Environmental	
Nominal Temperature	-20C to 45C
Operating Temperature	-20C to 50C
Storage Temperature	-40C to 70C
Relative Humidity	0 to 99%
Cooling	Natural Convection Cooling
IP Code	IP65 Conversion part, IP54 Connection part
EMC	ETSI EN 300 386 V1.6.1
Safety	EC/EN 60950-1, EC/EN 60950-22 IEC EN IEC 62368-1:2014
Environmental Standards	ETSI 300 019-1-2 Class 2.3 Public transportation ETSI 300 019-1-4 Class 4.2H Stationary use at non-weather protected locations - extremely warm dry CE and RoHS compliant
MTBF	>350 000h (@T ambient 25C) according to Siemens SN29500
Isolation	3.0 kVAC mains - Earth 1.5 kVAC mains - Sec 707 VDC mains - Earth