2023

Product
Catalogue

cinergia

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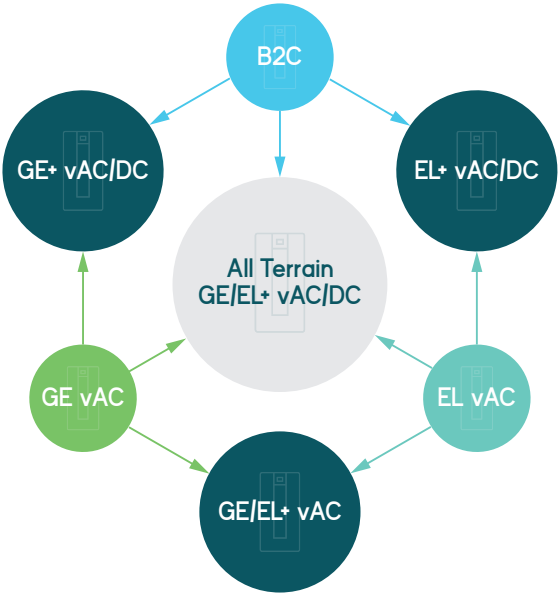
Product Overview

Discover our catalogue!

In this catalogue you will find all the detailed information of our products, the different models, the characteristics of our software and the applications in which we can give service.

PRODUCTS

CINERGIA offers a wide range of products specially designed for testing, perfectly suitable for most applications in the field of Renewable Energy, Smartgrids and ESS, PV Panel Emulation and PV Inverter Testing, Anti-islanding, Power HiL, IEC Testing, Battery and Electric Vehicle Testing. Our product catalogue is unique for the flexibility and versatility of our units. Three main functions are the base of our catalogue: grid simulator (regenerative 4Q AC voltage source), AC electronic load (regenerative 4Q AC current source) and DC Sink/Source (regenerative 2Q/4Q DC bidirectional sink/source). Each CINERGIA product will include one, two or the three main functions providing a high versatility.



NEW PRODUCT

All Terrain GE&EL+ vAC/DC SiC

Grid Simulator + Electronic Load

The GE&EL product family is the aggregation of Grid Simulators, Electronic Loads and Bidirectional DC Converters in one product.

AC Power
50 kW

DC Power
50 kW

AC Current (3 channel / 1 channel)
73 A - 219 A

DC Current (3 channel / 1 channel)
±73 A / ±219 A

Key Features

Bidirectional and Regenerative

Clean grid current:

THDi < 3% and PF > 0.98

Parallelization of units to increase the power

The most flexible testing equipment in a single cabinet

What's new

HIGHER SWITCHING FREQUENCY

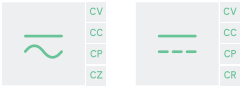
Thanks to the SiC MOSFETs in our equipment, the switch is increased up to 60 kHz.

BANDWIDTH

A higher bandwidth of the converter translates into a better capacity to control fast-changing and high-frequency signals.

RIPPLE

The increase of the switching frequency is high enough to significantly improve the current ripple (3 times) and voltage ripple (2.75 times) due to the switching.



EFFICIENCY

Thanks to the use of SiC MOSFETs at both converters of the back-to-back configuration, the peak efficiency of the whole system is boosted above 94%.

CURRENT IN DC MODE

Our equipment has the same current capacity in DC as in AC mode.

Grid Simulator + Electronic Load (GE&EL+)

The GE&EL product family is the aggregation of Grid Simulators, Electronic Loads and Bidirectional DC Converters in one product.

Models
GE&EL+ vAC/DC SiC
GE&EL+ vAC/DC
GE&EL+ vAC

AC Power
7.5 kW - 160 kW

AC Current (per phase)
11 A - 232 A

DC Power*
7.5 kW - 160 kW

DC Current (3 channel / 1 channel)*
±10 A / ±30 A - ±185 A / ±555 A

*Only in models with DC functionality

Grid Simulator (GE+)

Grid Simulators are power electronic devices that emulate AC electrical grids in both normal and disturbed conditions.

Models
GE+ vAC/DC Full
GE+ vAC

AC Power
7.5 kW - 160 kW

AC Current (per phase)
11 A - 232 A

DC Power*
7.5 kW - 160 kW

DC Current (3 channel / 1 channel)*
±10 A / ±30 A - ±185 A / ±555 A

*Only in models with DC functionality

Electronic Load (EL+)

The EL+ family is power electronic device designed to emulate AC and DC electronic loads.

Models
EL+ vAC/DC Full
EL+ vAC

AC Power
7.5 kW - 160 kW

AC Current (per phase)
11 A - 232 A

DC Power*
7.5 kW - 160 kW

DC Current (3 channel / 1 channel)*
±10 A / ±30 A - ±185 A / ±555 A

*Only in models with DC functionality

Bidirectional DC Converter (B2C+)

CINERGIA's DC Programmable Power Supplies are designed to generate a controlled DC source or load.

Models
Battery Pack Tester
Battery Emulation
PV Panel Emulation

AC Power
-

DC Voltage (normal range/HV option)
11 A - 232 A

DC Power
7.5 kW - 160 kW

DC Current (independent / parallel)
±10 A / ±30 A - ±185 A / ±555 A

High Frequency (Avionics)

Regenerative Electronic Load products capable of working in a frequency range of 360 to 900Hz. Designed to simulate the different loads that can be found in the aircraft.

Models
EL+ vHF/DC
EL+ vHF

AC Power
7.5 kW - 160 kW

AC Current (per phase)
11 A - 232 A

DC Power*
7.5 kW - 160 kW

DC Current (3 channel / 1 channel)*
±10 A / ±30 A - ±185 A / ±555 A

*Only in models with DC functionality

Power HiL (PHiL)

Optimized in performance and price for Power Hardware in the Loop applications. This version includes Power Amplifier functions to connect with Real-Time Control Systems.

Models
EL+ vHiL
GE+ vHiL

AC Power
7.5 kW - 160 kW

AC Current (per phase)
11 A - 232 A

DC Power
7.5 kW - 160 kW

DC Current (3 channel / 1 channel)
±10 A / ±30 A - ±185 A / ±555 A

Isolated Transformers

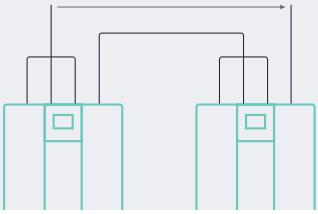
In all DC configurations, it is necessary to use isolation transformers at the input of the device to guarantee the safety of the system.

Three different Master/Slave connection possibilities

Serial

B2C+
(only in DC)

80 to 1500 V ($2 \times V_{rated}$)
0 to $\pm 1 \times I_{rated}$ – 0 to $\pm 2 \times P_{rated}$

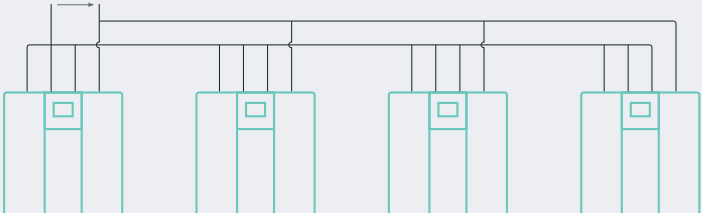


Parallel

Up to 8 units

GE+ vAC
EL+ vAC
B2C+

40 to 750 V ($1 \times V_{rated}$)
0 to $\pm N \times I_{rated}$ – 0 to $\pm N \times P_{rated}$ (N up to 8)

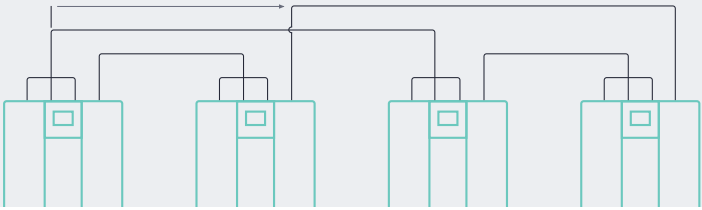


Serial/Parallel

Up to 8 units

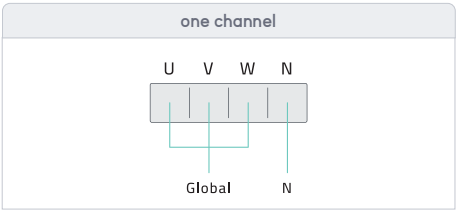
B2C+
(only in DC)

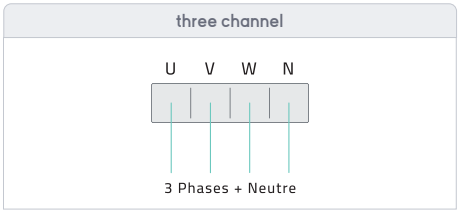
80 to 1500 V ($2 \times V_{rated}$)
0 to $\pm N \times I_{rated}$ – 0 to $\pm N \times P_{rated}$ (N up to 8)



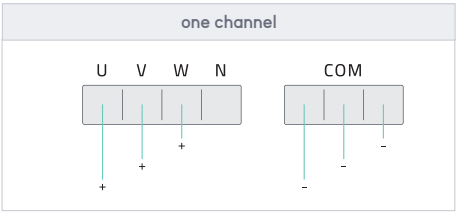
One or three channels connections

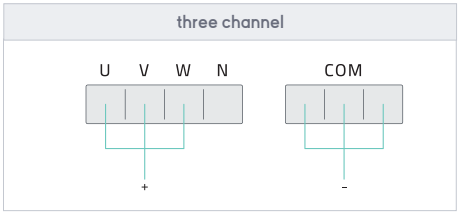
AC Mode





DC Mode





	Units with AC capabilities		Units with DC capabilities	
Unit	**AC Power**	**AC Current**	**DC Power**	**DC Current**
Unit+7.5	7.5 kW	11 A / 33 A	7.5 kW	±10A / ±30A
Unit+10	10 kW	15 A / 45 A	10 kW	±15A / ±45A
Unit+15	15 kW	22 A / 66 A	15 kW	±20A / ±60A
Unit+20	20 kW	29 A / 87 A	20 kW	±25A / ±75A
Unit+30	27 kW	40 A / 120 A	27 kW	±30A / ±90A
Unit+40	40 kW	58 A / 174 A	40 kW	±40A / ±120A
Unit+50	50 kW	73 A / 219 A	50 kW	±50A / ±150A
Unit+60	54 kW	80 A / 240 A	54 kW	±57A / ±171A
Unit+80	80 kW	116 A / -	80 kW	±105A / ±315A
Unit+100	100 kW	145 A / -	100 kW	±130A / ±390A
Unit+120	108 kW	157 A / -	108 kW	±130A / ±390A
Unit+160	145 kW	211 A / -	145 kW	±155A / ±465A
Unit+200	160 kW	232 A / -	160 kW	±185A / ±555A

Software Platform

The user interface used by CINERGIA devices has been developed by our R&D team, to offer total control of the device, with a comfortable and intuitive design. This allows us to take full advantage of the capabilities of the device, as well as the programming and execution of standardized or self-created tests.

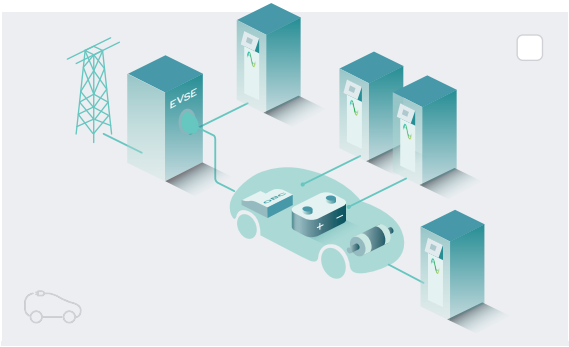
Remote Control port
~ LAN Ethernet with Modbus/TCP protocol.
~ Labview Drivers
~ RS485 (optional)

Digital IO port
~ 4 digital inputs
~ 3 relay outputs
~ 1 emergency stop

Optional analogue port
~ 6 analogue input 0-10V
~ 6 analogue output 0-10V

Features and capabilities

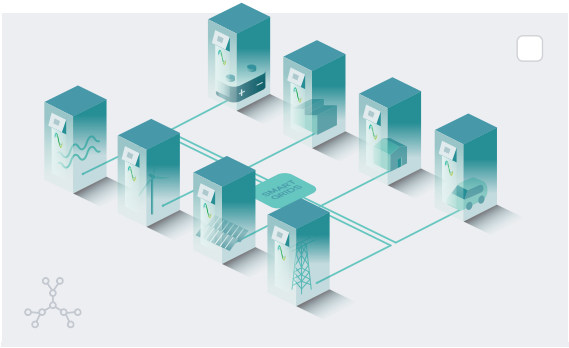
- AC Operation
- Harmonics
- Power and Impedance Control
- Disturbance Generation
- IEC Testing (Pre-compliance) (Opt)
- DC Operation
- Multichannel
- Battery Pack Tester (Opt)
- Battery Emulation (Opt)
- Steps Mode
- Sequence
- PV Panel Emulation (Opt)



Electromobility

Products for this application

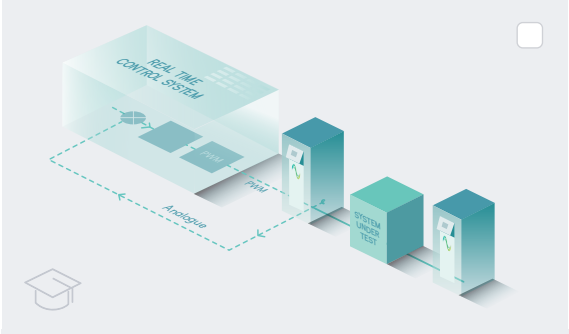
- EL+ vAC/DC Full
- Battery Emulation
- Battery Pack Tester
- B2C+
- GE+vAC
- GE+ vAC/DC Full
- GE&EL+ vAC/DC
- GE&EL+ vAC



Smart Grids

Products for this application

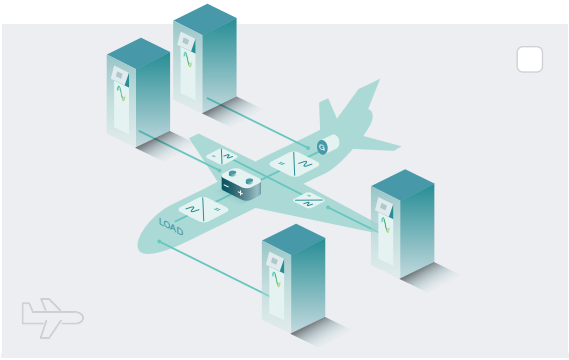
- EL+ vAC
- EL+ vAC/DC Full
- Battery Emulation
- B2C+
- GE+vAC
- GE+ vAC/DC Full
- GE&EL+ vAC/DC
- GE&EL+ vAC



Academic & RCP

Products for this application

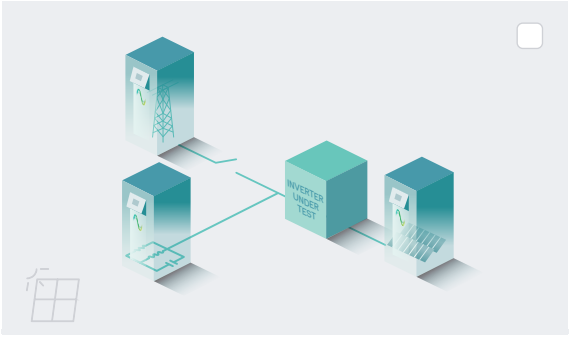
- EL+ vHiL
- EL+ vAC/DC Full
- B2C+
- GE+ vHiL
- GE+ vAC/DC Full
- GE&EL+ vAC/DC
- GE&EL+ vAC



Avionics

Products for this application

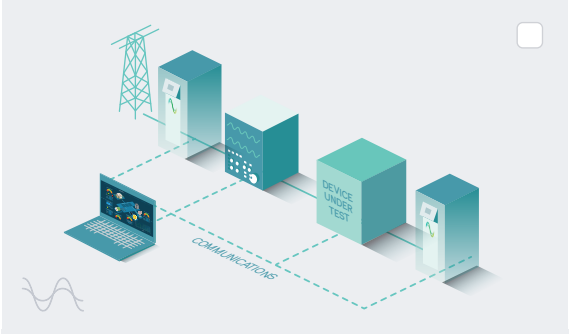
- EL+ vHF/DC
- EL+ vHF
- EL+ vAC
- EL+ vAC/DC Full
- B2C+
- GE&EL+ vAC/DC
- GE&EL+ vAC



Photovoltaic

Products for this application

- EL+ vAC/DC Full
- PV Panel Emulation
- B2C+
- GE+vAC
- GE+ vAC/DC Full
- GE&EL+ vAC/DC
- GE&EL+ vAC

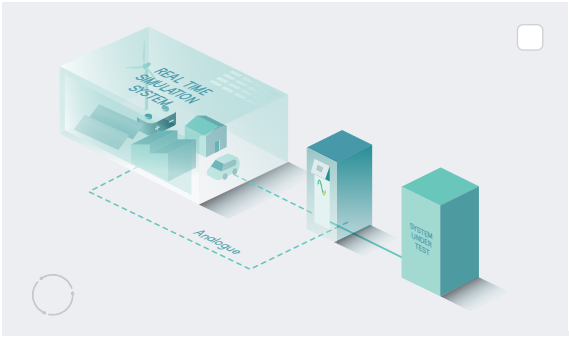


Industrial Test

Products for this application

- EL+ vAC/DC Full
- PV Panel Emulation
- B2C+
- GE+vAC
- GE+ vAC/DC Full
- GE&EL+ vAC/DC
- GE&EL+ vAC

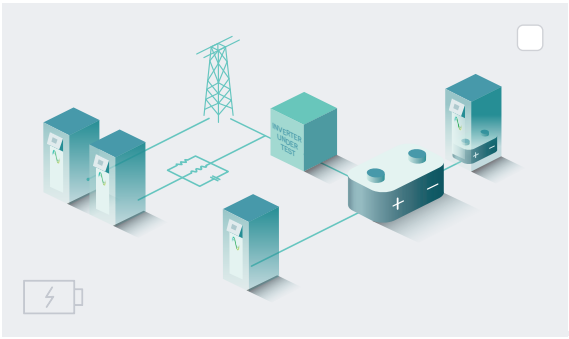
Regenerative Power Converters 11



Power HiL

Products for this application

- **EL+ vHiL**
- **EL+ vAC/DC Full**
- **B2C+**
- **GE+ vHiL**
- **GE+ vAC/DC Full**
- **GE&EL+ vAC/DC**
- **GE&EL+ vAC**



Energy Storage Sys.

Products for this application

- **Battery Emulation**
- **Battery Pack Tester**
- **B2C+**
- **GE+ vAC/DC Full**
- **GE&EL+ vAC/DC**
- **GE&EL+ vAC**

Contact us!

Do you want to know more about our products or know which one is best suited to your project?

Send us an email to **comercial@cinergiapower.com**

A combination of knowledge, experience and passion for what we do.

Regenerative Power Electronics Solutions

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