Product
Catalogue

dataTec

Mess- und Prüftechnik. Die Experten.

cinergia

Ihr Ansprechpartner /
Your Partner:

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Product Overview

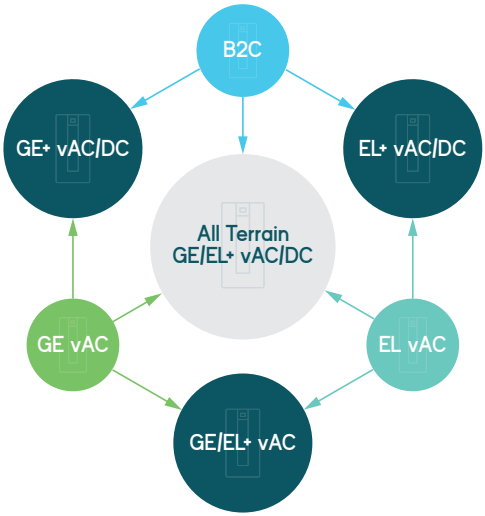
CINERGIA offers a wide range of products specifically designed for testing, perfectly suitable for most applications in the field of Renewable Energy, Smartgrids and ESS, PV Panel Emulation and PV Inverter Testing, Anti-islanding, Power HiL, IEC Testing, Battery and Electric Vehicle Testing.

FUNCTIONS

Our product catalogue is unique for the flexibility and versatility of our units. Three main functions are the cornerstone of our catalogue:

- Grid Simulator (regenerative 4Q AC voltage source)
- AC Electronic Load (regenerative 4Q AC current source)
- DC Power Supply (regenerative 2Q/4Q DC bidirectional sink/source)

Each CINERGIA product can include one, two or the three main functions providing a high versatility.



TECHNOLOGIES

IGBT

IGBTs are ideal for low and high-power applications with moderate switching speeds, offering a balance between efficiency and high current handling.

SiC

SiC MOSFETs provide faster switching, higher efficiency, and compact designs, making them perfect for high-performance applications.

FORMATS

Cabinet

Larger, standalone enclosures that provide a fully integrated system with all components housed in one unit.

Rack

Compact, modular design that fits into standard 19-inch server racks. Ideal for space-saving setups, flexibility, and easy scalability in labs or industrial environments.

NEW ARRIVAL

GE&EL AC/DC SiC-RSe Enhanced

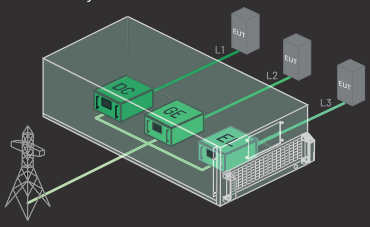
Grid Simulator + Electronic Load

4 Quadrant Regenerative AC Grid Simulator +
4 Quadrant Regenerative AC Electronic Load +
Regenerative DC Bidirectional Source and Sink

Mixed Mode

Independent channel control.
Full simultaneous functionality.

A unique key feature of the SiC-RSe is the ability to use all functionalities simultaneously and independently.



DC Power	AC Power
30 kW	30 kW
22,5 kW	22,5 kW

AC Current (3 channel / 1 channel)
44 A / 132 A

DC Current (3 channel / 1 channel)
±44 A / ±132 A

NEW PRODUCTS

GE&EL AC/DC SiC-RS

Grid Simulator + Electronic Load

4 Quadrant Regenerative AC Grid Simulator +
4 Quadrant Regenerative AC Electronic Load +
Regenerative DC Bidirectional Source and Sink

EL AC/DC SiC-RS

Electronic Load

4 Quadrant Regenerative AC Electronic Load +
Regenerative DC Bidirectional Source and Sink

GE AC/DC SiC-RS

Grid Simulator

4 Quadrant Regenerative AC Grid Simulator +
Regenerative DC Bidirectional Source and Sink.

AC Power
30 kW

DC Power
30 kW

AC Current
(3 channel / 1 channel)
44 A / 132 A

DC Current
(3 channel / 1 channel)
±44 A / ±132 A

What's new

SiC TECHNOLOGY

High performance and efficiency.

USER FRIENDLY INTERFACE

Designed by engineers for engineers.

LARGER TOUCHSCREEN

7-inch display for easy local operation.

19" RACK FORMAT

With 30 kW in a 7U and 715 mm depth unit, it can be easily mounted into standard 19-inch rack cabinets.

EASY INTEGRATION

Analog & digital IO and the open MODBUS/TCP protocol are provided for seamless integration into automated test lines.

All Terrain GE&EL+ vAC/DC SiC

Grid Simulator + Electronic Load

The All-Terrain AC/DC Regenerative Converter with Silicon Carbide Technology—bringing the entire Cinergia catalog into a single cabinet.

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

HIGHER SWITCHING FREQUENCY

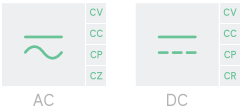
Thanks to the SiC MOSFETs in our equipment, the switching is increased up to 60 kHz.

BANDWIDTH

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

RIPPLE

Improved current ripple (by a factor of 3) and voltage ripple (by a factor of 2.75).



EFFICIENCY

The peak efficency of the whole system is boosted above 94% thanks to the SiC Technology.

CURRENT IN DC MODE

Higher current rating in DC, now equal to the AC current rating.

Grid Simulator + Electronic Load (GE&EL+)

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

Models
GE&EL AC/DC SiC-RS
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 AC/DC SiC-RS
GE+ vAC/DC
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 a power electronic device designed to emulate AC and DC electronic loads.

Models
EL AC/DC SiC-RS
EL+ vAC/DC
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.

Software Optionals
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 (Aerospace)

Regenerative Electronic Load products capable of work in frequency range of 360 to 900Hz. Designed to simulate different loads found in an 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 performance and price for PHiL 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
3.75 kW - 80 kW

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

High Power Up to 1,3 MW

Isolated Transformers

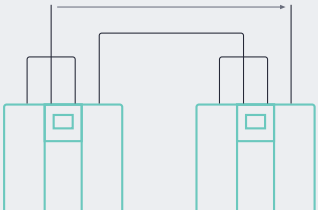
In all DC configurations, it is necessary to use isolation transformers at the input of the device to guarantee the safety of the system.

Three different Master/Slave connection possibilities

Serial

Only in DC

80 to 1500 V (2 x V_{rated})
0 to ± 1 x I_{rated} – 0 to ± 2 x P_{rated}

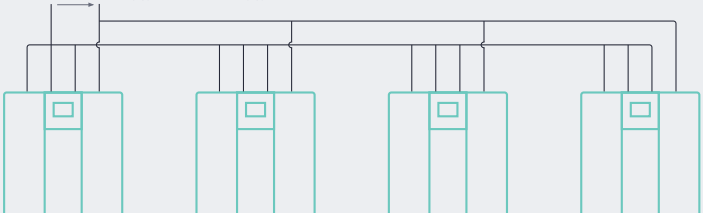


Parallel

Up to 8 units

AC or DC

40 to 750 V (1 x V_{rated})
0 to ± N x I_{rated} – 0 to ± N x P_{rated} (N up to 8)

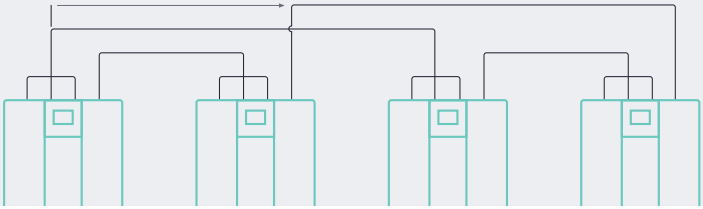


Serial/Parallel

Up to 8 units

Only in DC

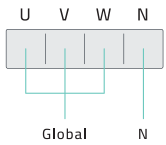
80 to 1500 V (2 x V_{rated})
0 to ± N x I_{rated} – 0 to ± N x P_{rated} (N up to 8)



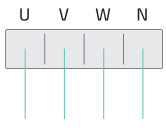
One or three channel connections

AC Mode

one channel

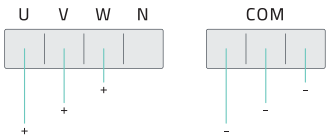


three channel

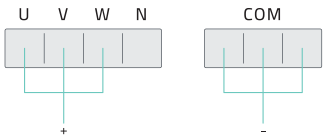


DC Mode

one channel

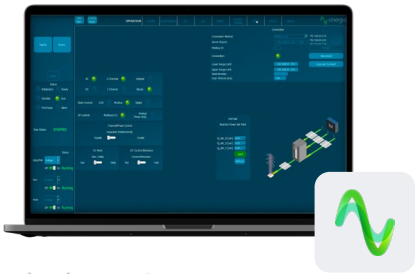


three channel



	Units with AC capabilities		Units with DC capabilities	
Unit	**AC Power**	**AC Current**	**DC Power**	**DC Current**
Applies to all models of GE&EL+, GE+, EL+ and B2C+	7.5 kW	11 A / 33 A	7.5 kW	±10A / ±30A
	10 kW	15 A / 45 A	10 kW	±15A / ±45A
	15 kW	22 A / 66 A	15 kW	±20A / ±60A
	20 kW	29 A / 87 A	20 kW	±25A / ±75A
	27 kW	40 A / 120 A	27 kW	±30A / ±90A
	40 kW	58 A / 174 A	40 kW	±40A / ±120A
	50 kW	73 A / 219 A	50 kW	±50A / ±150A
	54 kW	80 A / 240 A	54 kW	±57A / ±171A
	80 kW	116 A / -	80 kW	±105A / ±315A
	100 kW	145 A / -	100 kW	±130A / ±390A
	108 kW	157 A / -	108 kW	±130A / ±390A
	145 kW	211 A / -	145 kW	±155A / ±465A
	160 kW	232 A / -	160 kW	±185A / ±555A

Software Platform



CINEINA is the software user interface supplied with CINERGIA devices, fully developed by our R&D team to easily control the unit. Its intuitive and user-friendly design allows for the exploration of the device's multiple functionalities remotely and simultaneously from different devices.

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

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

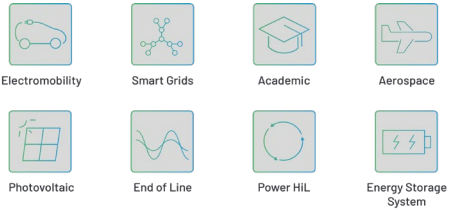
Optional analogue port
~ 6 analogue input 0-10V
~ 6 analogue output 0-10V

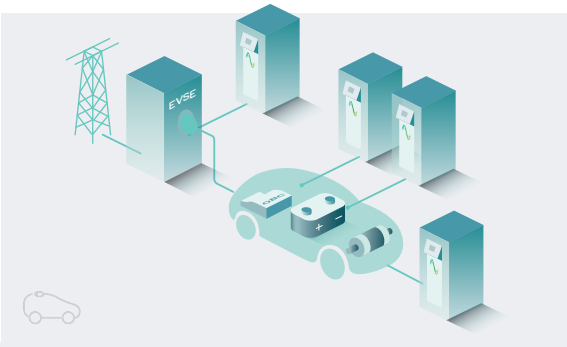
Features and capabilities

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

Applications

We offer a comprehensive range of AC and DC regenerative power converters for testing and R&D applications. CINERGIA's products are continuously enhanced through the insights gained from applying our technology across diverse fields and through close collaboration with our customers.





Electromobility

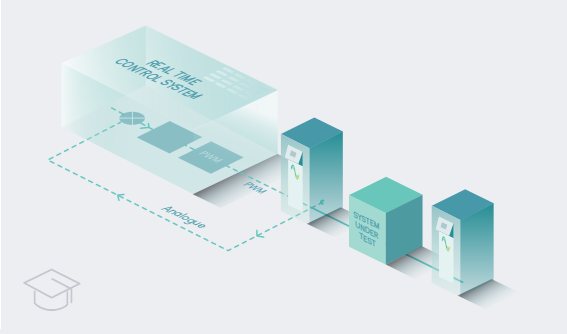
Products for this application

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

Smart Grids

Products for this application

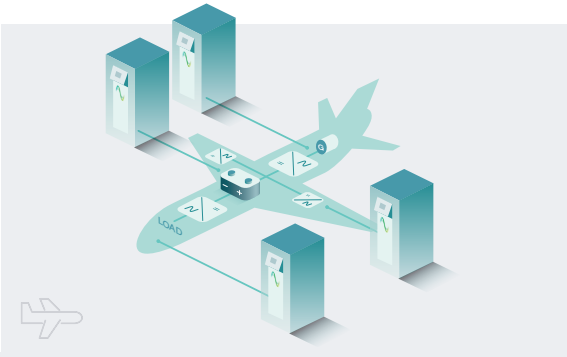
- GE&EL+ vAC/DC
- GE&EL+ vAC
- GE+ vAC/DC
- EL+ vAC/DC
- GE+ vAC
- EL+ vAC
- B2C+
  - Battery Emulation
  - Battery Pack Tester



Academic & RCP

Products for this application

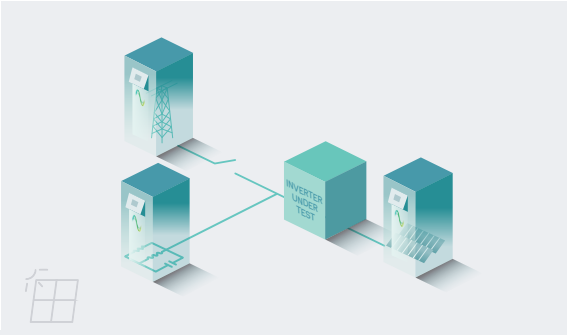
- GE&EL+ vAC/DC
- GE&EL+ vAC
- GE+ vAC/DC
- GE+ vHiL
- EL+ vAC/DC
- EL+ vHiL
- B2C+



Aerospace

Products for this application

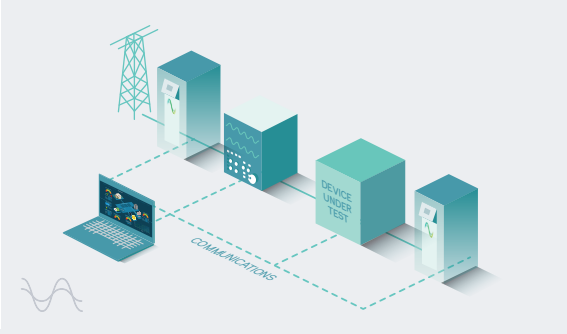
- GE&EL+ vAC/DC
- GE&EL+ vAC
- GE+ vAC/DC
- GE+ vHiL
- EL+ vAC/DC
- EL+ vHiL
- B2C+



Photovoltaic

Products for this application

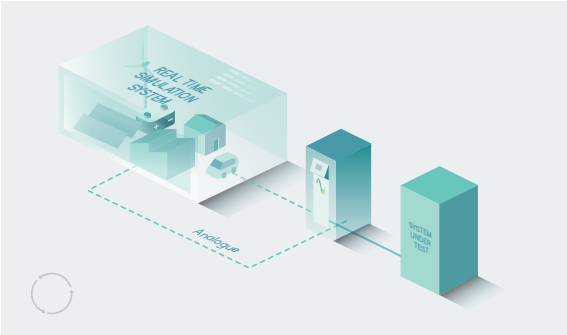
- GE&EL+ vAC/DC
- GE&EL+ vAC
- GE+ vAC/DC
- GE+vAC
- EL+ vAC/DC
- B2C+
  - PV Panel Emulation



Industrial Test

Products for this application

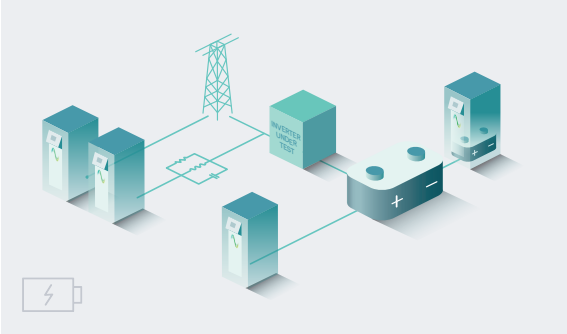
- GE&EL+ vAC/DC
- GE&EL+ vAC
- GE+ vAC/DC
- GE+vAC
- EL+ vAC/DC
- B2C+
  - PV Panel Emulation



Power HiL

Products for this application

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



Energy Storage System

Products for this application

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

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

Regenerative Power Electronics Solutions

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