

GE-AC&DC

AC&DC Voltage Source

GE-AC&DC is the combination of two products in a single cabinet: a GE-AC and a DCPS. The equipment can be used alternatively in AC or in DC providing the highest flexibility at a very competitive price. Thanks to its bidirectional power hardware, the test energy can be regenerated to the electrical grid.

FUNCTIONAL DESCRIPTION

Two main modes:

- AC mode: the three output channels work as AC Voltage Sources as a GE-AC
- DC mode: the three output channels work as DC Voltage Sources (CV) or DC Current Sources (CC, CP) as a DCPS

Three output channels:

- Independent control
- Parallel control

AC mode:

- Generation of AC 3-phase or 1-phase voltages
- Configurable frequency from 10 to 400Hz
- Configurable phase angle and internal resistance
- Generation of disturbances

See GE-AC datasheet for further information

DC mode:

- Operation modes: CV, CC and CP
- Automatic test from Excel file
- Unipolar 2Q or Bipolar 4Q applications

See DCPS datasheet for further information



KEY FEATURES

7.5 –200kVA / 6.75-160kW

4 Quadrant Power Supply

Regenerative up to 100% rated power

AC Output:

25 to 277 Vrms, phase-neutral
43 to 480 Vrms, phase-phase
up to 230Arms per phase
10-400Hz

DC Output:

1 channel Output:

20 to 750V, 0 to $\pm 555A$

3 channels Output:

20 to 750V, 0 to $\pm 185A/ch$

Bipolar Output

-350 to +350V, 0 to $\pm 185A$

+270V/0/-270V Output

for Avionics applications

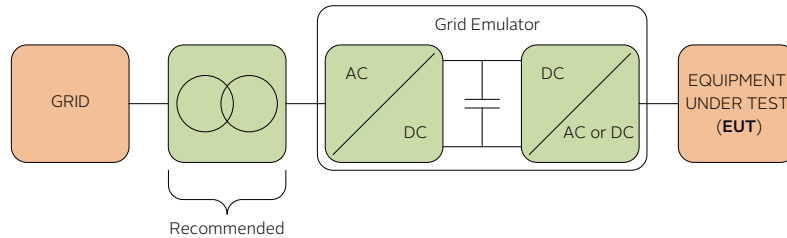
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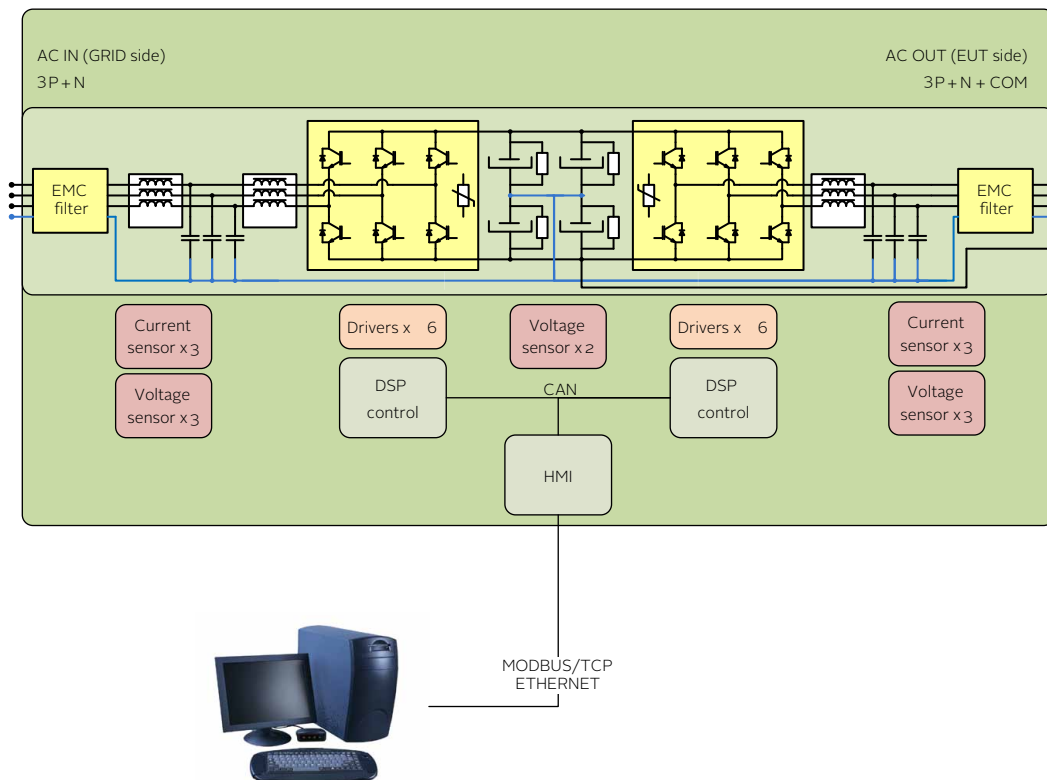
CONCEPTUAL SCHEMATIC



BACK-TO-BACK TOPOLOGY

The equipment is formed by two IGBT-based power stages: a grid-side Active Rectifier producing sinusoidal currents with low harmonic distortion and close to unity power factor; and depending on the main mode, an output converter that can be configured either as an AC inverter or as a DCDC converter.

TECHNICAL DIAGRAM



AC Input is connected to the grid (isolation transformer with neutral is recommended)
 AC Output is connected to the Equipment Under Test (EUT) and can be used as AC or DC output. The loads or EUT are connected between a phase and:
 - AC mode: the output neutral
 - DC mode: the common (COM) negative point for 2Q applications or to phase for 4Q applications
 The AC or DC mode is selected by manual switch.

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USER INTERFACE

Local 3.2" Touchscreen panel

Remote Control port:

LAN Ethernet with Modbus/TCP protocol.

Digital IO port:

- 4 digital inputs
- 3 relay outputs
- 1 Emergency stop

Optional analog port:

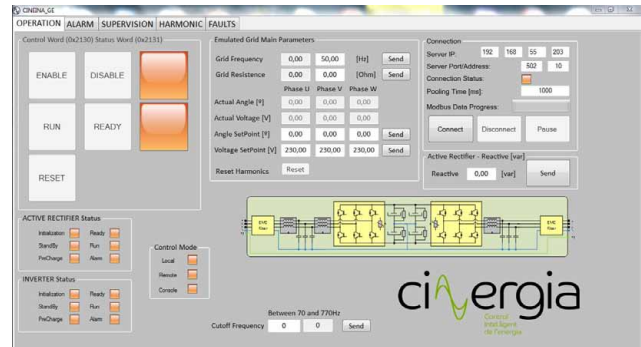
- 1 analog input 0-10V
- 3 analog outputs 0-10V

Optional communications:

RS485, RS232, CAN, LabView

SOFTWARE FEATURES

Windows 7/10 user interface for remote operation and data acquisition.



Cooling

The power supply is air-cooled internally.

Mechanical housing

The power supplies are housed in compact cabinets with wheels up to 120kVA for easier transportation.

Options

- Galvanic Isolation
- Isolation monitor
- Battery Charge mode (BC)
- IAnalog Input/Output Port
- RS485, RS232, CAN
- Labview drivers

	AC mode	DC mode
Constant Voltage	✓	✓
Harmonics	✓	
Disturbances	✓	
Constant Current		✓
Constant Power		✓
Constant Resistance		✓

RANGE AND SPECIFICATIONS

Detailed data can be found in datasheets of GE-AC and DCPS

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GE-AC&DC MODELS

REFERENCE	RATED		RATED CURRENT				WEIGHT kg	DIMENSIONS DxWxH (mm)
	kVA	kW	Independent Mode Arms/ch	Adc/ch	Parallel mode Arms	Adc		
GE7.5-AC&DC	7.5	6.75	10A	±10A	30A	±30A	150	770x450x1100
GE10-AC&DC	10	9	15A	±15A	45A	±45A	150	
GE15-AC&DC	15	13.5	20A	±20A	60A	±60A	150	
GE20-AC&DC	20	18	25A	±25A	75A	±75A	150	
GE30-AC&DC	30	27	40A	±30A	120A	±90A	150	
GE40-AC&DC	40	36	50A	±38A	150A	±115A	185	
GE50-AC&DC	50	45	65A	±47A	195A	±140A	185	
GE60-AC&DC	60	54	80A	±57A	240A	±180A	185	880x590x1320
GE80-AC&DC	80	72	105A	±105A	315A	±315A	265	
GE100-AC&DC	100	90	130A	±130A	390A	±390A	290	
GE120-AC&DC	120	108	155A	±130A	465A	±390A	290	850x900x2000
GE160-AC&DC	160	128	185A	±155A	555A	±465A	540	
GE200-AC&DC	200	160	230A	±185A	690A	±555A	550	

All specifications are subject to change without notice.

GALVANIC ISOLATION (recommended)

REFERENCE	RECOMMENDED CIRCUIT BREAKER	WEIGHT kg	DIMENSIONS DxWxH (mm)
IT7.5	Type C - 25A	145	Inside the cabinet
IT10	Type C - 25A	145	
IT15	Type C - 32A	145	
IT20	Type C - 40A	145	595x415x708 (*)
IT30	Type D - 80A	174	
IT40	Type D - 100A	217	
IT50	Type D - 125A	280	789x490x865 (*)
IT60	Type D - 160A	381	
IT80	Type D - 200A	435	
IT100	Type D - 250A	458	964x684x1252 (*)
IT120	Type D - 315A	514	
IT160	Type D - 400A	612	
IT200	Type D - 500A	753	1192x744x1430 (*)

(*) The transformer is delivered in a stand-alone cabinet IP23

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