

# GEN2.4KW SERIES

Laboratory Power Supplies: 2.4KW



## Features

- High Power Density 2.4KW in 1U Rack
- 1 phase 240vac input, 3 phase input 208VAC option
- Power Factor Correction
- Output voltage up to 600V, current up to 300A
- Built-in RS232 / RS-485 Interface Standard
- Last Setting Memory: Front Panel Lockout
- Parallel Master / Slave Parallel operation, with up to four units. Total current is measured by master.
- Reliable Encoders for Voltage & Current adjustment
- Optional Interfaces :
  - Isolated Analog Programming & Monitoring
  - IEEE Multi-Drop –SCPI, USB interface
  - Labview & LabWindows drivers

## Specifications:

<b>Input Voltage</b> ( 1 phase ) ( 3 phase )	230VAC ( 170 ~ 265 ) Code: 1P200 208VAC ( 170 ~ 265 ) Code: 3P208
<b>No of Phases</b>	1phase or 3phase Wye or Delta, 4 wire with protective earth.
<b>Input Frequency</b>	47 ~ 63Hz
<b>Input Current</b>	1phase 230VAC models: 17A 3phase 208VAC models: 9.8A
<b>Efficiency</b>	Model dependent , typically 88%
<b>Power Factor</b>	0.99 1phase 0.94 3phase
<b>Hold-up Time</b>	Typically 10ms
<b>Input Protection</b>	Line Fuse
<b>Phase Imbalance</b>	<5% on three phase input
<b>Parallel Operation</b>	Up to four units may be connected in Master / Slave with "Single Wire" connection, refer to manual for further details.
<b>Series Operation</b>	YES, with external diodes
<b>Operating Temp.</b>	0°C to +50°C at full load
<b>Operating Humidity</b>	20 ~ 80% RH Non-condensing
<b>Vibration &amp; Shock</b>	MIL-810F method 514.5 Less than 20G, ½ sine, 11mSec.
<b>Altitude</b>	Operating: Up to 3000m
<b>Audible Noise</b>	65dBA at full load, measured 1m from front panel
<b>ESD</b>	EN61000-4-2
<b>Fast Transients</b>	EN61000-4-4
<b>Surge Immunity</b>	EN61000-4-5
<b>Conducted Immunity</b>	EN61000-4-6
<b>Radiated Immunity</b>	EN61000-4-3

<b>Conducted Emission</b>	EN55011 Lev A
<b>Radiated Emission</b>	EN55011 Lev A
<b>Line Regulation</b>	Model dependent refer to manual
<b>Load Regulation</b>	Model dependent refer to manual
<b>Safety</b>	UL/CUL60960-1, EN60950-1, Units with IEMD or ISOL option are recognized up to 400V output, CE marked 208 & 400V models
<b>Cooling</b>	Fan driven, airflow front to rear, supplemental vents on side. Suitable for zero stacking top or bottom.
<b>Input Connectors</b>	Phoenix P/N: FRONT-4-H-7.62 series, wire clamp with strain relief
<b>Output Connectors</b>	Up to & including 100V: Bus-bars 150-600V Phoenix clamp connector
<b>Overload Protection</b>	Constant Current with auto recovery
<b>Foldback Protection</b>	Output shutdown, manual reset by front panel OUT button, response time <1sec
<b>Overvoltage Protection</b>	Inverter shut-down, manual reset by ON/OFF recycle or by OUT button. OVP programming accuracy 5% full scale.
<b>Over Temperature Protection</b>	If internal temperature exceeds safe levels. Latched in Safe Mode, Unlatched in Auto Mode.
<b>Phase Loss</b>	Phase loss protection
<b>Remote Analog Controls &amp; Signals</b>	Refer to manual
<b>Digital Programming &amp; Readback</b>	Refer to manual
<b>Dimensions</b>	1U x 19in Rack mounting, slides or rear support required. 482 x 486 x 43.6mm ( without connectors ) 482 x 575 x 43.6mm with rear connector
<b>Weight</b>	10kg

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Model	Output		Power W
	V	A	
<b>GEN8-300</b>	0 – 8V	0 – 300A	2400W
<b>GEN10-240</b>	0 – 10V	0 – 240A	2400W
<b>GEN16-150</b>	0 – 16V	0 – 150A	2400W
<b>GEN20-120</b>	0 – 20V	0 – 120A	2400W
<b>GEN30-80</b>	0 – 30V	0 – 80A	2400W
<b>GEN40-60</b>	0 – 40V	0 – 60A	2400W

Model	Output		Power W
	V	A	
<b>GEN60-40</b>	0 – 60V	0 – 40A	2400W
<b>GEN80-30</b>	0 – 80V	0 – 30A	2400W
<b>GEN100-24</b>	0 – 100V	0 – 24A	2400W
<b>GEN150-16</b>	0 – 150V	0 – 16A	2400W
<b>GEN300-8</b>	0 – 300V	0 – 8A	2400W
<b>GEN600-4</b>	0 – 600V	0 – 4A	2400W

**Accessories:** RS-232/RS-485 cable is used to connect the power supply to host PC

Mode	RS-485	RS-232	RS-232
PC Connector Communication Cable Power Supply Connector	DB-9F Shield Ground L=2m EIA/TIA-568A (RJ-45 )	DB-9F Shield Ground L=2m EIA/TIA-568A (RJ-45 )	DB-25F Shield Ground L=2m EIA/TIA-568A (RJ-45 )
P/N:	GEN485-9	GEN232-9	GEN232-25

## Input AC voltage Codes / Options

1phase 230VAC - **1P200**  
3phase 208VAC ) - **3P208**

## Programming Codes / Options

RS232 / RS-485 Interface built-in ( Standard )  
GPIB ( Multi-Drop Master Interface ) – **IEEE**  
Voltage Programming Isolated Analag Interface – **IS510**  
Current Programming Isolated Analog Interface - **IS420**

## Front Panel Controls

Vout / Iout manual adjust by separate encoders, Fine and Coarse selectable.  
OVP/ UVL manual adjust by Voltage Adjust encoder, Front Panel Lock / Unlock  
Address selection by Voltage Adjust encoder. No of addresses:31  
AC ON / OFF, Output ON \*/ OFF, Restart Modes ( Auto/Safe), Foldback Control (CV to CC), Go to Local  
RS232/485 and IEEE488.2 selection by IEEE enable switch and DIP switch  
Baudrate selection by Current adjust encoder.  
Parallel Master Slave: Hx, where x = Slaves 0 up to four.

## Front Panel Display

Vout: 4 Digits, Accuracy: 0.5% +/- 1 Count  
Iout: 4 Digits, Accuracy: 0.5% +/- 1 Count  
Voltmeter is user selectable to read either local voltage (at power supply) or remote voltage (at the load).  
ADDR., OVP/UVL , V/A , FOLD, REM ./LOCAL, OUT ON/OFF, LFP/UFP, CC/CV : GREEN LED's. ALRM  
(OVP,OTP,FOLD,AC FAIL): RED LED

## Remote Analog & Controls

Vout voltage programming 0-1 00%, 0-5V or 0-1 0V, user selectable. Accuracy & Linearity +/-1% of Rated Vo.  
Iout voltage programming 0-1 00%, 0-5V or 0-1 0V, user selectable. Accuracy & Linearity +/-1% of Rated Io.  
Vout resistor programming 0-100%, 0-5/10kohm full scale, user selectable. Accuracy & Linearity +/-1% of Rated Vo.  
Iout resistor programming 0-100%, 0-5/10kohm full scale, user selectable. Accuracy & Linearity +/-1% of Rated Io.  
On/Off control (rear panel) By Voltage: 0.6V = Disable, 2-1 5V = enable (default) or dry contact, user selectable logic  
Output current monitor 0-5V or 0-1 0V , accuracy:1 % , user selectable  
Output voltage monitor 0-5V or 0-1 0V , accuracy:1 % , user selectable  
Power supply OK signal Yes. TTL high-OK, 0V (500ohm impedance)-Fail  
CV/CC signal CV: TTL high (4-5V) source: 10mA, CC: TTL low (0-04V):10mA  
Enable/Disable Dry contact. Open: Off , Short: On. Max. voltage at Enable/Disable Contacts 6V  
Remote/Local selection Selects Remote or Local operation by Voltage: 0-0.6V/2-1 5V, <0.6V = Local 2-1 5V = Remote  
Remote/Local signal Signals operating mode in use.

## GEN2.4KW Front Panel Description



1. ON/OFF Switch
2. Air Intake allows zero stacking for maximum system flexibility and power density.
3. Reliable encoder controls Output Voltage, Address, OVP and UVL settings.
4. Volt Display shows Output Voltage and directly displays OVP, UVL and Address settings.
5. Reliable encoder controls Output Current, sets baudrate and Advanced Parallel mode.
6. Current Display shows Output Current and displays Baud rate. Displays total current in Parallel Master/Slave Mode
7. Function/Status LEDs:
  - Alarm
  - Foldback Mode
  - Fine Control
  - Remote Mode
  - Preview Settings
  - Output On
8. Pushbuttons allow flexible user configuration
  - Coarse and Fine adjustment of Output Voltage/Current and Advanced Parallel Master or Slave select.
  - Preview settings and set Voltage/Current with Output OFF, Front Panel Lock
  - Parallel Master/Slave
  - Set OVP and UVL Limits
  - Set Current Foldback Protection
  - Go to Local Mode and select Address and Baud rate
  - Output ON/OFF and Auto-Re-Start/Safe-Start Mode

## Rear Panel Description



1. Remote/Local Output Voltage Sense Connections.
2. DIP Switches select 0-5V or 0-10V Programming and other functions.
3. DB25 (Female) connector allows (Non-isolated) Analog Program and Monitor and other functions.
4. RS-485 OUT to other Genesys™ Power Supplies.
5. RS-232/RS-485 IN Remote Serial Programming.
6. Output Connections: Rugged busbars (shown) for up to 100V Output; wire clamp connector for Outputs >100V.
7. Exit air assures reliable operation when zero stacked.
8. Input: 230VAC Single Phase (shown), 208 VAC Three Phase, 50/60 Hz  
AC Input Connector: Phoenix P/N: FRONT-4-H-7.62.
9. Optional Interface Position for IEEE 488.2 SCPI (shown) or Isolated Analog Interface or LAN Interface.
10. Auxiliary Output Voltage.

## GEN2.4KW Power Parallel and Series Configurations

### Parallel operation - Master/Slave:

Active current sharing allows up to four identical units to be connected in an auto-parallel configuration for four times the output power.

**In Advanced Parallel Master/Slave Mode, total current is programmed and reported by the Master, Up to four supplies act as one.**

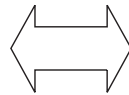


### Series operation

Up to two units may be connected in series to increase the output voltage or to provide bipolar output. (Max 600V to Chassis Ground).

## Remote Programming via RS-232 & RS-485 Interface

Standard Serial Interface allows daisy-chain control of up to 31 power supplies on the same communication bus with built-in RS-232 & RS-485 Interface.



## Programming Options (Factory installed)

### Digital Programming via IEEE Interface

P/N: IEEE

- IEEE 488.2 SCPI Compliant
- Program Voltage
- Measure Voltage
- Over Voltage setting and shutdown
- Error and Status Messages
- **New! Multi-Drop**
  - Allows IEEE Master to control up to 31 slaves over RS-485 daisy-chain
  - Only the Master needs be equipped with IEEE Interface
- Program Current
- Measure Current
- Current Foldback shutdown

### Isolated Analog Programming

Four Channels to Program and Monitor Voltage and Current. Isolation allows operation with floating references in harsh electrical environments. Choose between programming with Voltage or Current. Connection via removable terminal block: Phoenix MC1,5/8-ST-3.81.

- Voltage Programming, user-selectable 0-5V or 0-10V signal. Power supply Voltage and Current Programming Accuracy  $\pm 1\%$   
Power supply Voltage and Current Monitoring Accuracy  $\pm 1.5\%$
- Current Programming with 4-20mA signal. Power supply Voltage and Current Programming Accuracy  $\pm 1\%$   
Power supply Voltage and Current Monitoring Accuracy  $\pm 1.5\%$

P/N: IS510

P/N: IS420

### LAN Interface

### LXI Compliant to Class C

P/N: LAN

- Meets all LXI-C Requirements
- Address Viewable on Front Panel
- Fixed and Dynamic Addressing
- Compatible with most standard Networks
- VISA & SCPI Compatible
- LAN Fault Indicators
- Auto-detects LAN Cross-over Cable
- Fast Startup