Genesys

Programmable DC Power Supplies 5kW in 2U Built in RS-232 & RS-485 Interface Advanced Parallel Standard

> **Optional Interfaces:** IEEE488.2 SCPI (GPIB) **Isolated Analog Programming LXI** Compliant LAN



Genesys™ Family

GEN H 750W Half Rack

GEN 1U 750/1500W Full Rack

GEN 2U 3.3/5kW

GEN 3U 10/15kW

TDK·Lambda

www.us.tdk-lambda.com/hp

The GenesysTM family of programmable power supplies sets a new standard for flexible, reliable, AC/DC power systems in OEM, Industrial and Laboratory applications.

Features include:

- High Power Density 5kW in 2U
- Wide Range of popular worldwide AC inputs, 3Ø (208VAC, 400VAC)
- **Active Power Factor Correction (Three-Phase AC Input)**
- Output Voltage up to 600V, Current up to 600A
- Built-in RS-232/RS-485 Interface Standard
- Global Commands for Serial RS-232/RS-485 Interface
- Auto-Re-Start / Safe-Start: user selectable
- **Last-Setting Memory**
- High Resolution 16 bit ADCs & DACs
- Low Ripple & Noise
- Front Panel Lock selectable from Front Panel or Software
- Reliable Encoders for Voltage and Current Adjustment
- Constant Voltage/Constant Current auto-crossover
- Parallel Operation with Active Current Sharing; up to four identical units.
- Advanced Parallel Master / Slave. Total Current is Programmed and Measured via the Master.
- Independent Remote ON/OFF and Remote Enable/Disable
- External Analog Programming and Monitoring (user selectable 0-5V & 0-10V)
- Reliable Modular and SMT Design
- 19" Rack Mount capability for ATE and OEM applications
- Optional Interfaces

Isolated Analog Programming and Monitoring Interface (0-5V/0-10V & 4-20mA)

IEEE 488.2 SCPI (GPIB) Multi-Drop

LXI Compliant LAN

USB Interface

- LabView and LabWindow™ drivers
- Five Year Warranty

Worldwide Safety Agency Approvals; CE Mark for LVD and EMC Regulation





Applications

GenesysTM power supplies have been designed to meet the demands of a wide variety of applications. System Designers will appreciate new, standard, remote programming features such as Global commands. Also, new high-speed status monitoring is available for the RS-485 bus.

Test Systems using the IEEE-488 bus may achieve significant cost savings by incorporating the Optional IEEE Multi-Drop Interface for a Master and up to 30 RS-485 Multi-Drop Slaves. Then up to 30 Slaves may be equipped with the less expensive Optional RS-485 Multi-Drop (MD) interface.

Higher power systems can be configured with up to four 5kW modules. Each module is 2U with zero space between them (zero stack).

Flexible configuration is provided by the complete GenesysTM Family: 1U 750W Half-Rack, 1U 750W/1500W 2U 3.3kW/5kW Full-Rack. All are identical in Front Panel, Rear Panel Analog, and all Digital Interface Commands.

OEM Designers have a wide variety of Inputs and Outputs from which to select depending on application and location.

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 Baud rate 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
- Fine Control
- Preview Settings

- Foldback Mode
- Remote Mode
- Output On
- 8. Pushbuttons allow flexible user configuration
 - Coarse and Fine adjustment of Output Voltage/Current and Advanced Parallel Master or Slave
 - 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/Safe Re-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: 208 & 400VAC Three Phase, 50/60 Hz
 - AC Input Connector: PHOENIX CONTACT Power Combicon PC 6/... Series with strain relief.
- 9. Optional Interface Position for IEEE 488.2 SCPI (shown) or Isolated Analog, LAN or USB Interface.

Genesys[™] 5kW Specifications

2.Rated Output Current(*2) 3.Rated Output Power W 4800 5000 4960 5000 5100 5 1.CONSTANT VOLTAGE MODE 1.Max.line regulation (0.01% of rated Vo)(*6) 2.Max load regulation (0.015% of rated Vo+5mV)(*7) MV 6.2 6.5 7.4 8 9.5 3.Ripple and noise p-p 20MHz (*8) MV 75 75 75 75 75 4.Ripple r.m.s 5Hz-1MHz MV 10 10 10 10 10 10 5.Remote sense compensation/wire V 2 2 2 2 2 2 2 6.Temperature coefficient PPM/°C 100PPM/°C of rated vout over 8hrs interval following 30 minutes warr 0.05% of rated vout over 8hrs interval following 30 minutes warr 0.05% of rated vout over 8hrs interval following 30 minutes warr 0.05% of rated vout over 8hrs interval following 30 minutes warr 0.05% of rated vout over 8hrs interval following 30 minutes warr 0.05% of rated vout over 8hrs interval following 30 minutes warr 0.05% of rated vout over 8hrs interval following 30 minutes warr 0.05% of rated vout over 8hrs interval following 30 minutes warr 0.05% of rated vout voutage, following 30 minutes warr 0.05% of rated vout voutage, following 30 minutes warr 0.05% of rated vout voutage following 30 minutes warr 0.05% of rated vout voutage, following 30 minutes warr 0.05% of rated vout voutage, following 30 minutes warr 0.05% of rated vout voutage, following 30 minutes warr 0.05% of rated vout voutage, following 30 minutes warr 0.05% of output voltage to recover within 0.5% of its rated output voltage to recover within 0.5% of its rated output voltage to recover within 0.5% of its rated output voltage to recover within 0.5% of its rated output voltage to recover within 0.5% of its rated output voltage to recover within 0.5% of its rated output voltage to recover within 0.5% of its rated output voltage to recover within 0.5% of its rated output voltage to recover within 0.5% of its rated output voltage to recover within 0.5% of its rated output voltage to recover within 0.5% of its rated output voltage to recover within 0.5% of its rated output voltage to recover within 0.5% of its rated output voltage, to voltage, to voltage, to voltage, to	arm-up. Constant so following power following power following power following power following fo	1200 ange 10-90% 2 2msec for 32.5 65 120 t line, load & owing powers following powers following powers with the communication of the co	50 1 1500 6 of rated or models abo 25 50 100 temperature on one of the control of	17 34 90	8.5 17 30	4.25 8.5 15
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1.3 PROTECTIVE FUNCTIONS 1. OCP 1. OCP Output shut down when power supply change from CV to CC Output shut down when power supply change from CV to CC Inverter shut-down, manual rest by AC input recycle or by O O. 5.—10V 0.5—12V 1.—19V 1.—24V 2.—36V 2.—4 Output shut down when power supply change from CV to CC Inverter shut-down, manual rest by AC input recycle or by O O. 5.—10V 0.5—12V 1.—19V 1.—24V 2.—36V 2.—4 Output O	User selectable. UT button or by c 44.1V 5-66.15V djusting Vout belo ±0.5% of rated Vo ±1% of rated lout. earity: ±1% of rate earity:±1.5% of rate	communicativ 5~88.2V ow limit.	ion port con		5~330.7V	5~66
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0-105% Constant Current	UT button or by c 44.1V 5~66.15V djusting Vout belove. ±0.5% of rated Vountlearity: ±1% of rated lout. tearity: ±1% of rated earity:±1.5% of rated lout.	communicati V 5~88.2V cow limit. cout. t. t. atted Vout.			5~330.7V	5~661
2. OCP Foldback 3. OVP type Inverter shut-down, manual reset by AC input recycle or by O 4. OVP trip point 5. Over Temperature Protection 4. OVP trip point 5. Over Temperature Protection 5. Over Temperature Protection 6. Output Under Voltage Limit Preset by front panel or communication port. Prevents from an I.4 ANALOG PROGRAMMING AND MONITORING 1. Vout Voltage Programming 1. Voltage Programming 1. Vout Voltage Programming 1. Voltage Voltage Voltage Voltage Voltage Programming 1. Voltage Programming 1. Voltage Voltage Voltage Voltage Voltage Voltage Programming 1. Voltage Programming 1. Voltage Programming 1. Voltage Voltage Voltage Voltage Or ourrent) adjust encoder. 1. Voltage Programming 1. Voltage Volt	UT button or by c 44.1V 5~66.15V djusting Vout belove. ±0.5% of rated Vountlearity: ±1% of rated lout. tearity: ±1% of rated earity:±1.5% of rated lout.	communicati V 5~88.2V cow limit. cout. t. t. atted Vout.			5~330.7V	5~661
Inverter shut-down, manual reset by AC input recycle or by O 3. OVP trip point 0.5-12V 1-19V 1-24V 2-36V 2-46 3. OVP trip point 0.5-12V 0.5-12V 1-19V 1-24V 2-36V 2-46 4. OVE Temperature Protection User selectable, latched or non-latched. 5. Output Under Voltage Limit Preset by front panel or communication port. Prevents from an open college of the programming 0-100%, 0-5V or 0-10V, user select. Accuracy and linearity: 6. Output Voltage Programming 0-100%, 0-5V or 0-10V, user select. Accuracy and linearity: 8. Out Voltage Programming 0-100%, 0-5V or 0-10V, user select. Accuracy and linearity: 9. Output Resistor Programming 0-100%, 0-5V or 0-10V, user select. Accuracy and linearity: 9. Output Resistor Programming 0-100%, 0-5/10Kohm full scale, user select. Accuracy and linearity: 9. Output Current monitor (*13) 0-100%, 0-5/10Kohm full scale, user select. Accuracy and linearity: 9. Output Current monitor (*13) 0-5V or 0-10V, Accuracy:±1%, user selectable. 9. Output Voltage monitor 0-5V or 0-10V, Accuracy:±1%, user selectable. 9. Over Supply OK signal TTL high (4-5V) -0K, 0V-Fail 500ohm series resistance. 9. Over Collector 0-5V or 0-10V, Accuracy:±1%, user selectable. 9. Over Collector 0-5V or 0-10V, Accuracy:±1%, user selectable. 9. Over Collector 0-5V or 0-10V, Accuracy:±1%, user selectable. 9. Over Collector 0-5V or 0-10V, Accuracy:±1%, user selectable. 9. Over Collector 0-5V or 0-10V, Accuracy:±1%, user selectable. 9. Over Collector 0-5V or 0-10V, Accuracy:±1%, user selectable. 9. Over Collector 0-5V or 0-10V, Accuracy:±1%, user selectable. 9. Over Collector 0-5V or 0-10V, Accuracy:±1%, user selectable. 9. Over Collector 0-5V or 0-10V, Accuracy:±1%, user selectable. 9. Over Collector 0-5V or 0-10V, Accuracy:±1%, user selectable. 9. Over Collector 0-5V or 0-10V, Accuracy:±1%, user selectable. 9. Over Collector 0-5V or 0-10V, Accuracy:±1%, user selectable. 9. Over Collector 0-5V or 0-10V	UT button or by c 44.1V 5~66.15V djusting Vout belove. ±0.5% of rated Vountlearity: ±1% of rated lout. tearity: ±1% of rated earity:±1.5% of rated lout.	communicati V 5~88.2V cow limit. cout. t. t. atted Vout.			5~330.7V	5~66
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5. Over Temperature Protection 6. Output Under Voltage Limit 7. Preset by front panel or communication port. Prevents from an interest programming 1. Voltage Programming 1. O~100%, 0~5V or 0~10V, user select. Accuracy and linearity: 3. Vout Voltage Programming (*13) 1. O~100%, 0~5V or 0~10V, user select. Accuracy and linearity: 3. Vout Resistor Programming (*13) 1. O~100%, 0~5V or 0~10V, user select. Accuracy and linearity: 3. Vout Resistor Programming (*13) 1. O~100%, 0~5V or 0~10V, user select. Accuracy and linearity: 3. Vout Resistor Programming (*13) 1. O~100%, 0~5V or 0~10V, user select. Accuracy and linearity: 4. Iout Resistor Programming (*13) 1. O~100%, 0~5V or 0~10V, user select. Accuracy and linearity: 5. On/Off control (rear panel) 1. O~100%, 0~5V or 0~10V, accuracy:±1%, user select. Accuracy and linearity: 5. On/Off control (rear panel) 1. O~5V or 0~10V, accuracy:±1%, user select. Accuracy and linearity: 6. Output Current monitor (*13) 1. O~5V or 0~10V, accuracy:±1%, user selectable. 7. Output Voltage monitor 1. O~5V or 0~10V, accuracy:±1%, user selectable. 7. Output Voltage monitor 1. O~5V or 0~10V, Accuracy:±1%, user selectable. 7.	djusting Vout belou ±0.5% of rated Vo ±1% of rated lout. earity: ±1% of rate earity:±1.5% of rate	ow limit.				
6. Output Under Voltage Limit 1.4 ANALOG PROGRAMMING AND MONITORING 1.1 Vout Voltage Programming 1.2 Lout Voltage Programming 1.2 Lout Voltage Programming 1.3 Vout Resistor Programming 1.4 Lout Voltage Programming 1.5 Vout Resistor Programming 1.5 Vout Resistor Programming 1.6 Lout Resistor Programming 1.7 Lout Voltage Programming 1.6 Lout Resistor Programming 1.7 Loutput Resistor Programming 2. Lout Voltage: 0 - 0.5 V or 0 - 10V, user select. Accuracy and linearity: 3. Vout Resistor Programming 3. Vout Resistor Programming 4. Lout Resistor Programming 4. Lout Resistor Programming 5. On/Off control (rear panel) 5. On/Off control (rear panel) 6. Output Current monitor (*13) 6. Output Voltage: 0 - 0.6 V/2 - 15V, or dry contact, user select Accuracy and linearity: 6. Output Voltage monitor 6. Output Voltage monitor 7. Output Voltage monitor 8. Power Supply OK signal 7. Thigh (4-5V) - OK, 0V-Fail 500ohm series resistance. 9. CV/CC Indicator 9. CV/C Indicator 9. CV/CC Ind	±0.5% of rated Vo ±1% of rated lout. learity: ±1% of rat earity:±1.5% of ra	out. t. ated Vout.				
1.4 ANALOG PROGRAMMING AND MONITORING 1. Vout Voltage Programming	±0.5% of rated Vo ±1% of rated lout. learity: ±1% of rat earity:±1.5% of ra	out. t. ated Vout.				
1.Vout Voltage Programming 1.Vout Voltage Programming (*13) 2. Iout Voltage Programming (*13) 3. Vout Resistor Programming (*13) 4. Iout Resistor Programming (*13) 5. On/Off control (rear panel) 6. On/Off control (rear panel) 6. Output Current monitor (*13) 7. Output Voltage monitor 8. Power Supply OK signal 9. CV/CC Indicator 9. CV/CC Indicator 10. Enable/Disable 11. Local/Remote analog control 12. Local/Remote analog control Indicator 13. FRONT PANEL 1. Control functions 14. Output ON/OFF, Re-start modes (auto, safe), Foldback Address selection: 1200,2400,4800,9600 and 19,200. 2. Display 15. Display 16. Output Ovltage: 4 digits , Accuracy: 17. 20,960 and 19,200. 16. Output Voltage: 4 digits , Accuracy: 18. Local output Voltage: 12. Output Voltage: 1. Output V	±1% of rated lout. earity: ±1% of rat earity:±1.5% of ra	t. ated Vout.				
2.lout Voltage Programming (*13) 0~100%, 0~5V or 0~10V, user select. Accuracy and linearity: 0~100%, 0~5/10Kohm full scale, user select. Accuracy and linearity: 0~100%, 0~5/10Kohm full scale, user select. Accuracy and line 5.On/Off control (rear panel) 8. Power Supply OK signal 9. CV/CC Indicator 9. CV/CC Indicator 10. Enable/Disable 11. Local/Remote analog control 12. Local/Remote analog control 13. FRONT PANEL 1. Control functions 10. FRONT PANEL 1. Control functions 0. Cuty Voltage enable (auto, safe), Foldbac Address selection: 1200,2400,4800,9600 and 19,200. 2. Display 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Colloge: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 colloges and linearity: 0. Collog	±1% of rated lout. earity: ±1% of rat earity:±1.5% of ra	t. ated Vout.				
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4.lout Resistor Programming (*13) 0~100%, 0~5/10Kohm full scale, user select. Accuracy and lin 5.On/Off control (rear panel) By electrical. Voltage: 0~0.6V/2~15V,or dry contact, user sele 6.Output Current monitor (*13) 0~5V or 0~10V, Accuracy:±1%, user selectable. 7.Output Voltage monitor 8.Power Supply OK signal TTL high (4~5V) ~OK, 0V-Fail 500ohm series resistance. 9. CV/CC Indicator Open Collector. CC Mode: ON, CV Mode: OFF. Maximum Vol 10. Enable/Disable Dry contact. Open:off, Short: on. Max. voltage at Enable/Disa 11. Local/Remote analog control By electrical signal or Open/Short: 0~0.6V or short: Remote, 12. Local/Remote analog control Indicator Open collector, Local: Off, Remote: On. Maximum voltage: 30 Volt/ Inutions Vout/ Iout manual adjust by separate encoders (coarse and fi OVP/UVL manual adjust by Volt. Adjust encoder. On/Off, Output ON/OFF, Re-start modes (auto, safe), Foldbac Address selection by Voltage (or current) adjust encoder. Nur Re-start modes (automatic restart, safe mode). Baud rate selection: 1200,2400,4800,9600 and 19,200. Voltage: 4 digits, Accuracy: 0.5% of rated output Voltage ±1 c	earity:±1.5% of ra					
5.On/Off control (rear panel) By electrical. Voltage: 0-0.6V/2-15V,or dry contact ,user selec 6.Output Current monitor (*13) 0-5V or 0-10V , Accuracy:±1% , user selectable. 0-5V or 0-10V , Accuracy:±1% , user selectable. 9.CV/CC Indicator 9.CV/CC Indicator Open Collector. CC Mode: ON, CV Mode: OFF. Maximum Vol 10. Enable/Disable 11. Local/Remote analog control 12. Local/Remote analog control indicator Open collector. Cc Mode: ON, CV Mode: OFF. Maximum Vol 12. Local/Remote analog control indicator Open collector. Cc Mode: ON, CV Mode: OFF. Maximum Vol 10. Enable/Disable 11. Control functions Vout/ lout manual adjust by separate encoders (coarse and fi OVP/UVL manual adjust by Volt. Adjust encoder. On/Off, Output ON/OFF, Re-start modes (auto, safe), Foldbac Address selection: 1200,2400,4800,9600 and 19,200. 2.Display Voltage: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 co		atou lout.				
6.Output Current monitor (*13) 0-5V or 0-10V , Accuracy:±1% , user selectable. 7.Output Voltage monitor 0-5V or 0-10V , Accuracy:±1% , user selectable. 7.Output Voltage monitor 9. CV/CC Indicator 9. CV/CC Indicator Open Collector. CC Mode: ON, CV Mode: OFF. Maximum Vol 10. Enable/Disable 11. Local/Remote analog control 12. Local/Remote analog control 12. Local/Remote analog control Indicator Open collector, Local: Off, Remote: On. Max. voltage at Enable/Disa 12. Local/Remote analog control Indicator Open collector, Local: Off, Remote: On. Maximum voltage: 30 1.5 FRONT PANEL 1. Control functions Vout/ lout manual adjust by separate encoders (coarse and fi OVP/UVL manual adjust by Volt. Adjust encoder. On/Off, Output ON/OFF, Re-start modes (auto, safe), Foldbac Address selection by Voltage (or current) adjust encoder. Nur Re-start modes (automatic restart, safe mode). Baud rate selection: 1200,2400,4800,9600 and 19,200. Voltage: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 or	otabio logio.					
7.Output Voltage monitor 8.Power Supply OK signal 9. CV/CC Indicator Open Collector. CC Mode: ON, CV Mode: OFF. Maximum Vol 10. Enable/Disable 11. Local/Remote analog control 12. Local/Remote analog control Indicator Open collector, Local: Off, Remote: On. Maximum voltage: 30 15. FRONT PANEL 1. Control functions Vout/ lout manual adjust by separate encoders (coarse and fi OVP/UVL manual adjust by Volt. Adjust encoder. On/Off, Output ON/OFF, Re-start modes (auto, safe), Foldbac Address selection by Voltage (or current) adjust encoder. Paud Tate selection: 1200,2400,4800,9600 and 19,200. Voltage: 4 digits, Accuracy: 0.5% of rated output Voltage ±1 co.						
8.Power Supply OK signal 7. Dynamics (4-5V) - OK, 0V-Fail 500ohm series resistance. 9. CV/CC Indicator Open Collector. CC Mode: ON, CV Mode: OFF. Maximum Vol 10. Enable/Disable 1. Local/Remote analog control By electrical signal or Open/Short: 0-0.6V or short: Remote, 12. Local/Remote analog control Indicator Open collector, Local: Off, Remote: On. Maximum voltage: 30 1.5 FRONT PANEL 1. Control functions Vout/ lout manual adjust by separate encoders (coarse and final OVP/UVL manual adjust by Volt. Adjust encoder. On/Off, Output ON/OFF, Re-start modes (auto, safe), Foldback Address selection by Voltage (or current) adjust encoder. Nur Re-start modes (automatic restart, safe mode). Baud rate selection: 1200,2400,4800,9600 and 19,200. Voltage: 4 digits, Accuracy: 0.5% of rated output Voltage ±1 co.						
9. CV/CC Indicator Open Collector. CC Mode: ON, CV Mode: OFF. Maximum Vol 10. Enable/Disable Dry contact. Open:off, Short: on. Max. voltage at Enable/Disa 11. Local/Remote analog control By electrical signal or Open/Short: 0-0.6V or short: Remote, 12. Local/Remote analog control Indicator Open collector, Local: Off, Remote: On. Maximum voltage: 30 1.5 FRONT PANEL 1. Control functions Vout/ lout manual adjust by separate encoders (coarse and fi OVP/UVL manual adjust by Volt. Adjust encoder. On/Off, Output ON/OFF, Re-start modes (auto, safe), Foldbac Address selection by Voltage (or current) adjust encoder. Nur Re-start modes (automatic restart, safe mode). Baud rate selection: 1200,2400,4800,9600 and 19,200. Voltage: 4 digits, Accuracy: 0.5% of rated output Voltage ±1 or						
10. Enable/Disable Dry contact. Open:off, Short: on. Max. voltage at Enable/Disa 11. Local/Remote analog control By electrical signal or Open/Short: 0-0.6V or short: Remote, Open collector, Local: Off, Remote: On. Maximum voltage: 30 1.5 FRONT PANEL 1. Control functions Vout/ lout manual adjust by separate encoders (coarse and fi OVP/UVL manual adjust by Volt. Adjust encoder. On/Off, Output ON/OFF, Re-start modes (auto, safe), Foldbac Address selection by Voltage (or current) adjust encoder. Nur Re-start modes (automatic restart, safe mode). Baud rate selection: 1200,2400,4800,9600 and 19,200. 2. Display Voltage: 4 digits, Accuracy: 0.5% of rated output Voltage ±1 or	tage: 30V. Maxim	num sink cur	rrent: 10mA.			
11. Local/Remote analog control 12. Local/Remote analog control indicator 13. Local/Remote analog control indicator 14. Local/Remote analog control indicator 15. FRONT PANEL 16. Control functions 17. Vout/ lout manual adjust by separate encoders (coarse and find OVP/UVL manual adjust by Volt. Adjust encoder. 17. On/Off, Output ON/OFF, Re-start modes (auto, safe), Foldback Address selection by Voltage (or current) adjust encoder. 18. Re-start modes (automatic restart, safe mode). 19. Baud rate selection: 1200,2400,4800,9600 and 19,200. 29. Display 20. Voltage: 4 digits, Accuracy: 0.5% of rated output Voltage ±1 coarses.						
12. Local/Remote analog control Indicator Open collector, Local: Off, Remote: On. Maximum voltage: 30 1.5 FRONT PANEL 1. Control functions Vout/ lout manual adjust by separate encoders (coarse and fi OVP/UVL manual adjust by Volt. Adjust encoder. On/Off, Output ON/OFF, Re-start modes (auto, safe), Foldbar Address selection by Voltage (or current) adjust encoder. Nur Re-start modes (automatic restart, safe mode). Baud rate selection: 1200,2400,4800,9600 and 19,200. 2. Display Voltage: 4 digits, Accuracy: 0.5% of rated output Voltage ±1 or current and output Voltage encoder.		ocal.				
1.5 FRONT PANEL 1. Control functions Vout/ lout manual adjust by separate encoders (coarse and find VP/UVL manual adjust by Volt. Adjust encoder. On/Off, Output ON/OFF, Re-start modes (auto, safe), Foldbac Address selection by Voltage (or current) adjust encoder. Nur Re-start modes (automatic restart, safe mode). Baud rate selection: 1200,2400,4800,9600 and 19,200. 2. Display Voltage: 4 digits, Accuracy: 0.5% of rated output Voltage ±1 or the selection.			mA.			
1.Control functions Vout/ lout manual adjust by separate encoders (coarse and fi OVP/UVL manual adjust by Volt. Adjust encoder. On/Off, Output ON/OFF, Re-start modes (auto, safe), Foldbac Address selection by Voltage (or current) adjust encoder. Nur Re-start modes (automatic restart, safe mode). Baud rate selection: 1200,2400,4800,9600 and 19,200. 2.Display Voltage: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 or	,					
OVP/UVL manual adjust by Volt. Adjust encoder. On/Off, Output ON/OFF, Re-start modes (auto, safe), Foldbac Address selection by Voltage (or current) adjust encoder. Nur Re-start modes (automatic restart, safe mode). Baud rate selection: 1200,2400,4800,9600 and 19,200. 2.Display Voltage: 4 digits, Accuracy: 0.5% of rated output Voltage ±1 of	no adjustment se	oloctable)				
On/Off, Output ON/OFF, Re-start modes (auto, safe), Foldbac Address selection by Voltage (or current) adjust encoder. Nur Re-start modes (automatic restart, safe mode). Baud rate selection: 1200,2400,4800,9600 and 19,200. 2.Display Voltage: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 or	ne aujustinent se	electable).				
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Re-start modes (automatic restart, safe mode). Baud rate selection: 1200,2400,4800,9600 and 19,200. 2.Display Voltage: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 of the control of the cont	,		iocai contioi	•		
Baud rate selection: 1200,2400,4800,9600 and 19,200. 2.Display Voltage: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 of the control	ilber of addresses	33.01.				
2.Display Voltage: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 of						
	count.					
3.Indications Voltage, Current, Alarm, Fine, Preview, Foldback, Local, Outp		nel Lock, CV	/CC.			
1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Interface	_ ,	, 😅 🕶				
•	40 60	80	100	150	300	600
1. Remote Voltage Programming (16 bit)		00	100	130	550	000
	4.8 7.2	9.6	12	18	36	72
	40 60	80	100	150	300	600
			.00	.50		
2. Remote Current Programming (16 bit)						
	15 10.2	7.8	6	4.08	2.04	1.02
Accuracy(0.3%of loRated+0.1% of loActual Output)*13 mA 2400 2000 1240 1000 680 5	500 340	260	200	136	68	34
3. Readback Voltage						
			12	18	36	72
Accuracy (0.15% of Vo Rated) mV 12 15 24 30 45	4.8 7.2	9.6	150	225	450	000
4. Readback Current	4.8 7.2 60 90	9.6 120				900
						900
	60 90	120		4 08	2 04	
	60 90 15 10.2	120 7.8	6	4.08	2.04	1.02
5. OVP/UVL Programming	60 90	120		4.08 136	2.04 68	1.0
Resolution (0.1% of Vo Rated) mV 8 10 16 20 30	60 90 15 10.2 500 340	120 7.8	6			900 1.02 34 600

- Minimum voltage is guaranteed to maximum 0.2% of rated output voltage.
- *2: Minimum current is guaranteed to maximum 0.4% of rated output current.
 *3: For cases where conformance to various safety standards (UL, IEC, etc) is required, to be
- described as 190-240Vac (50/60Hz) for 3-Phase 208V models, and 380~415Vac (50/60Hz) for 3-Phase 400V models. *4: 3-Phase 208V mo
- 3-Phase 208V models: At 208Vac input voltage, 3-Phase 400V: At 380Vac input voltage. With rated output power.

mV

80

100

160

200

Not including EMI filter inrush current, less than 0.2mSec.

Accuracy (1% of Vo Rated)

- 3-Phase 208V models: 170~265Vac, constant load. 3-Phase 400V models: 342~460Vac, constant load.
- 800 From No-Load to Full-Load, constant input voltage. Maximum drop in Remote Sense. For 8V~300V models: Measured with JEITA RC-9131A (1:1) probe. For 600V model: Measured with 10:1 probe.
 From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated, resistive load.

1000

1500

3000

6000

- *10: From 90% to 10% of Rated Output Voltage.

400

300

*11: For load voltage change, equal to the unit voltage rating, constant input voltage.
*12: For 8V~16V models the ripple is measured from 2V to rated output voltage and rated output

600

- current. For other models, the ripple is measured at 10~100% of rated output voltage and rated
- *13: The Constant Current programming readback and monitoring accuracy does not include the warm-up and Load regulation thermal drift.

Genesys[™] 5kW Specifications

2.1 INPUT CHARACTERISTICS	GEN	8-600	10-500	16-310	20-250	30-170	40-125	60-85	80-65	100-50	150-34	300-17	600-8.5
1. Input voltage/freq. (*3)		3-Phase, 2 3-Phase, 4											
2. Maximum Input 3-Phase, 208V models:	A	20.7	21.5	21.4	21	21.5	20.6	20.5	21.4	20.6	21	21	21
current at 100% load 3-Phase, 400V models:	Arms	10.3	10.7	10.6	10.5	10.2	10.2	10.2	10.6	10.2	10.4	10.4	10.4
3.Power Factor (Typ)		0.94 at 100	% load an	d 208V/380	V/400V/415	/							
4. Inrush Current	Α	A 3-Phase 200V: 50A, 3-Phase 400V: 20A. Not including the EMI filter inrush current, less than 0.2mSec.											
5. Efficiency at 200V and 380V	%	84	84	84	86	86	88	90	88	88	88	88	88
6. Efficiency at 170V and 342V	%	84	84	84	86	86	88	90	88	88	88	88	88
7. Hold up time (CV Mode)	mS	5mS typica	ıl										
8. Phase Imbalance	%	≤5%											
9. Leakage Current	mA	lees than 3	mA										

–			
2.2 POWER	SUPPLY	CONFIGU	RATION

	Up to Four (4) identical units may be connected in Master/Slave Mode with two wire connection. In Advanced parallel feature, the current of Master Unit, multiplied by number of units connected in parallel, is made available on digital interface and displayed on front panel of Master unit. Remote analog current monitor of the Master is scaled to output current of the Master unit (only).
2. Series Operation	Possible (with external diodes), up to identical 2 units with total output not to exceed +/-600V from chassis ground.

2.3 ENVIRONMENTAL CONDITIONS

Operating temp	0~50°C, 100% load.
2. Storage temp	-20~85°C
Operating humidity	20-90% RH (non-condensing).
	10-95% RH (non-condensing).
	MIL-STD-810F, method 514.5, The EUT is fixed to the vibrating surface. Less than 20G, half sine, 11mSec. Unit is unpacked. ASTM D4169, Standard Practice for Performance Testing of Shipping Containers and Systems, Shipping Unit: Single Package Assurance Level: Level II; Acceptance Criteria: Criterion 1 - No product damage Criterion 2 - Packaging is intact, Distribution Cycle: 12 - Air (intercity) and motor freight (local), unitized is used
6. Altitude	Operating: 10000ft (3000m), Derate output current by 2%/100m above 2000m, Non operating: 40000ft (12000m).

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Z.4 LIVIC	
1. Applicable Standards:	
2. ESD	IEC1000-4-2. Air-disch8kV, contact disch4kV
3. Fast transients	IEC1000-4-4. 2kV
Surge immunity	IEC1000-4-5. 1kV line to line, 2kV line to ground
5. Conducted immunity	IEC1000-4-6, 3V
Radiated immunity	IEC1000-4-3, 3V/m
7. Magnetic field immunity	EN61000-4-8, 1A/m
8. Voltage dips	EN61000-4-11
Conducted emission	EN55022A, FCC part 15-A, VCCI-A.
10. Radiated emission	EN55022A, FCC part 15-A, VCCI-A.

2.5 SAFETY

1.Applicable standards:	CE Mark, UL60950,EN60950 listed. Vout≤40V:Output is SELV , IEEE/Isolated analog are SELV.	
	40 <vout≤400v: analog="" are="" hazardous,="" ieee="" is="" isolated="" output="" selv.<="" td=""><td></td></vout≤400v:>	
	400 <vout≤600v:output analog="" are="" hazardous,="" ieee="" is="" isolated="" not="" selv.<="" td=""><td></td></vout≤600v:output>	
2.Withstand voltage	Vout≤40V models :Input-Outputs (SELV): 4242VDC 1min, Input-Ground: 2828VDC 1min.	
	40 <vout≤100v 1min,="" 1min.<="" 2600vdc="" 4242vdc="" input-haz.="" input-selv:="" models:="" output:="" td=""><td></td></vout≤100v>	
	Hazardous OutputSELV: 1900VDC 1min, Hazardous Output-Ground:1200VDC 1min. Input-Ground: 2828VDC 1min.	
	100 <vout≤600v 1min,="" 1min.<="" 4000vdc="" 4242vdc="" input-haz.="" input-selv:="" models:="" output:="" td=""><td></td></vout≤600v>	
	Hazardous OutputSELV: 3550VDC 1min. Hazardous Output-Ground:2670VDC 1min. Input-Ground: 2828VDC 1min.	
3.Insulation resistance	More than 100Mohm at 25°C , 70% RH.	

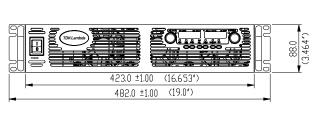
2.6 MECHANICAL CONSTRUCTION

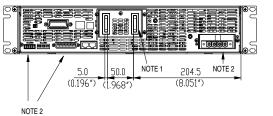
1. Cooling	Forced air flow: from front to rear. No ventilation holes at the top or bottom of the chassis; Variable fan speed.
2. Dimensions (WxHxD) W: 423mm / 16.65" H: 88mm / 3.46;" D: 442.5mm / 17.42" (excluding connectors, encoders, handles, etc.)	
3. Weight	16 kg. / 35.2lbs
4. AC Input connector (with Protective Cover)	3-Phase, 208V & 400V models, Power Combicon PC 6-16/4-GF-10,16 series, with Strain relief.
5.Output connectors	8V to 100V models: Bus-bars (hole Ø 10.5mm). 150V to 600V models: wire clamp connector, Phoenix P/N: FRONT-4-H-7.62

2.7 Warranty 1. Warranty

1. Warranty 5 years

Outline Drawing Genesys[™] 5kW Units





556.6 (21.909*) A A A A 60.5 ±0.50 (2.381*) (3.625*) (3.625*) (442.5 ±1.00 (17.421*)

NOTE

- Bus bars for 8V to 100V models (shown)
 Wire clamp connector for 150V to 600V models
- 2. Plug connectors included with the power supply
- Chassis slides mounting holes #10-32 marked "A" GENERAL DEVICES P/N: C-300-S-116 or equivalent

Genesys™ 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

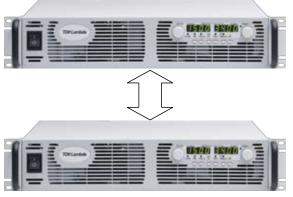
Up to two units may be connected in series to increase the output voltage or to provide bipolar output. (Max 600V to Chassis Ground).

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 with or without Multi-Drop option.







P/N: IEMD

P/N: MD

P/N: IS420

P/N: LAN

Programming Options (Factory installed)

New IEEE Multi-Drop Interface

- Allows IEEE Master to control up to 30 (Multi-Drop equipped) slaves over RS-485 daisy-chain
- Only the Master needs be equipped with IEEE Interface
- IEEE 488.2 SCPI Compliant
- Program Voltage
- Measure Voltage
- Over Voltage setting and shutdown
- Error and Status Messages

- Program Current
- Measure Current
- Current Foldback shutdown

New Multi-Drop Slave Option

Slaves need to be equipped with the MD Slave (RS-485) option

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. P/N: IS510

Power supply Voltage and Current Programming Accuracy ±1%

Power supply Voltage and Current Monitoring Accuracy ±1.5%

Current Programming with 4-20mA signal.

Power supply Voltage and Current Programming Accuracy $\pm 1\%$ Power supply Voltage and Current Monitoring Accuracy $\pm 1.5\%$

LAN Interface LXI Compliant to Class C

- Meets all LXI-C Requirements
- Address Viewable on Front Panel
- Fixed and Dynamic Addressing
- Fast Startup

- VISA & SCPI Compatible
- LAN Fault Indicators
- Auto-detects LAN Cross-over Cable
- Compatible with most standard Networks

USB Interface P/N: USB

- Allows Serial Connection to USB Port on Computer
- Serial commands same as (standard) RS-232/RS-485 Interface

5 Genesys™ 5kW 2U

Power Supply Identification / Accessories How to order

<u>GEN</u> <u>8</u> - <u>600</u>

Series Output Output Name Voltage Current (0~8V) (0~600A) Factory Option: IEMD
MD
IS510
IS420
LAN

USB

AC Input Options 3P208 (Three Phase 208VAC) 3P400 (Three Phase 400VAC)

Models 5kW

Model	Output Voltage VDC	Output Current (A)	Output Power (W)
GEN 8-600	0~8V	0~600	4800
GEN 10-500	0~10V	0~500	5000
GEN 16-310	0~16V	0~310	4960
GEN 20-250	0~20V	0~250	5000
GEN 30-170	0~30V	0~170	5100
GEN 40-125	0~40V	0~125	5000

Model	Output Voltage VDC	Output Current (A)	Output Power (W)
GEN 60-85	0~60V	0~85	5100
GEN 80-65	0~80V	0~65	5200
GEN 100-50	0~100V	0~50	5000
GEN 150-34	0~150V	0~34	5100
GEN 300-17	0~300V	0~17	5100
GEN 600-8.5	0~600V	0~8.5	5100

Factory options

RS-232/RS-485 Interface built-in Standard GPIB (Multi-Drop Master) Interface IEMD
Multi-Drop Slave Interface MD
Voltage Programming Isolated Analog Interface IS510
Current Programming Isolated Analog Interface IS420
LAN Interface (Complies with LXI Class C) LAN
USB Interface USB

Accessories

1. Serial Communication cable

RS-232/RS-485 cable is used to connect the power supply to the Host PC.

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

P/N

2. Serial link cable*

Daisy-chain up to 31 Genesys™ power supplies.

Mode	Power Supply Connector	Communication Cable	P/N
RS-485	EIA/TIA-568A (RJ-45)	Shield Ground L=50cm	GEN/RJ45

^{*} Included with power supply



Also available, Genesys™
1U Half Rack 750W
1U Full Rack 750W/1500W
2U Full Rack 3300W
3U Full Rack 10/15kW

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