

**Improved  
Specifications**

# Genesys™

**Programmable DC Power Supplies  
750W/1500W in 1U**

**Built in RS-232 & RS-485 Interface  
Advanced Parallel Operation**

**Optional Interface:  
LXI Compliant LAN**

**IEEE488.2 SCPI (GPIB) Multi-drop  
Isolated Analog Programming**



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**TDK-Lambda**

The Genesys™ 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: 1500W in 1U
- Wide Range Input (85 - 265Vac Continuous, single phase, 47/63Hz)
- Active Power Factor Correction (0.99 typical)
- Output Voltage up to 600V, Current up to 200A
- Built-in RS-232/RS-485 Interface Standard
- Last-Setting Memory
- Global Commands for Serial RS-232/RS-485 Interface
- Front Panel Lock selectable from Front Panel or Software
- High Resolution 16 bit ADCs & DACs
- Reliable Encoders for Voltage and Current Adjustment
- Constant Voltage/Constant Current auto-crossover
- Advanced Parallel reports total current up to four identical units
- 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 Mounted 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 Interface
- LabView® and LabWindows® drivers
- Five Year Warranty

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



## Applications

Genesys™ power supplies have been designed to meet the demands of a wide variety of applications.

Common controls are shared all Genesys™ Series.

### Test and Measurement

Last-Setting memory simplifies test design and requires no battery backup.

Built-in RS-232/RS-485 gives maximum system flexibility along with 0-5V and 0-10V, selectable analog programming.

Wide range of available inputs allows testing of many different devices.

### Semiconductor Burn-in

Safe-Start may be ENABLED to re-start at Output OFF to protect load.

Wide range input (85-265Vac) with Active Power Factor correction rides through input transients easily.

### Component Test

High power density, zero stacking and single wire parallel operation give maximum system flexibility.

### Laser Diode

OVP is directly set on Voltage Display, assuring accurate protection settings.

Current Limit Fold Back assures load is protected from current surges.

### Heater Supplies

Smooth, reliable encoders enhance front panel control.

Remote analog programming is user selectable 0-5V or 0-10V.

### RF Amplifiers and Magnets

Robust design assures stable operation under a wide variety of loads.

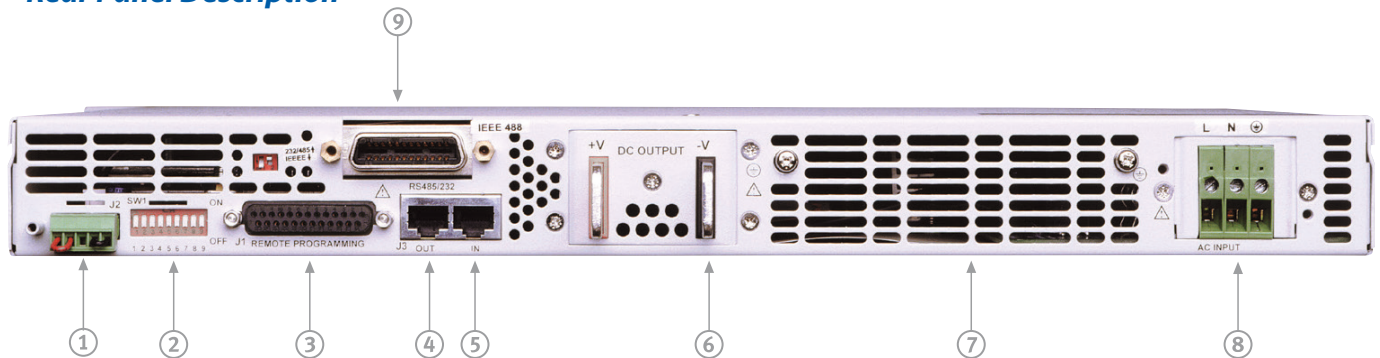
High linearity in voltage and current mode.

**Front Panel Description**



1. AC ON/OFF Switch
2. Air Intake allows zero stacking for maximum system flexibility and power density.
3. Reliable encoder controls Output Voltage and sets Address.
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 baudrate.
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
  - Preview settings and set Voltage/Current with Output OFF, Front Panel Lockout
  - Set OVP and UVL Limits
  - Set Current Foldback
  - Local/Remote Mode and select Address and Baudrate
  - Output ON/OFF and Auto-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 for up to 60V Output; wire clamp connector for Outputs >60V.
7. Exit air assures reliable operation when zero stacked.
8. Wide-Range Input 85-265VAC continuous, 47/63Hz with Active Power Factor Correction (0.99 typical). AC Input Connector: 750W (IEC320), 1500W (screw terminal-shown).
9. Optional Interface Position for IEEE 488.2 SCPI (shown) or Isolated Analog Interface or LAN Interface.



## General Specifications Genesys™ 750W/1500W

### 2.1 INPUT CHARACTERISTICS

1. Input voltage/freq. (*1)	85~265Vac continuous, 47~63Hz, single phase
2. Power Factor	0.99 @100/200Vac, rated output power.
3. EN61000-3-2,3 compliance	Complies with EN61000-3-2 class A and EN61000-3-3 at 20~100% output power.
4. Input current 100/200Vac	750W :10.5A / 5A, 1500W :21A / 11A
5. Inrush current 100/200Vac	750W :Less than 25A, 1500W :Less than 50A
6. Hold-up time	More than 20mS, 100Vac, at 100% load.

### 2.2 POWER SUPPLY CONFIGURATION

1. Parallel Operation	Up to 4 units in master/slave mode with single wire current balance connection
2. Series Operation	Up to 2 units. with external diodes. 600V Max to Chassis ground

### 2.3 ENVIRONMENTAL CONDITIONS

1. Operating temp	0~50°C, 100% load.
2. Storage temp	-20~70°C
3. Operating humidity	30~90% RH (non-condensing).
4. Storage humidity	10~95% RH (non-condensing).
5. Vibration	MIL-810E, method 514.4, test cond. I-3.3.1. The EUT is fixed to the vibrating surface.
6. Shock	Less than 20G, half sine, 11mSec. Unit is unpacked.
7. Altitude	Operating: 10000ft (3000m), Derat output current by 2%/100m above 2000m, Non operating: 40000ft (12000m).

### 2.4 EMC

1. Applicable Standards:	
2. ESD	IEC1000-4-2. Air-disch. -8KV, contact disch. -4KV
3. Fast transients	IEC1000-4-4. 2KV
4. Surge immunity	IEC1000-4-5. 1KV line to line, 2KV line to ground
5. Conducted immunity	IEC1000-4-6, 3V
6. Radiated immunity	IEC1000-4-3, 3V/m
7. Conducted emission	EN55022B, FCC part 15J-B, VCCI-B.
8. Radiated emission	EN55022A, FCC part 15-A, VCCI-A.
9. Voltage dips	EN61000-4-11
10. Conducted emission	EN55022B, FCC part 15-B, VCCI-B.
11. Radiated emission	EN55022A, FCC part 15-A, VCCI-A.

### 2.5 SAFETY

1. Applicable standards:	UL 60950-1, CSA22.2 No.60950-1, IEC 60950-1, EN 60950-1
2. Interface classification	Models with Vout 50V: Output is SELV, all communication/control interfaces (RS232/485, IEEE, Isolated Analog, LAN, Sense, Remote Programming and Monitoring) are SELV. Models with 60V Vout 400V: Output is Hazardous, communication/control interfaces: RS232/485, IEEE, Isolated Analog, LAN, Remote Programing and Monitoring (pins 1-3, pins14-16) are SELV, Sense, Remote Programming and Monitoring (pins 8-13, pins 21-25) are Hazardous. Models with 400V Vout 600V: Output is Hazardous, all communication/control interfaces (RS232/485, IEEE, Isolated Analog, LAN, Sense, Remote Programming and Monitoring) are Hazardous.
3. Withstand voltage	Vout 50V models : Input-Output (SELV): 4242VDC 1min, Input-communication/control (SELV): 4242VDC 1min, Input-Ground: 2828VDC 1min, 60V Vout 150V models: Input-Output (Hazardous): 3425VDC 1min, Input-communication/control (SELV): 4242VDC 1min, Output(Hazardous)-SELV: 2307VDC 1min, Output(Hazardous)-Ground: 1414VDC 1min, Input-Ground: 2828VDC 1min. 300V Vout 600V models: Input-Output(Hazardous): 3490VDC 1min, Input-communication/control (SELV): 4242VDC 1min, Hazardous. Output-communication/control(SELV): 4242VDC 1min, Output(Hazardous)-Ground: 2738VDC 1min, Input-Ground: 2828VDC 1min.
4. 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: 422.8mm, H: 43.6mm, D: 432.8mm (excluding connectors, encoders, handles, etc.)
3. Weight	750W: 7Kg (15 Lbs) 1500W: 8.5Kg (18 Lbs)
4. AC Input connector	750W: IEC320 AC Inlet. 1500W: Screw terminal block, Phoenix P/N: FRONT-4-H-7.62, with strain relief
5. Output connectors	6V to 60V models: Bus-bars (hole Ø 8.5mm). 80V to 600V models: wire clamp connector, Phoenix P/N: FRONT-4-H-7.62

### 2.7 RELIABILITY SPECS

1. Warranty	5 years.
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\*1: For cases where conformance to various safety standards (UL, IEC etc.) is required, to be described as 100-240Vac (50/60Hz).  
All specifications subject to change without notice.

## 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.

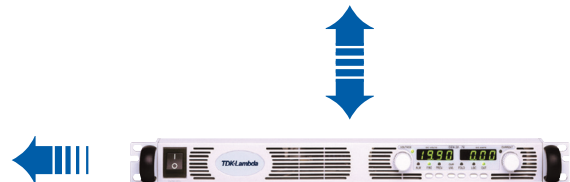


### Series operation

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



### Programming Options (Factory installed)

#### Digital Programming via IEEE Multi-Drop Interface

P/N: IEEE

- Allows IEEE Master to control up to 30 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

#### 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  $\pm 1\%$   
Power supply Voltage and Current Monitoring Accuracy  $\pm 1.5\%$
- Current Programming with 4-20mA signal. P/N: IS420  
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

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

**Power Supply Identification / Accessories How to order**

<b>GEN</b>	<b>600</b>	-	<b>2.6</b>	-		-	
				Factory Options	AC Cable option is 750W only		
Series Name	Output Voltage (0~600V)	Output Current (0~2.6A)	Option: IEEE IS510 IS420 LAN	Region: E - Europe GB - United Kingdom J - Japan I - Middle East U - North America			

**Models 750/1500W**

Model	Output Voltage VDC	Output Current (A)	Output Power (W)
GEN6-100	0~6V	0~100	600
GEN6-200		0~200	1200
GEN8-90	0~8V	0~90	720
GEN8-180		0~180	1440
GEN12.5-60	0~12.5V	0~60	750
GEN12.5-120		0~120	1500
GEN20-38	0~20V	0~38	760
GEN20-76		0~76	1520
GEN30-25	0~30V	0~25	750
GEN30-50		0~50	1500
GEN40-19	0~40V	0~19	760
GEN40-38		0~38	1520

Model	Output Voltage VDC	Output Current (A)	Output Power (W)
GEN50-30	0~50V	0~30	1500
GEN60-12.5	0~60V	0~12.5	750
GEN60-25		0~25	1500
GEN80-9.5	0~80V	0~9.5	760
GEN80-19		0~19	1520
GEN100-7.5	0~100V	0~7.5	750
GEN100-15		0~15	1500
GEN150-5	0~150V	0~5	750
GEN150-10		0~10	1500
GEN300-2.5	0~300V	0~2.5	750
GEN300-5		0~5	1500
GEN600-1.3	0~600V	0~1.3	780
GEN600-2.6		0~2.6	1560






**Factory option**

RS-232/RS-485 Interface built-in Standard  
 GPIB Interface  
 Voltage Programming Isolated Analog Interface  
 Current Programming Isolated Analog Interface  
 LAN Interface (Complies with **LXI** Class C)

**P/N**

-  
 IEEE  
 IS510  
 IS420  
 LAN

**AC Cords sets (750W only)**

Region	Europe	United Kingdom	Japan	Middle East	North America
Output Power AC Cords Wall Plug Power Supply Connector	750W 10A/250Vac L=2m INT'L 7/VII IEC320-C13 	750W 10A/250Vac L=2m BS1363 IEC320-C13 	750W 13A/125Vac L=2m IEC320-C13 	750W 10A/250Vac L=2m SI-32 IEC320-C13 	750W 13A/125Vac L=2m NEMA 5-15P IEC320-C13 
Part Number	P/N: GEN/E	P/N: GEN/GB	P/N: GEN/J	P/N: GEN/I	P/N : GEN/U

**Accessories**

**1. Communication cable**

RS-232/RS-485 Cable is used to connect the power supply to the PC Controller.

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

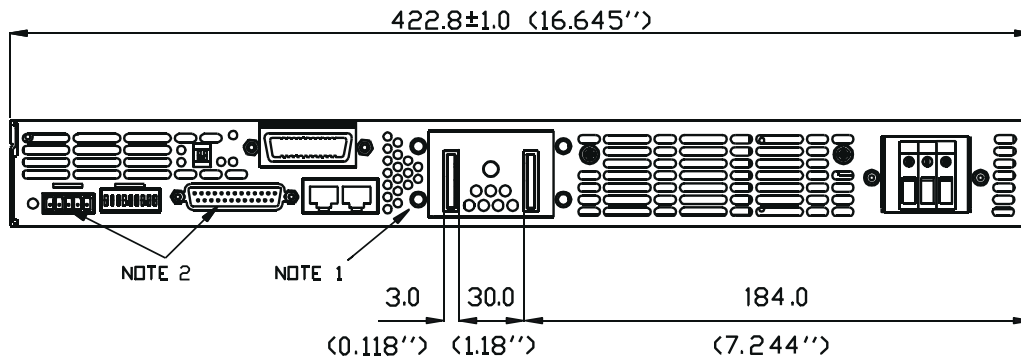
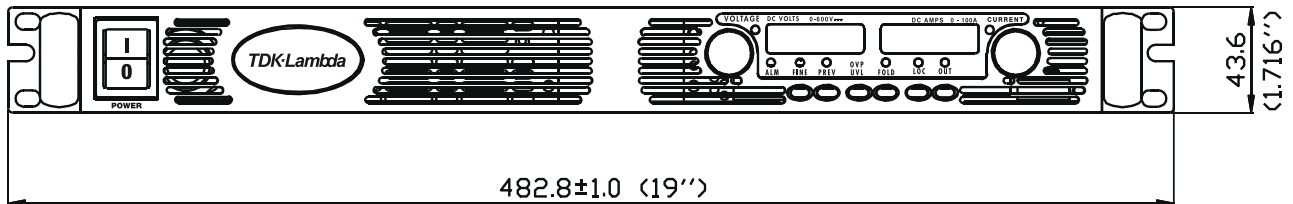
**2. Serial link cable\***

Daisy-chain up to 31 Genesys™ power supplies.

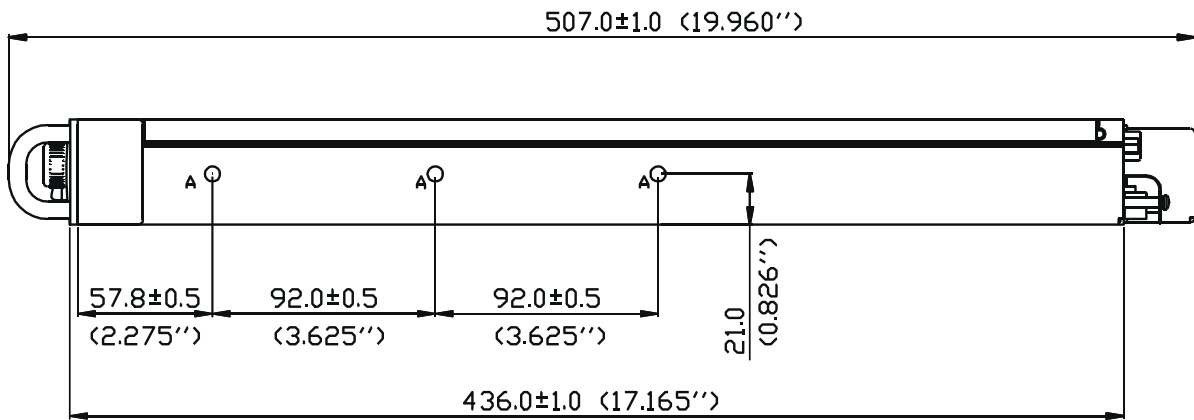
Mode	Power Supply Connector	Communication Cable	P/N
RS-485	EIA/TIA-568A (RJ-45)	Shield Ground L=50cm	GEN/RJ45

\* Included with power supply

Outline Drawing Genesys™ 750W/1500W Units







**NOTE**

1. Bus bars for 6v to 60v models (shown)  
Wire clamp connector for 80V to 600V models
2. Plug connectors included with the power supply
3. Chassis slides mounting holes #10-32 marked "A"  
GENERAL DEVICES P/N: C-300-S-116 or equivalent

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