# Genesys™

GENH Series
Programmable DC Power Supplies
750W in a 1U half-rack size
Built in RS-232 & RS-485 Interface
Advanced Parallel Standard

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



TDK-Lambda

## Genesys<sup>TM</sup> GENH750W-1U

The Genesys<sup>TM</sup> 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 available: 750W in 1U half-rack size.
- Wide Range Input (85 265Vac Continuous)
- Active Power Factor Correction (0.99 typical)
- Output Voltage up to 600V, Current up to 100A
- Built-in RS-232/RS-485 Interface
- Front Panel Lockout
- Last-Setting Memory
- 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
- Global Commands for Serial RS-232/RS-485 Interface

- Independent Remote ON/OFF and Remote Enable/Disable
- External Analog Programming and Monitoring
- · Reliable Modular and SMT Design
- 19" Rack Mounted ATE benchtop and OEM applications
- Side-by-side mounting of two units in a 19" rack
- Optional Interfaces

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

IEEE 488.2 SCPI (GPIB) Multi-Drop

LX Compliant LAN

- LabView® and LabWindows® drivers
- Five Year Warranty

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





# **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 SettingsOutput 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

# TDK·Lambda

## **Applications**

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

#### 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**

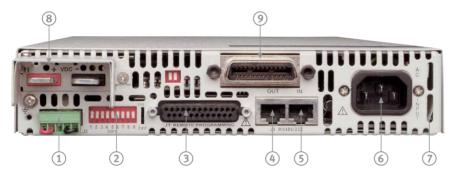
Smooth, reliable encoders enhance front panel control. Remote analog programming is user selectable 0-5V or 0-10V.

## RF Amplifiers and Magnets

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

High linearity in voltage and current mode.

## **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. Wide-Range Input 85-265VAC continuous, 47/63Hz with Active Power Factor Correction (0.99 typical) AC Input Connector: IEC320.
- 7. Exit air assures reliable operation when zero stacked.
- 8. Output Connections: Rugged busbars for 6V up to 60V Output; Connector for Outputs >60V.
- 9. Optional Interface Position for IEEE 488.2 SCPI (shown) or Isolated Analog Interface or LAN Interface.

# Genesys ™ GENH750W Specifications

1.0 MODEL	GENH	6-100	8-90	12.5-60	20-38	30-25	40-19	60-12.5	80-9.5	100-7.5	150-5	300-2.5	600-1.3
1.Rated output voltage (*1)	V	6	8	12.5	20	30	40	60	80	100	150	300	600
2.Rated Output Current (*2)	Α	100	90	60	38	25	19	12.5	9.5	7.5	5	2.5	1.3
3.Rated Output Power	W	600	720	750	760	750	760	750	760	750	750	750	780
4.Efficiency at 100/200Vac (*3)	%	76/78	78/81	81/84	82/85	82/85	83/87	83/87	83/87	83/87	83/87	83/87	83/87
.1 CONSTANT VOLTAGE MODE													
1.Max.line regulation ( 0.01% of Vo+ 2mV )(*4)	mV	2.6	2.8	3.3	4	5	6	8	10	12	17	32	62
2.Max load regulation (0.01% of Vo+2mV)(*5)	mV	2.6	2.8	3.3	4	5	6	8	10	12	17	32	62
3.Ripple and noise p-p 20MHz (*9)	mV	60	60	60	60	60	60	60	80	80	100	150	300
4.Ripple r.m.s 5Hz~1MHz (*9)	mV	8	8	8	8	8	8	8	8	8	10	25	60
5.Remote sense compensation/line	V	1	1	1	1	1.5	2	3	4	5	5	5	5
6.Temp. coefficient	PPM/°C	100PPI	M/°C of rat	ed output vo	Itage,follov	ving 30 mir	nutes warm	up					
7.Up-prog. response time, 0~Vo Rated	mS	80mS ,	N.L/F.L, r	esistive load					150mS,	N.L/F.L, res	sistive load		250
8.Down-prog response time full-load	mS	10		50			80				150		250
9.Down-prog response time no-load	mS	500	600	700	800	900	1000	1100	1200	1500	2000	2500	4000
10.Transient response time (*8)			Less than 1mSec for models up to and including 100V. 2msec for models above 100V										
.2 CONSTANT CURRENT MODE													
1.Max.line regulation (0.01% of lo+ 2mA)(*4)	mA	12	11	8.0	5.8	4.5	3.9	3.25	2.95	2.75	2.5	2.25	2.13
2.Max.load regulation (0.02% of lo+5mA)(*6)	mA	25	23	17	12.6	10	8.8	7.5	6.9	6.5	6.0	5.5	5.26
3.Ripple r.m.s 5Hz~1MHz . (*7)	mA	200	180	120	76	63	48	38	29	23	18	13	8
4.Temp. coefficient	PPM/°C	100PPM/	°C from ra	ted output c	urrent, follo	wing 30 m	inutes warr	n up					
.3 PROTECTIVE FUNCTIONS													
1. OCP			0~105% Constant Current										
2. OCP Foldback			Output shut down when power supply change from CV to CC. User selectable.										
3. OVP type		Inverter shut-down, manual reset by AC input recycle or by OUT button or by communication port											

1.01 NOTEOTIVE FOROTIONS	
1. OCP	0~105% Constant Current
2. OCP Foldback	Output shut down when power supply change from CV to CC. User selectable.
3. OVP type	Inverter shut-down, manual reset by AC input recycle or by OUT button or by communication port
4. OVP trip point	0.5~7.5V   0.5~10V   1~15V   1~24V   2~36V   2~44V   5~66V   5~88V   5~110V   5~165V   5~330V   5~660V
5. Over Temp. Protection	User selectable , latched or non latched

#### 1.4 ANALOG PROGRAMMING AND MONITORING

0~100%, 0~5V or 0~10V, user select. Accuracy and linearity:+/-0.5% of rated Vout.
0~100%, 0~5V or 0~10V, user select. Accuracy and linearity:+/-1% of rated lout.
0~100%, 0~5/10Kohm full scale,user select.,Accuracy and linearity:+/-1% of rated Vout.
0~100%, 0~5/10Kohm full scale,user select. Accuracy and linearity:+/-1.5% of rated lout.
By electrical. Voltage: 0~0.6V/2~15V,or dry contact ,user selectable logic
0~5V or 0~10V, accuracy:1%, user selectable
0~5V or 0~10V ,accuracy:1% ,user selectable
TTL High=OK, 0V-Fail 500ohm impedance
CV: TTL high (4~5V) source: 10mA, CC: TTL low (0~0.6V) sink current:10mA
Dry contact. Open:off , Short: on. Max. voltage at Enable/Disable in: 6V
By electrical signal or Open/Short: 0~0.6V or short: Remote analog, 4~5V or open: Local.
Open collector, Local: Open, Remote: On. Maximum voltage: 30V, maximum sink current: 5mA.

#### 1.5 EDONT DANEI

1.5 FRUNT PANEL	
1.Control functions	Vout/ lout manual adjust by separate encoders (coarse and fine adjustment selectable)
	OVP/UVL manual adjust by Volt. Adjust encoder
	AC on/off, Output on/off, Re-start modes (auto, safe), Foldback control (CV to CC), Go to local control
	Front Panel Lock
	Address selection by Voltage (or current) adjust encoder. Number of addresses:31
	RS232/485 and IEEE488.2 selection by IEEE enable switch and DIP switch
	Baudrate selection: 1200,2400,4800,9600 and 19,200
2.Display	Voltage 4 digits, accuracy: 0.5%+/-1 count
	Current 4 digits, accuracy: 0.5%+/-1 count
3.Indications	Voltage, Current, Alarm, Fine, Preview, Foldback, Local, Output On, Front Panel Lock

#### 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Interface

Model	V	6	8	12.5	20	30	40	60	80	100	150	300	600
Remote Voltage Programming (16 bit)													
Resolution (0.012% of Vo Rated)	mV	0.72	0.96	1.50	2.40	3.60	4.80	7.2	9.6	12	18	36	72
Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output)	mV	6.0	8.0	12.5	20	30	40	60	80	100	150	300	600
2. Remote Current Programming (16 bit)													
Resolution (0.012% of lo Rated)	mΑ	12	10.8	7.2	4.56	3.0	2.28	1.50	1.14	0.90	0.60	0.30	0.16
Accuracy (0.1% of lo Rated+0.1% of lo Actual Output)	mΑ	200	180	120	76	50	38	25	19	15	10	5.0	2.6
3. Readback Voltage													
Resolution (0.012% of Vo Rated)	mV	0.72	0.96	1.50	2.40	3.60	4.80	7.2	9.6	12	18	36	72
Accuracy (0.1%Vo Rated+0.1% of Vo Actual Output)	mV	12	16	25	40	60	80	120	160	200	300	600	1200
4. Readback Current													
Resolution (0.012% of lo Rated )	mΑ	12	10.8	7.2	4.56	3.0	2.28	1.50	1.14	0.90	0.60	0.30	0.16
Accuracy (0.3% of lo Rated+0.1% of lo Actual Output)	mΑ	400	360	240	152	100	76	50	38	30	20	10	5.2
5. OVP/UVL Programming													
Resolution (0.1% of Vo Rated)	mV	6	8	12	20	30	40	60	80	100	150	300	600
Accuracy (1% of Vo Rated)	mV	60	80	125	200	300	400	600	800	1000	1500	3000	6000

 $<sup>^{\</sup>star}1:$  Minimum voltage is guaranteed to maximum 0.2% of Vo Rated.

<sup>\*2:</sup> Minimum current is guaranteed to maximum 0.4% of lo Rated

<sup>\*3:</sup> At maximum output power.

<sup>\*4: 85~132</sup>Vac or 170~265Vac, constant load.

<sup>\*5:</sup> From No-load to Full-load, constant input voltage.

<sup>\*6:</sup> For load voltage change, equal to the unit voltage rating, constant input voltage.

\*7: For 6V models the ripple is measured at 2~6V output voltage and full output current. For other models, the ripple is measured at 10~100% output voltage and full output current.

\*8: Time for the output voltage to recover within 0.5% of its rated for a load change 10~90% of rated output current, Output set-point:10~100%.

<sup>\*9:</sup> For 6V~300V models: measured with JEITA RC-9131A 1:1 probe. For 600V model: measured with 10:1 probe Accuracy -Values have been calculated at Vo Rated & Io Rated

# General Specifications Genesys™ GENH750W

# TDK·Lambda

#### 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	10.5A / 5A,
5. Inrush current 100/200Vac	Less than 25A,
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

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

2.7 LWO	
1.Applicable Standards:	
2.ESD	IEC1000-4-2. Air-disch8KV, contact disch4KV
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

Z.S OAI ETT	
1.Applicable standards:	CE Mark, UL60950,EN60950 listed. Vout<60V:Output is SELV , IEEE/Isolated analog are SELV.
	60 <vout<400v: analog="" are="" hazardous,="" ieee="" is="" isolated="" output="" selv.<="" td=""></vout<400v:>
	400 <vout<600v:output analog="" are="" hazardous,="" ieee="" is="" isolated="" not="" selv.<="" td=""></vout<600v:output>
2.Withstand voltage	Vout<60V models :Input-Outputs (SELV): 3.0KVrms 1min, Input-Ground: 2.0KVrms 1min.
	60 <vout<600v 1min,="" 1min.<="" 2.5kvrms="" 3kvrms="" input-haz.="" input-selv:="" models:="" output:="" td=""></vout<600v>
	Hazardous OutputSELV: 1.9KVrms 1min, Hazardous Output-Ground:1.9KVrms 1min.
	Input-Ground: 2KVrms 1min.
3.Insulation resistance	More than 100Mohm at 25°C, 70% RH, 500Vdc

#### 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: 214.0mm, H: 43.6mm, (57.0mm Benchtop version), D: 437.5mm (excluding connectors, encoders, handles, etc.)						
3. Weight	4.5Kg (9.9 Lbs)						
4. AC Input connector	IEC320 AC Inlet.						
5.Output connectors	6V to 60V models: Bus-bars (hole Ø 6.5mm). 80V to 600V models: Meating plug, Phoenix P/N: GIC 2.5/4-ST-7.62.						

### 2.7 RELIABILITY SPECS

Warranty	5 years.

<sup>\*1:</sup> 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.

# Also available Genesys™ 1U full Rack 750W/1500W & 2U 3300W



# Genesys™ Power Benchtop Parallel and Series Configurations

Benchtop Power Supply

### 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.





P/N: IEEE



# **Programming Options (Factory installed)**

Digital Programming via IEEE Interface

- 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

## **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.

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

Program Current

Measure Current

Current Foldback shutdown

- Auto-detects LAN Cross-over Cable
- Fast Startup









## **Accessories**

# Rack Mounting applications P/N:GENH/RM

The Rack Mounted kit allows the units to be zero stacking for maximum system flexibility and power density without increasing the 1U height of the units

To install one GENH750W unit or two units side-by-side in a standard 19" rack in 1U(1.75") height, use option kit P/N:GENH/RM

# Single unit installation

Single GENH750W power supply in a standard 19" rack in 1U(1.75") height,



## **Dual unit installation**

Two GENH750W power supplies side-by-side in a standard 19" rack in 1U(1.75") height,



# Benchtop applications P/N:GENH/MO

The benchtop stacking kit allows the units to be Zero stacked for maximum system flexibility and power density without increasing the 1U height of the units. To install a GENH750W two units or three units one on top of the other use option kit P/N:GENH/MO



# **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 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 FShield Ground L=2m EIA/TIA-568A (RJ-45)
P/N	GEN/485-9	GEN/232-9	GEN/232-25

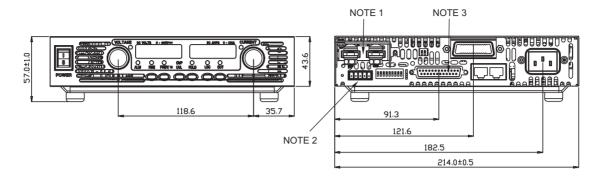
## Serial link cable\*

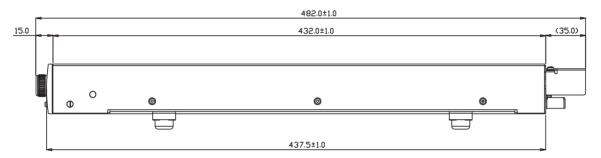
Daisy-chain up to 31 Genesys™ power supplies.

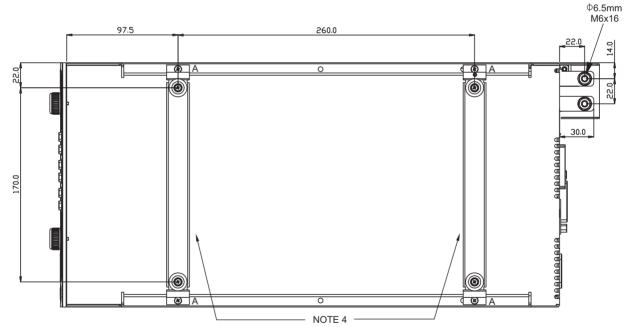
Mode	Power Supply Connector	Communication Cable	P/N
RS-485	EIA/TIA-568A (RJ-45)	Shield Ground L=50cm	GEN/RJ45

<sup>\*</sup> Included with power supply

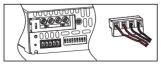
# Outline Drawings Genesys™ GENH 750W







#### NOTE 1



GENH Models 80V to 600V.

#### NOTES:

- 1. Bus-bars 6V to 60V models Connector 80V to 600V model Header Phoenix P/N: GIC 2.5/4-G-7.62
  Mating plug Phoenix P/N: GIC 2.5/4-ST-7.62
  2. Mating plug Phoenix P/N: MC1.5/5-ST-3.81
  3. Mating plug AMP P/N: 745211-2
  Mating plugs supplied with power supply.

- 4. Benchtop assembly x 2 (removable)



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

GENH	60	- 12.5 -		-
			Factory Options	AC Cable option
Series	Output	Output	Option: IEEE	Region: E - Europe
Name	Voltage	Current	IS510	GB - United Kingdom
	(0~60V)	(0~12.5A)	IS420	J - Japan
			LAN	I - Middle East
				U - North America

# **Models GENH750W**

	Output	Output	Output
Model	Voltage	Current	Power
	VDC	(A)	(W)
GENH6-100	0~6V	0~100	600
GENH8-90	0~8V	0~90	720
GENH12.5-60	0~12.5V	0~60	750
GENH20-38	0~20V	0~38	760
GENH30-25	0~30V	0~25	750
GENH40-19	0~40V	0~19	760
GENH60-12.5	0~60V	0~12.5	750
GENH80-9.5	0~80V	0~9.5	760
GENH100-7.5	0~100V	0~7.5	750
GENH150-5	0~150V	0~5	750
GENH300-2.5	0~300V	0~2.5	750
GENH600-1.3	0~600V	0~1.3	780

Factory option	P/N
RS-232/RS-485 Interface built-in Standard	-
GPIB Interface	IEEE
Voltage Programming Isolated Analog Interface	IS510
Current Programming Isolated Analog Interface	IS420
LAN Interface (Complies with LXI Class C)	LAN

# **AC Cords sets**

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

8

# Genesys™

Programmable DC Power Supplies
750W/1500W in 1U
Built in RS-232 & RS-485 Interface
Advanced Parallel Standard

Optional Interfaces: IEEE488.2 SCPI (GPIB) Isolated Analog Programming L∭ Compliant LAN



TDK·Lambda

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## 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
- 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
- Global Commands for Serial RS-232/RS-485 Interface
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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 SettingsOutput 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.

Genesus	TM	750W/	1500W	Spec	ifications
UCI IC3 V3				JUEL	IIIGaliUIIS

1.0 MODEL  1.Rated output voltage(*1)		6 200	0 400	12.5-120	20.76	30-50	40-38	50-30	60-25	80-19	100 15	150-10	300-5	600-2.6		150
	GEN V	6	8	12.5-120	20-76	30-30	40-36	50	60	80	100-13	150-10	300-3	600		>
2.Rated Output Current(*2)		200	180	12.3	76	50		30	25	19	15	10	5			$\rightarrow$
3.Rated Output Current( 2)	A W	1200	1440	1500	1520	1500	38 1520	1500	1500	1520	1500	1500	1500	2.6 1560		
4.Efficiency at 100/200Vac (*3)	%	77/79	78/81	81/84	83/86	83/86	84/88	84/88	84/88	84/88	84/88	84/88	83/87	83/87	х	<u> </u>
1.0 MODEL		6-100	8-90	12.5-60	20-38	30-25	40-19		60-12.5		100-7.5			600-1.3		
1.Rated output voltage (*1)	V	6	8	12.5	20	30	40		60	80	100	150	300	600	X	
2.Rated Output Current (*2) 3.Rated Output Power	A W	100 600	90 720	60 750	38 760	25 750	19 760		12.5 750	9.5 760	7.5 750	5 750	2.5 750	780	X	
	VV	600	720	750	760	750	760		750	760	750	750	750	780	Х	
CONSTANT VOLTAGE MODE																
I.Max.line regulation ( 0.01% of Vo+ 2mV )(*4)	mV	2.6	2.8	3.3	4	5	6	7	8	10	12	17	32	62	Х	
2.Max load regulation ( 0.01% of Vo+2mV )(*5)	mV	2.6	2.8	3.3	4	5	6	7	8	10	12	17	32	62	Х	
S.Ripple and noise p-p 20MHz (*9)	mV	60	60	60	60	60	60	60	60	80	80	100	150	300	X	
Ripple r.m.s 5Hz~1MHz (*9)	mV	8	8	8	8	8	8	8	8	8	8	10	25	60	X	
Remote sense compensation/line	V PPM/°C	1	1	1	1	1.5	2	2	3	4	5	5	5	5	X	
.Temp. coefficient				of rated o		tage,roll	owing 30	minute	s warm u		NII /EI	resist	اممما مينا	250	X	)
.Up-prog. response time, 0~Vo Rated .Down-prog response time full-load	mS mS	10	, IN.L/F	50	ive ioau	1		80		1301113	, N.L/F.I	150	ive ioau	250	X	)
.Down-prog response time no-load	mS	500	600	700	800	900		1100	1100	1200	1500	2000	2500	4000	x	- 2
0.Transient response time (*8)	1110	-		Sec for m									2300	4000	X	-
•		L033 ti	ian iiic	Jec Ioi III	odeis up	to and i	licidaling	100 V. 2	2111366 10	modela	above i	00 V				
CONSTANT CURRENT MODE																
Max.line regulation (0.01% of lo+ 2mA)(*4)	mA	12	11	8.0	5.8	4.5	3.9		3.25	2.95	2.75	2.5	2.25	2.13	X	
.Max.load regulation (0.02% of Io+5mA)(*6)	mA	25	23	17	12.6	10	8.8		7.5	6.9	6.5	6.0	5.5	5.26	Х	<u> </u>
Ripple r.m.s 5Hz~1MHz . (*7)	mA	200	180	120	76	63	48		38	29	23	18	13	8	Х	<del>-</del>
.Max.line regulation (0.01% of lo+ 2mA)(*4)	mA mA	22	20	14 29	9.6	7.0	5.8	5	4.5	3.9	3.5	3.0	2.5	2.26		
Max.load regulation (0.02% of lo+5mA)(*6)	mA	45	41		20.2	15	12.6	11	10 75	8.8	8.0	7.0	6.0	5.52		
.Ripple r.m.s 5Hz~1MHz .(*7) .Temp. coefficient	mA PPM/°C	400	360 M/°C fro	240 om rated	152	125	95 Howing 3	85	75	57 un	45	35	25	12	Х	
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PROTECTIVE FUNCTIONS																
OCP				tant Curre											Х	
OCP Foldback				wn when											Х	
. OVP type				own, mar											Х	;
OVP trip point				V 1~15V			2~44V	5~57V	5~66V	5~88V	5~110V	5~165V	5~330V	5~660V		
Over Temp. Protection		User s	electable	e , latche	d or non	latched									Х	
ANALOG PROGRAMMING AND MONITORIN	IG															
Vout Voltage Programming		0~100	%, 0~5\	/ or 0~10	V, user s	elect. A	ccuracy	and line	arity:+/-0	.5% of ra	ted Vout				Х	
lout Voltage Programming		0~100	%, 0~5\	/ or 0~10	V, user s	elect. Ad	ccuracy	and linea	arity:+/-1	% of rate	d lout.				Х	
.Vout Resistor Programming		0~100	%, 0~5/	10Kohm t	full scale	user se	lect.,Acc	uracy ar	nd lineari	ty:+/-1%	of rated	Vout.			Х	
.lout Resistor Programming				10Kohm f							% of rate	d lout.			Х	
On/Off control (rear panel)				/oltage: 0				act ,user	selectab	le logic					Х	
Output Current monitor				/ , accura											Х	
Output Voltage monitor				/ ,accurad											Х	
Power Supply OK signal				√) -OK, 0											Х	
		ICV: I I		4~5V) so							0mA				X	
								t ⊢nable	/Disable	ın: 6V						
0. Enable/Disable		Dry co								,					Х	
Enable/Disable     Local/Remote analog control		Dry co	ctrical si	gnal or O	pen/Sho	rt: 0~0.6	V or sho	rt: Rem	ote, 4~5\				- ^		X	
CV/CC indicator     Enable/Disable     Local/Remote analog control     Local/Remote analog control indicator		Dry co	ctrical si		pen/Sho	rt: 0~0.6	V or sho	rt: Rem	ote, 4~5\			current:	5mA.		Х	2
Enable/Disable     Local/Remote analog control     Local/Remote analog control indicator		Dry co	ctrical si	gnal or O	pen/Sho	rt: 0~0.6	V or sho	rt: Rem	ote, 4~5\			current: (	5mA.		X	
Enable/Disable     Local/Remote analog control		Dry co By elec Open o	ctrical si collector	gnal or O	pen/Sho	rt: 0~0.6 mote: O	V or sho	ort: Remo	ote, 4~5\ age: 30V	, maxim	um sink (		5mA.		X X X	
Enable/Disable     Local/Remote analog control     Local/Remote analog control indicator     FRONT PANEL		Dry con By elec Open o	ctrical si collector out man	gnal or O , Local: C	pen/Sho pen, Re	rt: 0~0.6 mote: O arate en	N or sho	ort: Rem num volt	ote, 4~5\ age: 30V	, maxim	um sink (		5mA.		X	
Enable/Disable     Local/Remote analog control     Local/Remote analog control indicator     FRONT PANEL		Open of Vout/ I	ctrical si collector out man JVL mar	gnal or O , Local: C nual adjus	pen/Sho pen, Re at by sep at by Volt	rt: 0~0.6 mote: O arate en	N or sho	ort: Remonum volt	ote, 4~5\ age: 30V	, maximi	um sink o	able)		trol	X X X	
Enable/Disable     Local/Remote analog control     Local/Remote analog control indicator     FRONT PANEL		Open of Vout/ I OVP/L AC on.	ctrical si collector out man JVL man /off, Out	gnal or O , Local: C nual adjus	pen/Sho Open, Re st by sep st by Volt f, Re-sta	rt: 0~0.6 mote: O arate en . Adjust rt modes	coders (encoders (auto, salato)	ort: Remonum volt coarse a	ote, 4~5\ age: 30V and fine a	, maximi	um sink on t selecta	able) , Go to l		trol	X X X	
D. Enable/Disable     Local/Remote analog control     Local/Remote analog control indicator     FRONT PANEL		Open of Vout/ I OVP/L AC on Address	ctrical si collector out man JVL mar /off, Out	gnal or O , Local: C nual adjust nual adjust put on/of	pen/Sho open, Re st by sep st by Volt f, Re-sta oltage (o	rt: 0~0.6 mote: O  arate en . Adjust rt modes	coders (encoders (auto, see) adjust	ort: Remonum volt coarse a safe), Fo	ote, 4~5\ age: 30V and fine a ldback co	djustme	um sink on the selection of the CC) asses:31	able) , Go to l		trol	X X X	
Enable/Disable     Local/Remote analog control     Local/Remote analog control indicator     FRONT PANEL		Vout/ I OVP/L AC on. Addres RS232	ctrical si collector out man IVL mar /off, Out ss selec /485 an	gnal or O , Local: C nual adjust nual adjust put on/ofition by Vo	pen/Sho open, Re st by sep st by Volt f, Re-sta oltage (o 88.2 sele	rt: 0~0.6 mote: O  arate en . Adjust rt modes r current	coders (encoders (auto, sea) adjust	coarse a safe), Fo encoder able sw	ote, 4~5\ age: 30V and fine a ldback co	djustme	um sink on the selection of the CC) asses:31	able) , Go to l		trol	X X X X X	
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D. Enable/Disable Local/Remote analog control C. Local/Remote analog control indicator FRONT PANEL Control functions  Display  Indications S Interface RS-232&RS-485 or O odel Remote Voltage Programming (16 bit) solution (0.012% of Vo Rated)	V mV	Vout/ I OVP/L AC on. Address Baudra Voltage Curren Voltage 6	out man  JVL man  /off, Out  ss selec  /485 an  ate selece  4 dig  t, 4 dig  c, Currer  8  0.96	gnal or O , Local: C  aual adjus put on/ofition by Vid IEEE48 tition: 120 jits , accur int, Alarm, 12.5	pen/Sho open, Re st by sep st by Volfi f, Re-sta oltage (o 88.2 sele 0,2400,4 racy: 0.5 Fine, P	rt: 0~0.6 mote: O mote: O marate en. Adjust rt modes r current ction by 1800,960 %+/-1 cc eview, F	coders (encoders (auto, so) adjust IEEE en ount ount ount ount ount ound ound ound ound ound ound ound ound	ort: Remnum volt coarse a safe), Fo encoder able swi 9,200 , Local,	ote, 4–5\ age: 30V  and fine a  ldback co . Number itch and I	djustme control (C r of addr DIP swite en, Front 80 9.6	um sink out selects V to CC) esses:31 ch Panel Lo	able) , Go to k	300 36	600	X X X X X X X X X X X X X X X X X X X	15
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D. Enable/Disable 1. Local/Remote analog control 2. Local/Remote analog control 2. Local/Remote analog control indicator  FRONT PANEL Control functions  Display  Indications 5 Interface RS-232&RS-485 or O  todel Remote Voltage Programming (16 bit) solution (0.012% of Vo Rated) curacy (0.05%Vo Rated+0.05% of Vo Actual Output) solution (0.012% of lo Rated) curacy (0.1% of lo Rated) curacy (0.1% of lo Rated) curacy (0.1% of lo Rated+0.1% of lo Actual Output) Readback Voltage solution (0.012% of Vo Rated) curacy (0.1% of lo Rated+0.1% of lo Actual Output) Readback Voltage solution (0.012% of Vo Rated) curacy (0.1%Vo Rated+0.1% of Vo Actual Output) Readback Voltage solution (0.012% of lo Rated) curacy (0.1%Vo Rated+0.1% of Vo Actual Output)  Readback Current solution (0.012% of lo Rated ) curacy (0.3% of lo Rated )	V mV put) mV  mA mA mA mV ) mV  mA	Dry col	ctrical six collector out man	gnal or O, Local: C anual adjus put on/off tion by Vd IEEE48 tion: 120 tits, accurrit, Alarm, 12.5 1.50 12.5 1.50 12.5 7.2 120 14.4 240 25 7.2 240	pen/Sho ppen, Re at by sep set by Volf f, Re-sta oltage (o 88.2 sele 0,2400,4 racy: 0.5 racy: 0.5 racy: 0.5 perface 20 2.40 20 4.56 76 9.12 152 4.56 40	rt: 0-0.6 mote: O mote: O mote: O mote: O mote: O marate en.	coders (encoders (encoders (auto, s. s.) adjust IEEE en (auto, s. s.) adju	rt: Rem num volt cooarse a safe), Fo encoder able sw 50 6 50  3.60 60	ote, 4-5\age: 30V and fine a ldback cc . Number itch and I  Output C  60  7.2 60  1.50 25 3.0 50  7.2 120	djustme ontrol (C r of addr DIP switch on, Front switch on Fro	nt selective to CC) esses:31 ch  Panel Lc  100  12  100  15  1.80  30  12  200  0.90  30	150 0.60 10 1.20 20 0.60 20	300 36 300 5.0 0.60 10 36 600 0.30 10	600 72 600 0.16 2.6 0.32 5.2 72 1200 0.16 5.2	X X X X X X X X X X X X X X X X X X X	155
D. Enable/Disable 1. Local/Remote analog control 2. Local/Remote analog control 2. Local/Remote analog control indicator FRONT PANEL Control functions  Display  Indications 5 Interface RS-232&RS-485 or O todel Remote Voltage Programming (16 bit) solution (0.012% of Vo Rated) curacy (0.05%Vo Rated+0.05% of Vo Actual Output) Remote Current Programming (16 bit) solution (0.012% of lo Rated) curacy (0.1% of lo Rated) curacy (0.1% of lo Rated) curacy (0.1% of lo Rated+0.1% of lo Actual Output) solution (0.012% of Vo Rated) curacy (0.1% of lo Rated+0.1% of Vo Actual Output) Readback Voltage solution (0.012% of Vo Rated) curacy (0.1%Vo Rated+0.1% of Vo Actual Output) Readback Current solution (0.012% of lo Rated ) curacy (0.3% of lo Rated+0.1% of lo Actual Output) Readback Current solution (0.012% of lo Rated )	mV put) mV  mA ut) mA mA ut) mA  mV  mV  mV  mA  mV  mV  mV  mV  mA  mA	Dry col	ctrical six collector out man	gnal or O, Local: C and a djus put on/ofition by Vid IEEE48 tition: 120 gits , accurits	pen/Sho ppen, Re at by sep st by Vollif, Re-sta bitage (o. 8.2 sele 0.2400, 2400, 2400 20 2.40 20 4.56 76 9.12 152 2.40 40	rt: 0-0.6 mote: O mote	EV or shon. Maxin  coders ( encoders ( encod	rt: Rem num volt coarse a afe), Fo encoder able sw 9,200  6 50  3.60  6.0 100	ote, 4–5\age: 30V and fine a and fine a aldback or . Number titch and I  Output O  1.50 25 3.0 50  1.50 50 3.0	maximi   djustme   djust	mt select: V to CC) esses:31 ch  Panel Lc  100  12  100  15  1.80  30  12  200  0.90  30  1.80	able)  , Go to li  150  18  150  0.60  1.20  0.60  20  1.20	300 36 300 0.30 5.0 0.60 10 36 600 0.30 10 0.60	600 72 600 0.16 2.6 0.32 5.2 72 1200 0.16 5.2 0.32	X X X X X X X X X X X X X X X X X X X	155
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D. Enable/Disable L. Local/Remote analog control L. Local/Remote analog control L. Local/Remote analog control indicator  FRONT PANEL Control functions  Display  Indications Display Display  Indications Display Disp	mV put) mV  mA ut) mA mA ut) mA  mV  mV  mV  mA  mV  mV  mV  mV  mA  mA	Dry col	ctrical six collector out man	gnal or O, Local: C and a djus put on/ofition by Vid IEEE48 tition: 120 gits , accurits	pen/Sho ppen, Re at by sep st by Vollif, Re-sta bitage (o. 8.2 sele 0.2400, 2400, 2400 20 2.40 20 4.56 76 9.12 152 2.40 40	rt: 0-0.6 mote: O mote	EV or shon. Maxin  coders ( encoders ( encod	rt: Rem num volt coarse a afe), Fo encoder able sw 9,200  6 50  3.60  6.0 100	ote, 4–5\age: 30V and fine a and fine a aldback or . Number titch and I  Output O  1.50 25 3.0 50  1.50 50 3.0	maximi   djustme   djust	mt select: V to CC) esses:31 ch  Panel Lc  100  12  100  15  1.80  30  12  200  0.90  30  1.80	able)  , Go to li  150  18  150  0.60  1.20  0.60  20  1.20	300 36 300 0.30 5.0 0.60 10 36 600 0.30 10 0.60	600 72 600 0.16 2.6 0.32 5.2 72 1200 0.16 5.2 0.32	X X X X X X X X X X X X X X X X X X X	155

<sup>\*1:</sup> Minimum voltage is guaranteed to maximum 0.2% of Vo Rated.

\*2: Minimum voltage is guaranteed to maximum 0.4% of lo Rated.

\*3: At maximum output power.

\*4: 85–132Vac or 170–265Vac, constant load.

\*5: From No-load to Full-load, constant input voltage.

\*6: For load voltage change, equal to the unit voltage rating, constant input voltage.

\*8: Time for the output voltage to recover within 0.5% of its rated for a load change 10–90% of rated output, Output set-point:10–100%.

\*9: For 6V-300V models: measured with JEITA RC-9131A 1:1 probe. For 600V model: measured with 10:1 probe

Accuracy -Values have been calculated at Vo Rated & Io Rated

# General Specifications Genesys™ 750W/1500W

#### 2.1 INPUT CHARACTERISTICS

4 1 1 (6 (7.4)	0= 00=1/ // // /= 001					
1. Input voltage/freq. (*1)	85~265Vac continuous, 47~63F	85~265Vac continuous, 47~63Hz, single phase				
2. Power Factor	0.99 @100/200Vac, rated output	ut power.				
3. EN61000-3-2,3 compliance	Complies with EN61000-3-2 cla	ass A and EN61000-3-3 at 20~100% output power.				
4. Input current 100/200Vac	<b>750W</b> :10.5A / 5A,	1500W :21A / 11A				
5. Inrush current 100/200Vac	750W :Less than 25A,	<b>1500W</b> :Less than 50A				
6. Hold-up time	More than 20mS, 100Vac, at 1	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

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 abouve 2000m, Non operating: 40000ft (12000m).

#### 2.4 EMC

1.Applicable Standards:	
2.ESD	IEC1000-4-2. Air-disch8KV, contact disch4KV
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

CE Mark, UL60950,EN60950 listed. Vout<60V:Output is SELV, IEEE/Isolated analog are SELV.
60 <vout<400v: analog="" are="" hazardous,="" ieee="" is="" isolated="" output="" selv.<="" td=""></vout<400v:>
400 <vout<600v:output analog="" are="" hazardous,="" ieee="" is="" isolated="" not="" selv.<="" td=""></vout<600v:output>
Vout<60V models :Input-Outputs (SELV): 3.0KVrms 1min, Input-Ground: 2.0KVrms 1min.
60 <vout<600v 1min,="" 1min.<="" 2.5kvrms="" 3kvrms="" input-haz.="" input-selv:="" models:="" output:="" td=""></vout<600v>
Hazardous OutputSELV: 1.9KVrms 1min, Hazardous Output-Ground:1.9KVrms 1min.
Input-Ground: 2KVrms 1min.
More than 100Mohm at 25°C , 70% RH, 500Vdc

#### 2.6 MECHANICAL CONSTRUCTION

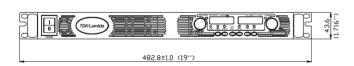
1. Cooling	Forced air flow: from front to rear. No ventilation holes at the top or bottom of the chassis; Variable fan speed.
2. Dimensions (WxHxD)	W: 422.8mm, H: 43.6mm, D: 432.8mm (excluding connectors, encoders, handles, etc.)
3. Weight	<b>750W</b> : 7Kg (15 Lbs) <b>1500W</b> : 8.5Kg (18 Lbs)
4. AC 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

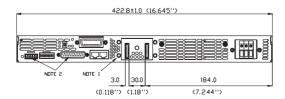
#### 2.7 RELIABILITY SPECS

1. Warranty	5 years.

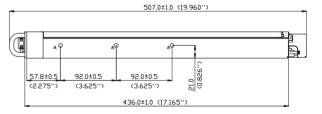
<sup>\*1:</sup> For cases where conformance to various safety standards (UL, IEC etc.) is required, to be described as 100-240Vac (50/60Hz). All specifications subject to change without notice.

## Outline Drawing Genesys™ 750W/1500W Units









#### NOTE

- 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

# 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.





Program Current

Measure Current

Current Foldback shutdown



P/N: IEEE

# **Programming Options (Factory installed)**

## **Digital Programming via IEEE Interface**

- 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

## **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

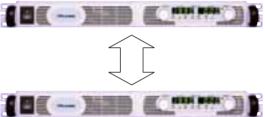
Power supply Voltage and Current Programming Accuracy ±1% Power supply Voltage and Current Monitoring Accuracy ±1.5%

• Current Programming with 4-20mA signal. P/N: IS420

Power supply Voltage and Current Programming Accuracy ±1% Power supply Voltage and Current Monitoring Accuracy ±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

**GEN** 600 2.6

Factory Options

Series Output Name Voltage

Output Current (0~600V) (0~2.6A) Option: IEEE IS510 IS420

LAN

AC Cable option is 750W only

Region: E - Europe

GB - United Kingdom

J - Japan I - Middle East U - North America

## Models 750/1500W

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

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

#### P/N

**IEEE** IS510 IS420 LAN

## AC Cords sets (750W only)

Region	Europe	United Kingdom	Japan	Middle East	North America
Output Power	750W	750W	750W	750W	750W
AC Cords	10A/250Vac L=2m	10A/250Vac L=2m	13A/125Vac L=2m	10A/250Vac L=2m	13A/125Vac L=2m
Wall Plug	INT'L 7/VII	BS1363		SI-32	NEMA 5-15P
Power Supply	IEC320-C13	IEC320-C13	IEC320-C13	IEC320-C13	IEC320-C13
Connector					
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 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	GEN/485-9	GEN/232-9	GEN/232-25

#### 2. Serial link cable\*

Daisy-chain up to 31 Genesys<sup>™</sup> power supplies.

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

<sup>\*</sup> Included with power supply

# **Genesys**<sup>TM</sup>

Programmable DC Power Supplies
2.4KW in 1U
Built in RS-232 & RS-485 Interface
Advanced Parallel Standard

Optional Interfaces:

LXI Compliant LAN
IEEE488.2 SCPI (GPIB)
Isolated Analog Programming



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 2.4kW in 1U
- Wide Range of popular worldwide AC inputs, 1ø (230VAC) & 3ø (208VAC)
- Active Power Factor Correction (Single-Phase & Three-Phase AC Input)
- Output Voltage up to 600V, Current up to 300A
- 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

- 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.

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.

Higher power systems can be configured with up to four 2.4kW modules. Each module is 1U with zero space between them (zero stack).

Flexible configuration is provided by the complete Genesys<sup>TM</sup> Family: 1U 750W Half-Rack, 1U 750W and 1500W Full-Rack, 2U 3.3kW & 5kW. All are identical in Front Panel, Rear Panel Analog, and all Digital Interface Commands. A wide variety of outputs allows testing of many different devices.

**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 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
- 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 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.

## Genesus TM 2 4kW Specifications

1.0 MODEL		GEN	8-300	10-240	16-150	20-120	30-80	40-60	60-40	80-30	100-24	150-16	300-8	600-4
1.Rated output voltage(*1)		V	8	10	16	20	30	40	60	80	100	150	300	600
2.Rated Output Current(*2)		Α	300	240	150	120	80	60	40	30	24	16	8	4
3.Rated Output Power		W	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400
4.Development Priority			Α	С	В	С	В	В	Α	С	С	Α	В	Α
1.1 CONSTANT VOLTAGE MODI	E													
1.Max.line regulation (0.01% of r		l mV	2.8	3	3.6	4	5	6	8	10	12	17	32	62
2.Max load regulation (0.01% or		mV	6.2	6.5	7.4	8	9.5	11	14	17	20	27.5	50	95
3.Ripple and noise p-p 20MHz (*		mV	60	60	60	60	60	60	60	80	80	100	150	300
4.Ripple r.m.s 5Hz~1MHz	0)	mV	8	8	8	8	8	8	8	8	8	25	35	75
5.Remote sense compensation/v	wire	V	2	2	2	2	5	5	5	5	5	5	5	5
6.Temp. coefficient	MIC	PPM/°C		100PPM/°C of rated output voltage,following 30 minutes warm-up										
7.Temp. stability					t over 8hrs					nstant line	, load & ter	np.		
8.Warm-up drift			Less tha	n 0.05% of	rated outp	ut voltage+	2mV over	30 minutes	following	ower On.	·	•		
9.Up-prog. response time, 0~Vo	Rated (*9)	mS	15mS			30mS					60mS		100	mS
10.Down-prog response time	Full-load (*9)	mS	10			30	)				80			00
	No-load (*10)	mS	500	600	700	800	900	1000	1100	1200	1500	2500	30	000
11.Transient response time	( 10)	mS	Time for	output volt	age to reco	ver within C	).5% of its					ated output		
·			current. C	Output set-	point: 10-10	00%, local s	sense.			_				
			Less than	1 1mSec to	r models u	p to and inc	cluding 100	UV. 2msec	for models	above 10	0V			
1.2 CONSTANT CURRENT MOD	E													
1.Max.line regulation (0.01% of l		mA	32	26	17	14	10	8	6	5	4.4	3.6	2.8	2.4
2.Max.load regulation (0.02% of		mA	65	53	35	29	21	17	13	11	9.8	8.2	6.6	5.8
3.Ripple r.m.s 5Hz~1MHz. (*12)		mA	1200	960	600	480	220	120	70	50	40	30	15	7
4.Temp. coefficient		PPM/°C			ated output									
5.Temp. stability			0.05% of rated lout over 8hrs. interval following 30minutes warm-up. Constant line, load & temperature.  8V-20V models: Less than ±0.5% of rated output current over 30 minutes following power On.											
6.Warm-up drift					ess than ±0 Less than									
											01			
1.3 PROTECTIVE FUNCTIONS														
1. OCP			0~105%	Constant (	Current									
2. OCP Foldback			Output s	hut down v	vhen power	supply cha	ange from	CV to CC.	User selec	table.				
3. OVP type			Inverter shut-down, manual reset by AC input recycle or by OUT button or by communication port command.											
4. OVP trip point			0.5~10V   0.5~12V   1~19V   1~24V   2~36V   2~44V   5~66V   5~88V   5~110V   5~165V   5~330V   5~660V    Preset by front panel or communication port. Prevents from adjusting Vout below limit.											
<ol><li>Output Under Voltage Limit</li></ol>							ort. Preve	nts from a	djusting Vo	ut below lin	mit.			
6. Over Temp. Protection			User sel	ectable , la	itched or no	n-latched.								
1.4 ANALOG PROGRAMMING A	ND MONITORING													
1.Vout Voltage Programming			0~100%,	0~5V or 0	~10V, user	select. Acc	curacy and	l linearity:±	0.5% of rat	ed Vout.				
2.lout Voltage Programming (*13	3)		0~100%,	0~5V or 0	~10V, user	select. Acc	curacy and	l linearity:±	1% of rated	l lout.				
3.Vout Resistor Programming			0~100%, 0~5/10Kohm full scale,user select.,Accuracy and linearity: ±1% of rated Vout.											
4.lout Resistor Programming (*13	3)		0~100%, 0~5/10Kohm full scale,user select. Accuracy and linearity:±1.5% of rated lout.											
5.On/Off control (rear panel)			By electrical. Voltage: 0~0.6V/2~15V,or dry contact ,user selectable logic.											
6.Output Current monitor (*13)					curacy:±1%									
7.Output Voltage monitor			0~5V or 0~10V ,Accuracy:±1% ,user selectable.											
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 voltage: 30V, maximum sink current: 10mA													
10. Enable/Disable				Dry contact. Open:off , Short: on. Max. voltage at Enable/Disable in: 6V.										
11. Local/Remote analog control  By electrical signal or Open/Short: 0~0.6V or short: Remote, 2~15V or open: Local.  12. Local/Remote analog control Indicator  Open collector, Local: Off, Remote: On. Maximum voltage: 30V, maximum sink current: 10mA.														
12. Local/Remote analog control	Indicator		Open co	llector, Loc	al: Off, Rer	note: On. N	/laximum \	oltage: 30'	V, maximur	n sink curr	ent: 10mA.			
1.5 FRONT PANEL														
1.Control functions	<u> </u>				djust by se			rse and fin	e adjustme	nt selectal	ble).			
			OVP/UV	L manual a	adjust by Vo	olt. Adjust e	ncoder.							
					off, Re-start						to local co	ntrol.		
					y Voltage (			coder. Num	ber of addr	esses:31.				
			Do-ctart	madaa (a)	tomotic roc	tart aafa n	anda)							

1.Control functions	Vout/ lout manual adjust by separate encoders (coarse and fine adjustment selectable).
	OVP/UVL manual adjust by Volt. Adjust encoder.
	On/Off, Output on/off, Re-start modes (auto, safe), Foldback control (CV to CC), Go to local control.
	Address selection by Voltage (or current) adjust encoder. Number of addresses:31.
	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 count.
	Current: 4 digits, Accuracy: 0.5% of rated output current ±1 count.
3.Indications	Voltage, Current, Alarm, Fine, Preview, Foldback, Local, Output On, Front Panel Lock, CV/CC.

1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Interface

Model	V	8	10	16	20	30	40	60	80	100	150	300	600
1. Remote Voltage Programming (16 bit)													
Resolution (0.012% of Vo Rated)	mV	0.96	1.2	1.92	2.4	3.6	4.8	7.2	9.6	12	18	36	72
Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output)	mV	8	10	16	20	30	40	60	80	100	150	300	600
2. Remote Current Programming (16 bit)													
Resolution (0.012% of lo Rated)	mA	36	28.8	18	14.4	9.6	7.2	4.8	3.6	2.88	1.92	0.96	0.48
Accuracy (0.2% of lo Rated+0.1% of lo Actual Output) (*13)	mA	900	720	450	360	240	180	120	90	72	48	24	12
3. Readback Voltage													
Resolution (0.012% of Vo Rated)	mV	0.96	1.2	1.92	2.4	3.6	4.8	7.2	9.6	12	18	36	72
Accuracy (0.1%Vo Rated+0.1% of Vo Actual Output)	mV	16	20	32	40	60	80	120	160	200	300	600	1200
4. Readback Current													
Resolution (0.012% of lo Rated )	mA	36	28.8	18	14.4	9.6	7.2	4.8	3.6	2.88	1.92	0.96	0.48
Accuracy (0.3% of lo Rated+0.1% of lo Actual Output) (*13)	mA	1200	960	600	480	320	240	160	120	96	64	32	16
5. OVP/UVL Programming													
Resolution (0.1% of Vo Rated)	mV	8	10	16	20	30	40	60	80	100	150	300	600

160

200

100

- \*1: 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.

  4: 3-Phase 208V models: At 208Vac input voltage. With rated output power.

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

- \*6: 3-Phase 208V models: 170~265Vac, constant load.
- T: From No-Load to Full-Load, constant input voltage. Maximum drop in Remote Sense.

  R: For 8V-300V models: Measured with JEITA RC-9131A (1:1) probe. For 600V model: Measured with 10:1 probe.
- \*9: From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated, resistive load. \*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.

600

\*12: For 8V-16V models the ripple is measured from 2V to rated output voltage and rated output current. For other models, the ripple is measured at 10~100% of rated output voltage and rated output current.

800

1000

1500

3000

6000

\*13: The Constant Current programming readback and monitoring accuracy does not include the warm-up and Load regulation thermal drift.

Accuracy (1% of Vo Rated)

# General Specifications Genesys™ 2.4kW

2.1 INPUT CHARACTERISTICS			8-300	10-240	16-150	20-120	30-80	40-60	60-40	80-30	100-24	150-16	300-8	600-4
1. Input voltage/freq. (		Single Ph	ase,230V r	nodels: 170	0~265Vac,	47~63Hz								
			3-Phase,	208V mode	els: 170~26	5Vac, 47~6	3Hz							
2. Maximum Input	Single Phase,230V models:		17	17	17	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3
current at 100% load	3-Phase, 208V models:	Α	10.5	10.5	10.5	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
3. Power Factor (Typ)			Single Ph	ase models	: 0.99@23	0Vac, rated	output pov	wer. 3-Phas	se models:	0.94@208	Vac, rated of	output powe	er.	
4. Efficiency (*4)	4. Efficiency (*4)		84	84	84	86	86	88	88	88	88	88	88	88
5. Inrush Current (*5)		Α	Single-Phase and 3-Phase 208V models: Less than 50A											
6. Hold-up time (Typ)		mS	10mSec f	0mSec for Single-Phase and 3-phase 208V models. Rated output power.										

#### 2.2 AUXILIARY OUTPUT

1. 15V output	15V±5%, 0.2A Max load, Ripple & Noise 50mVp-p. Referenced internally to the negative output potential.
2. 5V output	5V±5%, 0.2A Max load, Ripple & Noise 50mVp-p. Referenced internally to IF_com potential.

#### 2.3 POWER SUPPLY CONFIGURATION

Parallel Operation	Up to 4 identical units in master/slave mode
2. Series Operation	Up to 2 identical units. with external diodes. 600V Max to Chassis ground

#### 2.4 ENVIRONMENTAL CONDITIONS

Operating temp	0~50°C, 100% load.
2. Storage temp	-20~85°C
3. Operating humidity	20~90% RH (non-condensing).
4. Storage humidity	10~95% RH (non-condensing).
5. Vibration	MIL-810F, method 514.5 , The EUT is fixed to the vibrating surface.
6. Shock	Less than 20G , half sine , 11mSec. Unit is unpacked.
7. Altitude	Operating: 10000ft (3000m), Derate output current by 2%/100m above 2000m, Alternatively, derate maximum ambient temp. by 1°C/100m above 2000m. Non operating: 40000ft (12000m).
8. RoHS Compliance	Complies with the requirements of RoHS directive.

#### 2.5 EMC

2.5 LINO	
1. Applicable Standards:	
2.ESD	IEC1000-4-2. Air-disch8KV, contact disch4KV
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. Magnetic field immunity	EN61000-4-8, 1A/m
8. Voltage dips	EN61000-4-11
9. Conducted emission	EN55022A, FCC part 15-A, VCCI-A.
10. Radiated emission	EN55022A, FCC part 15-A, VCCI-A.

#### 2.6 SAFETY

2.6 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=""></vout≤400v:>
	400 <vout≤600v:output analog="" are="" hazardous,="" ieee="" is="" isolated="" not="" selv.<="" 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=""></vout<100v>
	Hazardous OutputSELV: 1900VDC 1min, Hazardous Output-Ground:1200VDC 1min. Input-Ground: 2828VDC 1min.
	100 <vouts600v 1min,="" 1min.<="" 4000vdc="" 4242vdc="" input-haz.="" input-selv:="" models:="" output:="" td=""></vouts600v>
	Hazardous OutputSELV: 3550VDC 1min. Hazardous Output-Ground:2670VDC 1min. Input-Ground: 2828VDC 1min.
3.Insulation resistance	More than 100Mohm at 25°C , 70% RH.

#### 2.7 MECHANICAL CONSTRUCTION

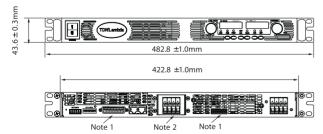
1. Cooling	Forced air flow: from front to rear. No ventilation holes at the top or bottom of the chassis; Variable fan speed.						
2. Dimensions (WxHxD)	W: 423mm, H: 43.6mm, D: 432.8mm (excluding connectors, encoders, handles, etc.)						
3. Weight	kg.						
4. AC Input connector (with Protective Cover)	Single Phase,230V models, wire clamp connector, Phoenix P/N: FRONT-4-H-7.62, with Strain relief.						
	3-Phase, 208V models, wire clamp connector, Phoenix P/N: FRONT-4-H-7.62, with Strain relief.						
5.Output connectors	8V to 100V models: Bus-bars (hole Ø 8.5mm ). 150V to 600V models: wire clamp connector, Phoenix P/N: FRONT-4-H-7.62						
	Auxiliary autput Header: IMC 1.5/7-G-3.81, Plug: IMC 1.5/7-ST-3.81 (Phoenix Contact).						

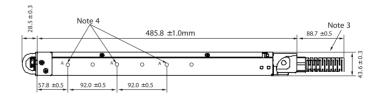
#### 2.8 RELIABILITY SPECS

<ol> <li>Warrant</li> </ol>		
		vears.

All specifications subject to change without notice.

## Outline Drawing Genesys™ 2.4kW Units





#### NOTE

- 1.Mating plug supplied with power supply.
- 2.Bus-bars for 8V to 100V models. See detail.
- 3. AC cable strain relief supplied with power supply.
- 4. Chassis slides mounting holes #10-32 marked "A". GENERAL DEVICES P/N: CC3001-00-S160 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

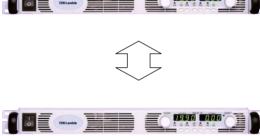
Standard Serial Interface allows daisy-chain control of up to 31 power supplies on the same communication bus with built-in RS-232 & RS-485 Interface.





 Program Current Measure Current

Current Foldback shutdown



P/N: IEEE

P/N: IS510

# **Programming Options (Factory installed)**

#### **Digital Programming via IEEE Interface**

- 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

#### **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 ±1% Power supply Voltage and Current Monitoring Accuracy ±1.5%

 Current Programming with 4-20mA signal. P/N: IS420

Power supply Voltage and Current Programming Accuracy ±1% Power supply Voltage and Current Monitoring Accuracy ±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**

<u>GEN</u> 8 - 300

(0~8V)

Series Output Name Voltage

Output Current (0~300A) Factory Options:
Option: IEEE
IS510
IS420

LAN

P/N

**IEEE** 

IS510

**IS420** 

LAN

Factory AC Input Options:

1P230 (Single Phase 170~265VAC) 3P208 (Three Phase 170~265VAC)

## Models 2.4kW

	Output	Output	Output
Model	Voltage	Current	Power
	VDC	(A)	(W)
GEN 8-300	0~8V	0~300	2400
GEN 10-240	0~10V	0~240	2400
GEN 16-150	0~15V	0~150	2400
GEN 20-120	0~20V	0~120	2400
GEN 30-80	0~30V	0~80	2400
GEN 40-60	0~40V	0~60	2400

	Output	Output	Output
Model	Voltage	Current	Power
	VDC	(A)	(W)
GEN 60-40	0~60V	0~40	2400
GEN 80-30	0~80V	0~30	2400
GEN 100-24	0~100V	0~24	2400
GEN 150-16	0~150V	0~16	2400
GEN 300-8	0~300V	0~8	2400
GEN 600-4	0~600V	0~4	2400

**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)

## **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 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	GEN/485-9	GEN/232-9	GEN/232-25		

#### 2. Serial link cable\*

Daisy-chain up to 31 Genesys<sup>™</sup> power supplies.

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

<sup>\*</sup> Included with power supply

Also available, Genesys™ 1U Half Rack 750W 1U full Rack 750W/1500W/2400W 2U full Rack 3300W/5000W

# Genesys™

Programmable DC Power Supplies 3.3KW in 2U Built in RS-232 & RS-485 Interface Advanced Parallel Standard

Optional Interfaces:
IEEE488.2 SCPI (GPIB)
Isolated Analog Programming
L∭ Compliant LAN



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 3.3kW in 2U
- Wide Range of popular worldwide AC inputs, 1ø (230VAC) & 3ø (208VAC, 400VAC)
- Active Power Factor Correction (Single-Phase & Three-Phase AC Input)
- Output Voltage up to 600V, Current up to 400A
- 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

- LabView<sup>®</sup> and LabWindows<sup>®</sup> 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.

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.

Higher power systems can be configured with up to four 3.3kW modules. Each module is 2U with zero space between them (zero stack).

Flexible configuration is provided by the complete Genesys™ Family: 1U 750W Half-Rack, 1U 750W and 1500W 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.

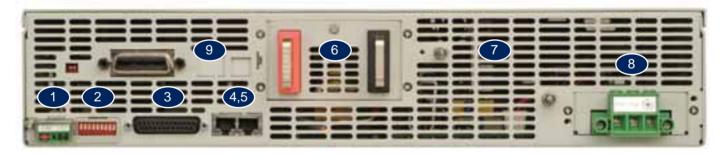
## Front Panel Description



- 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 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
- 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-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 & 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 Interface or LAN Interface.

# Genesys TM 3.3kW Specifications

1.0 MODEL	GEN	8-400	10-330	15-220	20-165	30-110	40-85	60-55	80-42	100-33	150-22	300-11	600-5.
1.Rated output voltage(*1)	V	8	10	15	20	30	40	60	80	100	150	300	600
2.Rated Output Current(*2)	A	400	330	220	165	110	85	55	42	33	22	11	5.5
3.Rated Output Power	W	3200	3300	3300	3300	3300	3400	3300	3360	3300	3300	3300	3300
.1 CONSTANT VOLTAGE MODE													
1.Max.line regulation ( 0.01% of rated Vo+ 2mV )(*6)	mV	2.8	3	3.5	4	5	6	8	10	12	17	32	62
2.Max load regulation ( 0.015% of rated Vo+5mV )(*7)	mV	6.2	6.5	7.25	8	9.5	11	14	17	20	27.5	50	95
3.Ripple and noise p-p 20MHz (*8)	mV	60	60	60	60	60	60	60	80	80	100	150	500
4.Ripple r.m.s 5Hz~1MHz 5.Remote sense compensation/wire	mV V	8 2	8 2	8	2	8	8	8	8	8	25	35	120
	PPM/°C		/°C of rated	2 output vol		ing 30 mir	5 nutes warm	-up	5	5	5	5	5
7.Temp. stability	111111111111111111111111111111111111111		f rated Vou						nstant line	, load & ter	np.		
8.Warm-up drift		Less tha	n 0.05% of	rated outp	ut voltage+	-2mV over	30 minutes	following	power On.				
9.Up-prog. response time, 0~Vo Rated (*9)	mS				0					150			250
10.Down-prog response time Full-load (*9)	mS	20	000	100	1 000	200	160	4400	4000		00	1 0500	500
No-load (*10) 11.Transient response time	mS mS	500	600 output volta	700	800	900	1000	1100	1200	1500	2000	3500	4000
TT. Transient response time	1110	current. (	Output set-p	oint: 10-10	00%, local	sense.					ateu outpui	·	
A CONCTANT CURRENT MORE		Less thai	n 1mSec fo	models u	o to and in	cluaing 10	UV. 2msec	for models	above 10	UV			
1.Max.line regulation (0.01% of rated lo+ 2mA)(*6)	mA	42	35	24	18.5	13	10.5	7.5	6.2	5.3	4.2	3.1	2.6
2.Max.load regulation (0.02% of rated lo+2mA)(*6)	mA mA	85	71	49	38	27	22	16	13.4	11.6	9.4	7.2	6.1
3.Ripple r.m.s 5Hz~1MHz . (*12)	mA	1300	660	440	300	250	200	100	120	90	60	50	10
4.Load regulation thermal drift		Less tha	n 0.1% of r	ated outpu	t current o	ver 30 min	utes followi	ng load ch					
	PPM/°C		/°C from ra										
6.Temp. stability			f rated lout					<u> </u>			perature.		
7.Warm-up drift			models: Les								n n		
1.3 PROTECTIVE FUNCTIONS		1 00 v ~ 00 l	ov models:	Less man	U.ZJ70 UI [	αισα σαιρί	n curreril 0	vei ou iiini	uces IUIIUW	ing power (	<b>∪</b> 11.		
1. OCP		0~105%	Constant C	Current									
2. OCP Foldback			hut down w		supply ch	ange from	CV to CC.	User selec	table.				
3. OVP type			shut-down,	manual res						unication p	ort comma	nd.	
4. OVP trip point			0.5~12V	1~18V	1~24V	2~36V	2~44V	5~66V	5~88V	5~110V	5~165V	5~330V	5~660
Output Under Voltage Limit     Over Temp. Protection			y front pane ectable, la			ort. Preve	nts from ac	djusting Vo	ut below lii	mit.			
· · · · · · · · · · · · · · · · · · ·		0301301	ectable , la	cried of fic	ni-iatorica.								
.4 ANALOG PROGRAMMING AND MONITORING 1.Vout Voltage Programming		L n. 100%	, 0~5V or 0-	10\/ ucor	soloct Ac	curacy and	Llinoarity	1 5% of rat	od Vout				
2.lout Voltage Programming (*13)			, 0~5V or 0-										
3.Vout Resistor Programming			0~5/10Kol							out.			
4.lout Resistor Programming (*13)			, 0~5/10Kol							out.			
5.On/Off control (rear panel)			rical. Voltag				user selec	table logic					
6.Output Current monitor (*13)			0~10V , Ac										
7.Output Voltage monitor 8.Power Supply OK signal			0~10V ,Acc (4~5V) -Ol										
9. CV/CC Indicator			high (4~5V)					k current:	10mA.				
10. Enable/Disable			act. Open:c										
11. Local/Remote analog control			rical signal o						n: Local.				
12. Local/Remote analog control Indicator			llector, Loc							ent: 10mA.			
1.5 FRONT PANEL													
1.Control functions			ıt manual a				rse and fin	e adjustme	nt selecta	ble).			
			L manual a										
			Output on/o								ntrol.		
			selection b modes (au				coder. Num	per of addi	esses:31.				
			e selection:				200.						
2.Display			4 digits, Ad					ount.					
		Current:	4 digits, Ac	curacy: 0.5	% of rated	l output cu	rrent ±1 cou	unt.					
3.Indications		Voltage,	Current, Al	arm, Fine,	Preview, F	oldback, L	ocal, Outpu	ıt On, Fron	t Panel Lo	ck, CVCC.			
1.6 Interface RS-232&RS-485 or Option	onal G	PIB / LA	N Inter	face									
Model	V	8	10	15	20	30	40	60	80	100	150	300	600
1. Remote Voltage Programming (16 bit)	\ 1	0.00	4.0	4.0	0.40	0.00	4.00	7.0	0.0	40	40	00	=-
Resolution (0.012% of Vo Rated) Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output)	mV mV	0.96	1.2	1.8	2.40	3.60	4.80	7.2 60	9.6	12	18	36	72
Accuracy (0.0076 vo Rateu+0.00% of vo Actual Output)	mv		10	15	20	30	40	UØ	80	100	150	300	600
2. Remote Current Programming (16 bit)													
Resolution (0.012% of lo Rated)	mA	48	39.6	26.4	19.8	13.2	10.2	6.6	5.0	4.0	2.6	1.3	0.7
Accuracy (0.2% of lo Rated+0.1% of lo Actual Output) (*13)	mA	1200	990	660	495	330	255	165	126	99	66	33	16.5
3. Readback Voltage													
Resolution (0.012% of Vo Rated)	mV	0.96	1.2	1.8	2.40	3.60	4.80	7.2	9.6	12	18	36	72
Accuracy (0.1%Vo Rated+0.1% of Vo Actual Output)	mV	16	20	30	40	60	80	120	160	200	300	600	1200
4. Readback Current													
Resolution (0.012% of lo Rated )	mA	48	39.6	26.4	19.8	13.2	10.2	6.6	5.0	4.0	2.6	1.3	0.7
Accuracy (0.3% of lo Rated+0.1% of lo Actual Output) (*13		1600	1320	880	660	440	340	220	168	132	88	44	22
, , , , , , , , , , , , , , , , , , , ,													
5. OVP/UVL Programming Poscultion (0.1% of Vo Potod)	m\/	0	10	15	20	20	40	60	20	100	150	300	600
5. OVP/UVL Programming Resolution (0.1% of Vo Rated) Accuracy (1% of Vo Rated)	mV mV	8	10 100	15 150	20 200	30 300	40 400	60 600	80 800	100 1000	150 1500	300 3000	600

- \*1: 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 single phase and 3-Phase 208V models, and 380~415Vac (50/60Hz) for 3-Phase 400V models.
- \*4: Single-Phase and 3-Phase 208V models: At 208Vac input voltage, 3-Phase 400V: At 380Vac input voltage. With rated output power.

  \*5: Not including EMI filter inrush current, less than 0.2mSec.

  \*6: Single-Phase and 3-Phase 208V models: 170~265Vac, constant load. 3-Phase 400V
- models: 342~460Vac, constant load.
- \*7: From No-Load to Full-Load, constant input voltage. Maximum drop in Remote Sense.
- \*8: For 8V~300V models: Measured with JEITA RC-9131A (1:1) probe. For 600V model: Measured with 10:1 probe.
- \*9: From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated, resistive load. \*10:From 90% to 10% of Rated Output Voltage.
- \*11: For load voltage change, equal to the unit voltage rating, constant input voltage.
- \*12: For 8V-15V models the ripple is measured from 2V to rated output voltage and rated output current. For other models, the ripple is measured at 10~100% of rated output voltage and rated output current.
- \*13: The Constant Current programming readback and monitoring accuracy does not include the warm-up and Load regulation thermal drift.

# General Specifications Genesys™ 3.3kW

2.1 INPUT CHARACTERISTICS		GEN	8-400	10-330	15-220	20-165	30-110	40-85	60-55	80-42	100-33	150-22	300-11	600-5.5
1. Input voltage/freq. (*3)		Single Phase,230V models: 170~265Vac, 47~63Hz												
		VAC	3-Phase,	208V mode	els: 170~26	65Vac, 47~	63Hz							
		3-Phase,	3-Phase, 400V models: 342~460Vac, 47~63Hz											
2. Maximum Input current at 100% load	Single Phase,230V models:		24	24	24	24	24	24	23	23	23	23	23	23
	3-Phase, 208V models:	A	15	15	15	15	15	15	14.5	14.5	14.5	14.5	14.5	14.5
at 100 % load	3-Phase, 400V models:		7.5	7.5	7.5	7.5	7.5	7.5	7	7	7	7	7	7
<ol><li>Power Factor (T</li></ol>	¬yp)		Single Ph	Single Phase models: 0.99@230Vac, rated output power. 3-Phase models: 0.94@208/380Vac, rated output power.										
4. Efficiency (*4)	4. Efficiency (*4)		82	84	84	86	86	88	88	88	88	88	88	87
5. Inrush Current (	Single-Phase and 3-Phase 208V models: Less than 50A													
	A	3-Phase	400V mode	ls: Less the	an 20A									
6. Hold-up time (Tr	mS	10mSec	for Single-P	hase and 3	3-phase 20	8V models,	6mSec for	3-Phase 4	00V model	ls. Rated or	utput power	r.		

#### 2.2 POWER SUPPLY CONFIGURATION

Parallel Operation	Up to 4 identical units in master/slave mode
2. Series Operation	Up to 2 identical units, with external diodes, 600V Max to Chassis ground

#### 2.3 ENVIRONMENTAL CONDITIONS

Operating temp	0~50°C, 100% load.
2. Storage temp	-30~85°C
3. Operating humidity	20~90% RH (non-condensing).
4. Storage humidity	10~95% RH (non-condensing).
5. Vibration	MIL-810F, method 514.5, The EUT is fixed to the vibrating surface.
6. Shock	Less than 20G , half sine , 11mSec. Unit is unpacked.
7. Altitude	Operating: 10000ft (3000m), Derate output current by 2%/100m above 2000m, Alternatively, derate maximum ambient temp. by 1°C/100m above 2000m. Non operating: 40000ft (12000m).
8. RoHS Compliance	Complies with the requirements of RoHS directive.

#### 2.4 EMC

Z.4 LIVIC	
1.Applicable Standards:	
2.ESD	IEC1000-4-2. Air-disch8KV, contact disch4KV
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. Magnetic field immunity	EN61000-4-8, 1A/m
8. Voltage dips	EN61000-4-11
9.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=""></vout≤400v:>						
	400 <vout≤600v:output analog="" are="" hazardous,="" ieee="" is="" isolated="" not="" selv.<="" 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=""></vout≤100v>						
	Hazardous OutputSELV: 1900VDC 1min, Hazardous Output-Ground:1200VDC 1min. Input-Ground: 2828VDC 1min.						
	100 <vouts600v 1min,="" 1min.<="" 4000vdc="" 4242vdc="" input-haz.="" input-selv:="" models:="" output:="" td=""></vouts600v>						
	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

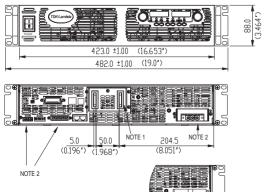
1. Cooling	Forced air flow: from front to rear. No ventilation holes at the top or bottom of the chassis; Variable fan speed.
2. Dimensions (WxHxD)	W: 423mm, H: 88mm, D: 442.5mm (excluding connectors, encoders, handles, etc.)
3. Weight	13 kg.
4. AC Input connector (with Protective Cover)	Single Phase,230V models, Power Combicon PC 6-16/3-GF-10,16 series, with Strain relief.
	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 RELIABILITY SPECS

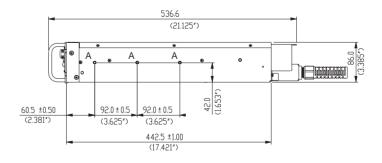
1. Warranty	5 years.
•	

All specifications subject to change without notice.

## Outline Drawing Genesys™ 3.3kW Units



3 Phase Input Connector



## NOTE

- 1. 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.







P/N: IEEE

P/N: IS510

P/N: IS420

# **Programming Options (Factory installed)**

## **Digital Programming via IEEE Interface**

- IEEE 488.2 SCPI Compliant
- Program Voltage
- Measure Voltage
- Over Voltage setting and shutdown
- Error and Status Messages
- New! Multi-Drop

- Program Current
- Measure Current
- Current Foldback shutdown
- Only the Master needs be equipped with IEEE Interface

#### **Isolated Analog Programming**

Four Channels to Program and Monitor Voltage and Current.

Isolation allows operation with floating references in harsh electrical environments.

Allows IEEE Master to control up to 31 slaves over RS-485 daisy-chain

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 ±1% Power supply Voltage and Current Monitoring Accuracy ±1.5%

Current Programming with 4-20mA signal.

Power supply Voltage and Current Programming Accuracy ±1% Power supply Voltage and Current Monitoring Accuracy ±1.5%

LAN Interface

#### **LXI**<sup>™</sup> 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**

**GEN** 400 Factory Options: Factory AC Input Options: Series Output Output Option: IEEE 1P230 (Single Phase 170~265VAC) Name Voltage Current IS510 3P208 (Three Phase 170~265VAC) (0~8V)(0~400A)IS420 3P400 (Three Phase 342~460VAC) LAN

## Models 3.3kW

	Output	Output	Output			
Model	Voltage	Current	Power			
	VDC	(A)	(W)			
GEN 8-400	0~8V	0~400	3200			
GEN 10-330	0~10V	0~330	3300			
GEN 15-220	0~15V	0~220	3300			
GEN 20-165	0~20V	0~165	3300			
GEN 30-110	0~30V	0~110	3300			
GEN 40-85	0~40V	0~85	3400			

	Output	Output	Output			
Model	Voltage	Current	Power			
	VDC	(A)	(W)			
GEN 60-55	0~60V	0~55	3300			
GEN 80-42	0~80V	0~42	3360			
GEN 100-33	0~100V	0~33	3300			
GEN 150-22	0~150V	0~22	3300			
GEN 300-11	0~300V	0~11	3300			
GEN 600-5.5	0~600V	0~5.5	3300			

Factory option P/N

RS-232/RS-485 Interface built-in Standard GPIB Interface IEEE
Voltage Programming Isolated Analog Interface IS510
Current Programming Isolated Analog Interface IS420
LAN Interface (Complies with 

LA™ Class C)

LAN

## **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 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	GEN/485-9	GEN/232-9	GEN/232-25

#### 2. Serial link cable\*

Daisy-chain up to 31 Genesys<sup>™</sup> power supplies.

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

<sup>\*</sup> Included with power supply

Also available, Genesys™
1U full Rack 750W/1500W
& Half Rack 750W

TDK-Lambda | 6

# Genesys™

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

Optional Interfaces:

LXI Compliant LAN

IEEE488.2 SCPI (GPIB)

Isolated Analog Programming



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 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

- LabView<sup>®</sup> and LabWindows<sup>®</sup> 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.

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.

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 Genesys™ 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.

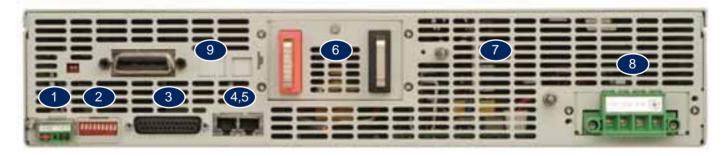
## Front Panel Description



- 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 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
- 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-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: 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 Interface or LAN Interface.

## Genesys ™ 5kW Specifications

1.0 MODEL		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.
1.Rated output voltage(*1)		V	8	10	16	20	30	40	60	80	100	150	300	600
2.Rated Output Current(*2)		Α	600	500	310	250	170	125	85	65	50	34	17	8.5
3.Rated Output Power		W	4800	5000	4960	5000	5100	5000	5100	5200	5000	5100	5100	5100
4.Development Priority			Α	С	В	С	В	В	Α	С	С	Α	В	Α
1.1 CONSTANT VOLTAGE MOD	E		•											
1.Max.line regulation (0.01% of	rated Vo)(*6)	mV	0.8	1.0	1.6	2	3	4	6	8	10	15	30	60
2.Max load regulation (0.015% of		mV	6.2	6.5	7.4	8	9.5	11	14	17	20	27.5	50	95
3.Ripple and noise p-p 20MHz (		mV	75	75	75	75	75	75	75	85	100	120	300	500
4.Ripple r.m.s 5Hz~1MHz	-,	mV	10	10	10	10	10	10	10	12	15	25	35	120
5.Remote sense compensation/	wire	V	2	2	2	2	5	5	5	5	5	5	5	5
6.Temp. coefficient		PPM/°C	100PPM/°C of rated output voltage,following 30 minutes warm-up  0.05% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temp.											
7.Temp. stability											, load & ten	np.		
8.Warm-up drift			Less that	n 0.05% of	rated outp	ut voltage-	-2mV over	30 minutes	s following p	ower On.				
9.Up-prog. response time, 0~Vo	Rated (*9)	mS			30	mS					50mS			100
10.Down-prog response time	Full-load (*9)	mS	15		50			80				00		200
	No-load (*10)	mS	400	500	600	700	800	900	1000	1200	1500	2000	2500	3000
11.Transient response time		mS	current. C	Output set-	point: 10-10	00%, local	sense.		ut for a load			ated output	t	
1.2 CONSTANT CURRENT MOD	DΕ													
1.Max.line regulation (0.05% of	lo rated)(*6)	mA	300	250	155	125	85	62.5	42.5	32.5	25	17	8.5	4.25
2.Max.load regulation (0.1% of lo rated)(*11)		mA	600	500	310	250	170	125	58	65	50	34	17	8.5
		mA	1950	1800	1400	1000	460	300	150	120	100	90	30	15
4.Temp. coefficient		PPM/°C												
5.Temp. stability			0.05% of rated lout over 8hrs. interval following 30minutes warm-up. Constant line, load & temperature.											
s.Warm-up drift			8V~16V models: Less than ±0.5% of rated output current over 30 minutes following power On.  20V~600V models: Less than ±0.25% of rated output current over 30 minutes following power On.											
											J. J			
1.3 PROTECTIVE FUNCTIONS														
1. OCP				Constant (										
2. OCP Foldback									User selec					
3. OVP type			Inverter shut-down, manual reset by AC input recycle or by OUT button or by communication port command.											
4. OVP trip point			0.5-10V   0.5-12V   1-19V   1-24V   2-36V   2-44.1V   5-66.15V   5-88.2V   5-110.25V   5-165.3V   5-330.7V   5-661.5V											
5. Output Under Voltage Limit			Preset by front panel or communication port. Prevents from adjusting Vout below limit.  User selectable, latched or non-latched.											
6. Over Temp. Protection			User sei	ectable , la	tcnea or no	n-iatched.								
1.4 ANALOG PROGRAMMING A	AND MONITORING													
1.Vout Voltage Programming									0.5% of rate					
2.lout Voltage Programming (*13	3)								1% of rated					
3.Vout Resistor Programming	0)								earity: ±1%					
4.lout Resistor Programming (*1	3)								earity:±1.5%		out.			
5.On/Off control (rear panel) 6.Output Current monitor (*13)			By electrical. Voltage: 0~0.6V/2~15V,or dry contact ,user selectable logic.											
7.Output Voltage monitor (*13)			0~5V or 0~10V , Accuracy:±1% , user selectable. 0~5V or 0~10V ,Accuracy:±1% ,user selectable.											
8.Power Supply OK signal					K, 0V-Fail									
CV/CC Indicator									e: 30V, ma:	vimum ein	k current: 1	OmΔ		
10. Enable/Disable					off , Short:					AIIIIUIII SIII	K Guirent. 1	UIIIA		
11. Local/Remote analog control	1								~15V or op	en: Local				
12. Local/Remote analog contro									V, maximun		ent: 10mA			
1.5 FRONT PANEL			37000		,				.,	0411				
1.Control functions			Vout/ Iou	t manual a	diust hv se	narate end	oders (co	arse and fin	e adjustme	nt selectal	hle)			
1.Control fullotions					idjust by Vo			aroo ariu III	o aujustille	in Sciectal	010].			
								Foldback o	ontrol (CV t	o CC) Go	to local co	ntrol		
									ber of addr		10 10001 00			
					tomatic res				0. 0001					
						,	/-							

3.Indications	Voltage, Current, Alarm, Fine, Preview, Foldback, Local, Output On, Front Panel Lock, CV/CC.

Model	V	8	10	16	20	30	40	60	80	100	150	300	600
1. Remote Voltage Programming (16 bit)													
Resolution (0.012% of Vo Rated)	mV	0.96	1.2	1.92	2.4	3.6	4.8	7.2	9.6	12	18	36	72
Accuracy (0.1% of Vo Rated)	mV	8	10	15	20	30	40	60	80	100	150	300	600
2. Remote Current Programming (16 bit)													
Resolution (0.012% of lo Rated)	mΑ	72	60	37.2	30	20.4	15	10.2	7.8	6.0	4.08	2.04	1.02
Accuracy (0.3% of lo Rated+0.1% of lo Actual Output)(*13)	mA	2400	2000	1240	1000	680	500	340	260	200	136	68	34
3. Readback Voltage													
Resolution (0.012% of Vo Rated)	mV	0.96	1.2	1.92	2.40	3.60	4.80	7.2	9.6	12	18	36	72
Accuracy (0.15% of Vo Rated)	mV	12	15	24	30	45	60	90	120	150	225	450	900
4. Readback Current													
Resolution (0.012% of lo Rated )	mA	72	60	37.2	30	20.4	15	10.2	7.8	6.0	4.08	2.04	1.02
Accuracy (0.4% of lo Rated)(*13)	mA	2400	2000	1240	1000	680	500	340	260	200	136	68	34
5. OVP/UVL Programming													
Resolution (0.1% of Vo Rated)	mV	8	10	16	20	30	40	60	80	100	150	300	600
Accuracy (1% of Vo Rated)	mV	80	100	160	200	300	400	600	800	1000	1500	3000	6000

Baud rate selection: 1200,2400,4800,9600 and 19,200.

Voltage: 4 digits , Accuracy: 0.5% of rated output Voltage ±1 count. Current: 4 digits, Accuracy: 0.5% of rated output current ±1 count.

- \*1: 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 models: At 208Vac input voltage, 3-Phase 400V:
- At 380Vac input voltage. With rated output power.
  \*5: Not including EMI filter inrush current, less than 0.2mSec.
- \*6: 3-Phase 208V models: 170~265Vac, constant load. 3-Phase 400V models: 342~460Vac, constant load.

- \*7: From No-Load to Full-Load, constant input voltage. Maximum drop in Remote Sense.
- \*8: For 8V~300V models: Measured with JEITA RC-9131A (1:1) probe. For 600V model: Measured with 10:1 probe.
- "9: From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated, resistive load. 
  \*10:From 90% to 10% of Rated Output Voltage.
- \*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 current. For other models, the ripple is measured at 10~100% of rated output voltage and rated output current.
- \*13: The Constant Current programming readback and monitoring accuracy does not include the warm-up and Load regulation thermal drift.

2.Display

# General Specifications Genesys™ 5kW

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	200Vac, 2	08Vac and	230Vac M	odels : 170	0~265Vrms	, 47~63Hz					
	VAC	3-Phase,	400V mod	els: 342~46	60Vac, 47~	63Hz							
MaximumInput 3-Phase, 170V models:	(A)	21	22	22	22	22	22	22	22	22	22	22	22
currentat 100% load 3-Phase, 342V models:	(^)	10.5	11	11	11	11	11	11	11	11	11	11	11
3. Power Factor (Typ)	3. Power Factor (Typ) 0.94 AT 100% LOAD AND 208V/380V/400V/415V												
4. INRUSH PEAK CURRENT	A	3-Phase 2	200V: 50A,	3-Phase 4	00V: 20A.	Not includi	ng the EMI	filter inrush	current, le	ss than 0.2	nSec.		
5. EFFICIENCY AT 200V AND 380V (A)	%	83	84	84	86	86	88	90	88	88	88	88	88
6. EFFICIENCY AT 170V AND 342V (A)	%	83	84	84	86	86	88	90	88	88	88	88	88
7. HOLD UP TIME (CV MODE)	(CV MODE) mS 5mS Typical												
8. PHASE IMBALANCE	%	≤5%											
9. LEAKAGE CURRENT		LESS TH	AN 3mA										

#### 2.2 POWER SUPPLY CONFIGURATION

Parallel Operation	Up to 4 identical units in master/slave mode
2. Series Operation	Up to 2 identical units. with external diodes. 600V Max to Chassis ground

#### 2.3 ENVIRONMENTAL CONDITIONS

Operating temp	0~50°C, 100% load.		
2. Storage temp	-20~85°C		
3. Operating humidity 20–90% RH (non-condensing).			
Storage humidity	10~95% RH (non-condensing).		
5. Vibration	MIL-810F, method 514.5, The EUT is fixed to the vibrating surface.		
6. Shock Less than 20G , half sine , 11mSec. Unit is unpacked.			
7. Altitude Operating: 10000ft (3000m), Derate output current by 2%/100m above 2000m, Non operating: 40000ft (12000m).			
8. RoHS Compliance Complies with the requirements of RoHS directive.			

#### 2.4 EMC

1.Applicable Standards:	
2.ESD	IEC1000-4-2. Air-disch8KV, contact disch4KV
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.Magnetic field immunity	EN61000-4-8, 1A/m
8. Voltage dips	EN61000-4-11
9.Conducted emission	EN55022A, FCC part 15-A, VCCI-A.
10. Radiated emission	EN55022A, FCC part 15-A, VCCI-A.

#### 2.5 SAFETY

D,EN60950 listed. Vout≤40V:Output is SELV , IEEE/Isolated analog are SELV.  tput is hazardous, IEEE/Isolated analog are SELV.				
tout is hazardous. IEEE/Isolated analog are SELV.				
utput is hazardous, IEEE/Isolated analog are not SELV.				
Input-Outputs (SELV): 4242VDC 1min, Input-Ground: 2828VDC 1min.				
dels: Input-Haz. Output: 2600VDC 1min, Input-SELV: 4242VDC 1min.				
-SELV: 1900VDC 1min, Hazardous Output-Ground:1200VDC 1min. Input-Ground: 2828VDC 1min.				
odels: Input-Haz. Output: 4000VDC 1min, Input-SELV: 4242VDC 1min.				
-SELV: 3550VDC 1min. Hazardous Output-Ground:2670VDC 1min. Input-Ground: 2828VDC 1min.				
More than 100Mohm at 25°C , 70% RH.				

#### 2.6 MECHANICAL CONSTRUCTION

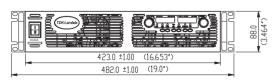
1. Cooling	Forced air flow: from front to rear. No ventilation holes at the top or bottom of the chassis; Variable fan speed.
2. Dimensions (WxHxD)	W: 423mm, H: 88mm, D: 442.5mm (excluding connectors, encoders, handles, etc.)
3. Weight	16 kg.
4. AC Input connector (with Protective Cover)	3-Phase, 208V & 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

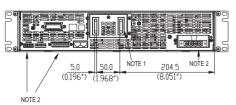
#### 2.7 RELIABILITY SPECS

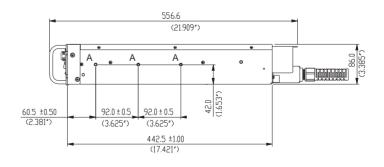
1. Warranty	5 years.

All specifications subject to change without notice.

## Outline Drawing Genesys™ 5kW Units







#### **NOTE**

- 1. 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.





 Program Current Measure Current

Current Foldback shutdown



P/N: IEEE

## Programming Options (Factory installed)

#### **Digital Programming via IEEE Interface**

- 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

#### **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. P/N: IS420

Power supply Voltage and Current Programming Accuracy ±1% Power supply Voltage and Current Monitoring Accuracy ±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

**GEN** 600 Factory Options: Factory AC Input Options: Series Output Output Option: IEEE 3P208 (Three Phase 170~265VAC) Name Voltage Current IS510 3P400 (Three Phase 342~460VAC) (0~8V)(0~600A) IS420 LAN

## Models 5kW

	Output	Output	Output
Model	Voltage	Current	Power
	VDC	(A)	(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

	Output	Output	Output
Model	Voltage	Current	Power
	VDC	(A)	(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 option P/N

RS-232/RS-485 Interface built-in Standard GPIB Interface IEEE
Voltage Programming Isolated Analog Interface IS510
Current Programming Isolated Analog Interface IS420
LAN Interface (Complies with LXI Class C) LAN

## **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 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	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
Γ	RS-485	EIA/TIA-568A (RJ-45)	Shield Ground L=50cm	GEN/RJ45

<sup>\*</sup> Included with power supply

Also available, Genesys™
1U Half Rack 750W
1U full Rack 750W/1500W
2U full Rack 3300W





Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

#### Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



**«JONHON»** (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«**FORSTAR**» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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