New From TDK-Lambda 2400W in 1U

# Genesys

**Programmable DC Power Supplies** 2.4kW in 1U Built in RS-232 & RS-485 Interface Advanced Parallel Standard **New: Auxiliary Outputs 5V & 15V** New: RoHS Compliant

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



Genesys™ Family

GEN H 750W Half Rack

GEN 1U 750/1500W/2400W Full Rack

GEN 2U 3.3/5kW

**GEN 3U 10/15kW** 

TDK·Lambda

www.us.tdk-lambda.com/hp

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:

- New: Auxiliary Outputs, 5V, 0.2A; 15V, 0.2A For Increased System Control Functionality
- **New: RoHS Compliant**
- 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

LX Compliant LAN

**USB** Interface

- LabView and LabWindows™ drivers
- Five Year Warranty





### **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. Then up to 30 Slaves may be equipped with the less expensive Optional RS-485 Multi-Drop (MD) interface.

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

Flexible configuration is provided by the complete GenesysTM Family: 1U 750W Half-Rack, 1U 750W/1500W/2400W 2U 3.3kW/5kW, 3U 10/15kW Full-Rack. All are identical in Front Panel, Rear Panel Analog, and all Digital Interface Commands.

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

### **Front Panel Description**



- 1. ON/OFF Switch
- 2. Air Intake allows zero stacking for maximum system flexibility and power density.
- 3. Reliable encoder controls Output Voltage, Address, OVP and UVL settings.
- 4. Volt Display shows Output Voltage and directly displays OVP, UVL and Address settings.
- 5. Reliable encoder controls Output Current, sets Baud rate and Advanced Parallel mode.
- 6. Current Display shows Output Current and displays Baud rate. Displays total current in Parallel Master/Slave Mode
- 7. Function/Status LEDs:
  - Alarm
- Fine Control
- Preview Settings

- Foldback Mode
- Remote Mode
- Output On
- 8. Pushbuttons allow flexible user configuration
  - Coarse and Fine adjustment of Output Voltage/Current and Advanced Parallel Master or Slave
  - Preview settings and set Voltage/Current with Output OFF, Front Panel Lock
  - Parallel Master/Slave
  - Set OVP and UVL Limits
  - Set Current Foldback Protection
  - Go to Local Mode and select Address and Baud rate
  - Output ON/OFF and Auto/Safe Re-Start Mode

### **Rear Panel Description**



- 1. Remote/Local Output Voltage Sense Connections.
- 2. DIP Switches select 0-5V or 0-10V Programming and other functions.
- 3. DB25 (Female) connector allows (Non-isolated) Analog Program and Monitor and other functions.
- 4. RS-485 OUT to other Genesys™ Power Supplies.
- 5. RS-232/RS-485 IN Remote Serial Programming.
- 6. Output Connections: Rugged busbars (shown) for up to 100V Output; wire clamp connector for Outputs >100V.
- 7. Exit air assures reliable operation when zero stacked.
- 8. Input: 230VAC Single Phase, 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, LAN or USB Interface.
- 10. Auxiliary Output Voltage Connector. Phoenix P/N IMC1.5/7-ST-3.81

### Genesys™ 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)	A	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
1.1 CONSTANT VOLTAGE MODE													
1.Max.line regulation (0.01% of rated Vo+2mV)(*6)	mV	2.8	3	3.6	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	7.4	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	200	300
4.Ripple r.m.s 5Hz~1MHz	mV	8	8	8	8	8	8	8	8	8	25	50	75
5.Remote sense compensation/wire	V	2	2	2	2	5	5	5	5	5	5	5	5
6.Temperature coefficient	PPM/°C	100PPM/°C	of rated or	utput voltag	e, following	30 minutes	warm-up						
7.Temperature stability							es warm-up	. Constant	line, load &	temp.			
8.Warm-up drift		Less than (	0.05% of rat	ted output v	oltage+2m\	over 30 m	ninutes follo	wing power	On.				
9.Up-prog. response time, 0~Vo Rated (*9)	mS	30			50			70	8	30	100	150	200
10.Down-prog response time Full-load (*9)	mS	20		50			80		1	20	200	250	300
No-load (*10)	mS	500		600		900	1000	1100	1200	1500	2500	3500	4000
11.Transient response time	mS	Time for ou	tput voltage	e to recover	within 0.5%	of its rated	d output for	a load char	nge 10-90%	of rated ou	tput curren	t. Output se	t-point:
		10-100%, le	ocal sense.	Less than	1mSec for r	nodels up t	to and includ	ding 100V.	2msec for r	nodels abov	/e 100V		
4.0.001074117.011000717.110007													
1.2 CONSTANT CURRENT MODE	1 4	T 20		17		10					- 0.0		0.4
1.Max.line regulation (0.01% of lo rated+2mA)(*6)	mA mA	32	26	17	14	10	8	6	5	4.4	3.6	2.8	2.4
2.Max.load regulation (0.02% of lo rated+5mA)(*11)	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.Temperature coefficient	PPM/°C						tes warm-up						
5.Temperature stability	4									temperature	).		
6.Warm-up drift							nt over 30 m						
		J3UV~6UUV	mouels: Le	ss man ±0.	∠o‰ ot rate	u output cu	rrent over 3	o minutes f	oliowing po	wer On.			
1.3 PROTECTIVE FUNCTIONS													
1. OCP		0~105% Cd	onstant Cur	rent									
2. OCP Foldback					pply change	es from CV	to CC. Use	r selectable					
3. OVP type		Inverter shi	ut-down, ma	anual reset	by AC input	recycle or	by OUT but	ton or by co	mmunicati	on port com	mand.		
4. OVP trip point			0.5~12V	1~19V	1~24V	2~36V	2~44V	5~66V	5~88V	5~110V	5~165V	5~330V	5~660V
5. Output Under Voltage Limit							om adjusting						
6. Over Temperature Protection			table , latch				,	,					
· · · · · · · · · · · · · · · · · · ·			,										
1.4 ANALOG PROGRAMMING AND MONITORING		In 1000/ 0	<u></u>	21./									
1.Vout Voltage Programming							arity:±0.5%		ut.				
2.lout Voltage Programming (*13)							arity:±1% of						
3.Vout Resistor Programming							nd linearity:						
4.lout Resistor Programming (*13)							d linearity:±		ed lout.				
5.On/Off control (rear panel)							r selectable	logic.					
6.Output Current monitor (*13)					ser selectab								
7.Output Voltage monitor				ser selectab									
8.Power Supply OK signal		TTL high (4	1~5V) -OK,	0V-Fail 500	Oohm series	resistance	).						
9. CV/CC Indicator		Open Colle	ctor. CC Mo	ode: ON, C\	V Mode: OF	F. Maximur	n Voltage: 3	0V, Maximu	ım sink cur	rent: 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, 4~5V or open: Local.											
12. Local/Remote analog control Indicator							e: 30V, max			nA.			
<u> </u>		•											
1.5 FRONT PANEL 1.Control functions		D/aut/ laut m	ماناه ما معادد	at bu . aanau			and fine edit	internation	table\				
1.CONTROL TURICUONS							and fine adju	ustment sei	ectable).				
					ge Adjust en		ldbook sout	rol (C)( += C	C) C-+-!	0001 0004-1			
										ocal control.			
							. Number of	auuresses	.o I.				
					, safe mode								
		IRSUID POTO 9	selection: 12	200,2400,48	รบบ.ษ600 ar	ıu 19,200.							
2 Dieplay				*** A = A :		m + + 1 / - 1*	. 4 1						
2.Display		Voltage: 4 o		•	of rated out								
		Voltage: 4 o Current: 4 o	digits, Accur	racy: 0.5% (	of rated out of rated out	out current	±1 count.						
		Voltage: 4 o Current: 4 o	digits, Accur	racy: 0.5% (	of rated out of rated out	out current		Front Pane	I Lock, CV/	CC.			
3.Indications	Interface	Voltage: 4 o Current: 4 o	digits, Accur	racy: 0.5% (	of rated out of rated out	out current	±1 count.	Front Pane	Lock, CV/	CC.			
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN	I Interface	Voltage: 4 o Current: 4 o	digits, Accur	racy: 0.5% (	of rated out of rated out	out current	±1 count.	Front Pane	I Lock, CV/	CC.	150	300	600
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model	I Interface	Voltage: 4 c Current: 4 c Voltage, Cu	digits, Accur urrent, Alarn	racy: 0.5% on, Fine, Pre	of rated out of rated out view, Foldba	out current ack, Local,	±1 count. Output On,				150	300	600
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model 1. Remote Voltage Programming (16 bit)	I Interface V	Voltage: 4 c Current: 4 c Voltage, Cu	digits, Accur urrent, Alarn	racy: 0.5% on, Fine, Pre	of rated out of rated out view, Foldba	out current ack, Local,	±1 count. Output On,				150	300	600
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model 1. Remote Voltage Programming (16 bit) Resolution (0.012% of Vo Rated)	V	Voltage: 4 c Current: 4 c Voltage, Cu	digits, Accur urrent, Alarn 10	racy: 0.5% on, Fine, Pre	of rated out of rated out view, Foldba	out current ack, Local, 30	±1 count. Output On, 40	60	80	100			
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model 1. Remote Voltage Programming (16 bit) Resolution (0.012% of Vo Rated) Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output)	V mV	Voltage: 4 c Current: 4 c Voltage, Cu	digits, Accur urrent, Alarn 10	racy: 0.5% on, Fine, Pre	of rated out of rated out view, Foldba 20 2.4	out current ack, Local, 30	±1 count. Output On, 40 4.8	60 7.2	80 9.6	100 12	18	36	72
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model 1. Remote Voltage Programming (16 bit) Resolution (0.012% of Vo Rated) Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output) 2. Remote Current Programming (16 bit)	V mV mV	Voltage: 4 c Current: 4 c Voltage, Cu	digits, Accur urrent, Alarr 10 1.2 10	16 1.92	of rated out of rated out view, Foldbar 20 2.4 20	out current ack, Local, 30 3.6 30	±1 count. Output On,  40  4.8  40	60 7.2 60	9.6 80	100 12 100	18 150	36 300	72 600
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model 1. Remote Voltage Programming (16 bit) Resolution (0.012% of Vo Rated) Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output) 2. Remote Current Programming (16 bit) Resolution (0.012% of Io Rated)	V mV mV	Voltage: 4 c Current: 4 d Voltage, Cu 8 0.96 8	digits, Accururrent, Alarr	16 1.92 18	of rated out of rated out view, Foldbar 20 2.4 20	30 3.6 30 9.6	±1 count. Output On, 40 4.8 40 7.2	60 7.2 60 4.8	9.6 80 3.6	100 12 100 2.88	18 150	36 300 0.96	72 600 0.48
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model 1. Remote Voltage Programming (16 bit) Resolution (0.012% of Vo Rated) Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output) 2. Remote Current Programming (16 bit) Resolution (0.012% of Io Rated)	V mV mV	Voltage: 4 c Current: 4 c Voltage, Cu	digits, Accur urrent, Alarr 10 1.2 10	16 1.92	of rated out of rated out view, Foldbar 20 2.4 20	out current ack, Local, 30 3.6 30	±1 count. Output On,  40  4.8  40	60 7.2 60	9.6 80	100 12 100	18 150	36 300	72 600
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model 1. Remote Voltage Programming (16 bit) Resolution (0.012% of Vo Rated) Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output) 2. Remote Current Programming (16 bit) Resolution (0.012% of Io Rated) Accuracy (0.2%Io Rated+0.1% of Io Actual Output) (*13	V mV mV	Voltage: 4 c Current: 4 d Voltage, Cu 8 0.96 8	digits, Accururrent, Alarr	16 1.92 18	of rated out of rated out view, Foldbar 20 2.4 20	30 3.6 30 9.6	±1 count. Output On, 40 4.8 40 7.2	60 7.2 60 4.8	9.6 80 3.6	100 12 100 2.88	18 150	36 300 0.96	72 600 0.48
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model 1. Remote Voltage Programming (16 bit) Resolution (0.012% of Vo Rated) Accuracy (0.05% Vo Rated+0.05% of Vo Actual Output) 2. Remote Current Programming (16 bit) Resolution (0.012% of Io Rated) Accuracy (0.2% Io Rated+0.1% of Io Actual Output) (*13 3. Readback Voltage	V mV mV	Voltage: 4 c Current: 4 d Voltage, Cu 8 0.96 8	digits, Accururrent, Alarr	16 1.92 18	of rated out of rated out view, Foldbar 20 2.4 20	30 3.6 30 9.6	±1 count. Output On, 40 4.8 40 7.2	60 7.2 60 4.8	9.6 80 3.6	100 12 100 2.88	18 150	36 300 0.96	72 600 0.48
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model 1. Remote Voltage Programming (16 bit) Resolution (0.012% of Vo Rated) Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output) 2. Remote Current Programming (16 bit) Resolution (0.012% of Io Rated) Accuracy (0.2%Io Rated+0.1% of Io Actual Output) (*13 3. Readback Voltage Resolution (0.012% of Vo Rated)	W mV mV mA	Voltage: 4 of Current: 4 of Voltage, Cu	10 1.2 10 28.8 720	16 1.92 16 18 450	of rated out of rated out view, Foldbar 20 2.4 20 14.4 360	30 3.6 30 9.6 240	±1 count. Output On, 40 4.8 40 7.2 180	60 7.2 60 4.8 120	9.6 80 3.6 90	100 12 100 2.88 72	18 150 1.92 48	36 300 0.96 24	72 600 0.48 12
B.Indications  1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model  1. Remote Voltage Programming (16 bit)  Resolution (0.012% of Vo Rated)  Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output)  2. Remote Current Programming (16 bit)  Resolution (0.012% of Io Rated)  Accuracy (0.2%Io Rated+0.1% of Io Actual Output) (*13  3. Readback Voltage  Resolution (0.012% of Vo Rated)  Accuracy (0.1%Vo Rated+0.1% of Vo Actual Output)	MV mV mA mA	Voltage: 4 of Current: 4 of Voltage, Cu	10 1.2 10 28.8 720	16 1.92 16 18 450	of rated out of rated out view, Foldbar 20 2.4 20 14.4 360	30 3.6 30 9.6 240	±1 count. Output On,  40  4.8  40  7.2  180	60 7.2 60 4.8 120	9.6 80 3.6 90	100 12 100 2.88 72	18 150 1.92 48	36 300 0.96 24	72 600 0.48 12
B.Indications  1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model  1. Remote Voltage Programming (16 bit) Resolution (0.012% of Vo Rated) Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output)  2. Remote Current Programming (16 bit) Resolution (0.012% of Io Rated) Accuracy (0.2%lo Rated+0.1% of Io Actual Output) (*13  3. Readback Voltage Resolution (0.012% of Vo Rated) Accuracy (0.1%Vo Rated+0.1% of Vo Actual Output)  4. Readback Current	MV mV mA mV mV	Voltage: 4 c Current: 4 d Voltage, Cu 8 0.96 8 36 900 0.96 16	10 1.2 10 28.8 720 1.2 20	racy: 0.5% (n, Fine, Pre  16  1.92  16  18  450  1.92  32	of rated out of rated out view, Foldber 20 2.4 20 14.4 360 2.4 40	30 3.6 30 9.6 240	±1 count. Output On, 40 4.8 40 7.2 180 4.8 80	60 7.2 60 4.8 120 7.2 120	9.6 80 3.6 90 9.6 160	100 12 100 2.88 72 12 200	18 150 1.92 48 18 300	36 300 0.96 24 36 600	72 600 0.48 12 72 1200
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model 1. Remote Voltage Programming (16 bit) Resolution (0.012% of Vo Rated) Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output) 2. Remote Current Programming (16 bit) Resolution (0.012% of Io Rated) Accuracy (0.2%lo Rated+0.1% of Io Actual Output) (*13 3. Readback Voltage Resolution (0.012% of Vo Rated) Accuracy (0.1%Vo Rated+0.1% of Vo Actual Output) 4. Readback Current Resolution (0.012% of Io Rated)	V	Voltage: 4 c Current: 4 c Voltage, Cu 8 0.96 8 36 900 0.96 16	10 1.2 10 28.8 720 28.8	racy: 0.5% (n, Fine, Pre)  16  1.92 16  18 450  1.92 32	of rated out of rated out view, Foldber 20 2.4 20 14.4 360 2.4 40	30 3.6 30 9.6 240 3.6 60	±1 count. Output On,  40  4.8  40  7.2  180  4.8  80	7.2 60 4.8 120 7.2 120	9.6 80 3.6 90 9.6 160	100 12 100 2.88 72 12 200	18 150 1.92 48 18 300	36 300 0.96 24 36 600	72 600 0.48 12 72 1200
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model 1. Remote Voltage Programming (16 bit) Resolution (0.012% of Vo Rated) Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output) 2. Remote Current Programming (16 bit) Resolution (0.012% of Io Rated) Accuracy (0.2%lo Rated+0.1% of Io Actual Output) (*13 3. Readback Voltage Resolution (0.012% of Vo Rated) Accuracy (0.1%Vo Rated+0.1% of Vo Actual Output) 4. Readback Current Resolution (0.012% of Io Rated)	V	Voltage: 4 c Current: 4 d Voltage, Cu 8 0.96 8 36 900 0.96 16	10 1.2 10 28.8 720 1.2 20	racy: 0.5% (n, Fine, Pre  16  1.92  16  18  450  1.92  32	of rated out of rated out view, Foldber 20 2.4 20 14.4 360 2.4 40	30 3.6 30 9.6 240	±1 count. Output On, 40 4.8 40 7.2 180 4.8 80	60 7.2 60 4.8 120 7.2 120	9.6 80 3.6 90 9.6 160	100 12 100 2.88 72 12 200	18 150 1.92 48 18 300	36 300 0.96 24 36 600	72 600 0.48 12 72 1200
2.Display  3.Indications  1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model  1. Remote Voltage Programming (16 bit)  Resolution (0.012% of Vo Rated)  Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output)  2. Remote Current Programming (16 bit)  Resolution (0.012% of Io Rated)  Accuracy (0.2%Io Rated+0.1% of Io Actual Output) (*13  3. Readback Voltage  Resolution (0.012% of Vo Rated)  Accuracy (0.1%Vo Rated+0.1% of Vo Actual Output)  4. Readback Current  Resolution (0.012% of Io Rated )  Accuracy (0.3% Io Rated+0.1% of Io Actual Output) (*15)  5. OVP/UVL Programming	V	Voltage: 4 c Current: 4 c Voltage, Cu 8 0.96 8 36 900 0.96 16	10 1.2 10 28.8 720 28.8	racy: 0.5% (n, Fine, Pre)  16  1.92 16  18 450  1.92 32	of rated out of rated out view, Foldber 20 2.4 20 14.4 360 2.4 40	30 3.6 30 9.6 240 3.6 60	±1 count. Output On,  40  4.8  40  7.2  180  4.8  80	7.2 60 4.8 120 7.2 120	9.6 80 3.6 90 9.6 160	100 12 100 2.88 72 12 200	18 150 1.92 48 18 300	36 300 0.96 24 36 600	72 600 0.48 12 72 1200
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model 1. Remote Voltage Programming (16 bit) Resolution (0.012% of Vo Rated) Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output) 2. Remote Current Programming (16 bit) Resolution (0.012% of lo Rated) Accuracy (0.2%lo Rated+0.1% of lo Actual Output) (*13 3. Readback Voltage Resolution (0.012% of Vo Rated) Accuracy (0.1%Vo Rated+0.1% of Vo Actual Output) 4. Readback Current Resolution (0.012% of lo Rated ) Accuracy (0.3% lo Rated+0.1% of lo Actual Output) (*13 4. Couracy (0.3% lo Rated+0.1% of lo Actual Output) Accuracy (0.3% lo Rated+0.1% of lo Actual Output) (*13 5. OVP/UVL Programming	V	Voltage: 4 c Current: 4 c Voltage, Cu 8 0.96 8 36 900 0.96 16	10 1.2 10 28.8 720 28.8 960	16 1.92 16 18 450 1.92 32 18 600	of rated out of rated out view, Foldbar 20 2.4 20 14.4 360 2.4 40	30 3.6 30 9.6 240 3.6 60	±1 count. Output On,  40  4.8  40  7.2  180  4.8  80  7.2  240	7.2 60 4.8 120 7.2 120 4.8 160	9.6 80 3.6 90 9.6 160	100 12 100 2.88 72 12 200 2.88 96	18 150 1.92 48 18 300	36 300 0.96 24 36 600 0.96 32	72 600 0.48 12 72 1200 0.48 16
3.Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / LAN Model 1. Remote Voltage Programming (16 bit) Resolution (0.012% of Vo Rated) Accuracy (0.05%Vo Rated+0.05% of Vo Actual Output) 2. Remote Current Programming (16 bit) Resolution (0.012% of Io Rated) Accuracy (0.2%Io Rated+0.1% of Io Actual Output) (*13 3. Readback Voltage Resolution (0.012% of Vo Rated) Accuracy (0.1%Vo Rated+0.1% of Vo Actual Output) 4. Readback Current Resolution (0.012% of Io Rated ) Accuracy (0.3% Io Rated+0.1% of Io Actual Output) 4. Readback Current Resolution (0.012% of Io Rated )	V	Voltage: 4 c Current: 4 c Voltage, Cu 8 0.96 8 36 900 0.96 16	10 1.2 10 28.8 720 28.8	racy: 0.5% (n, Fine, Pre)  16  1.92 16  18 450  1.92 32	of rated out of rated out view, Foldber 20 2.4 20 14.4 360 2.4 40	30 3.6 30 9.6 240 3.6 60	±1 count. Output On,  40  4.8  40  7.2  180  4.8  80	7.2 60 4.8 120 7.2 120	9.6 80 3.6 90 9.6 160	100 12 100 2.88 72 12 200	18 150 1.92 48 18 300	36 300 0.96 24 36 600	72 600 0.48 12 72 1200

- Minimum voltage is guaranteed to maximum 0.2% of rated output voltage.
- Minimum current is guaranteed to maximum 0.4% of rated output current. 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.
- 3-Phase 208V models: At 208Vac input voltage, With rated output power.
- Not including EMI filter inrush current, less than 0.2mSec. 3-Phase 208V models: 170~265Vac, constant load.

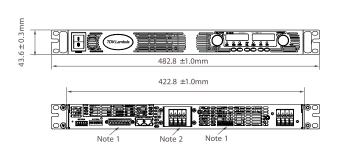
- From No-Load to Full-Load, constant input voltage. Maximum drop in Remote Sense.
  For 8V~300V models: Measured with JEITA RC-9131A (1:1) probe. For 600V model: Measured with 10:1 probe.
- \*9: From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated, resistive load.
- \*10: From 90% to 10% 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.

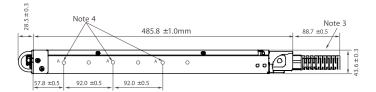
### Genesys™ 2.4kW Specifications

2.1 INPUT CHARACTERISTIC	cs	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. Input voltage/freq. (*3)		VAC				265Vac, 47								
						55Vrms , 47								
	-Phase,230V models:	Arms	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- 3.Power Factor (Typ)	-Phase, 208V models:	1	10.5	10.5	10.5	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		0/				Vac, rated o								
4. Efficiency (*4) 5. Inrush Current (5)		% A	Single Dhe	84	86	models: Les	88	88	88	88	88	88	88	87
6. Hold up time (CV Mode)		mS				hase 208V								
• • • • • • • • • • • • • • • • • • • •		IIIS	Tomsec for	Single-Ph	ase and 3-p	mase 208 v	models, at	rated outpu	it power.					
2.2 AUXILIARY OUTPUT														
1. 15V output		0.2A Max loa								ntial.				
2.5V output		5V±5%, 0.	2A Max load	d, Ripple &	Noise 100n	nVp-p. Refe	renced inter	rnally to IF_	com potent	ial.				
2.3 POWER SUPPLY CONFIG	GURATION													
Parallel Operation		Up to Four	(4) identica	I units may	be connec	ted in Maste	r/Slave Mo	de with two	wire conne	ction. In Ac	lvanced para	allel feature	, the	
			Master Unit,										d on front	
			laster unit. R									,,		
2. Series Operation		Possible (v	with external	diodes), u	o to identica	al 2 units wit	h total outp	ut not to ex	ceed +/-600	OV from cha	assis ground			
2.4 ENVIRONMENTAL COND	ITIONS													
Operating temperature		0~50°C, 10	00% load.											
2. Storage temperature		-20~85°C												
3. Operating humidity		20~90% F	RH (non-cond	densing).										
4. Storage humidity		10~95% R	H (non-cond	densing).										
5. Vibration		MIL-810F,	method 514.	.5 , The EU	T is fixed to	the vibratir	g surface.							
6. Shock		Less than	20G , half si	ine , 11mSe	c. Unit is u	npacked.								
7. Altitude			10000ft (30					ve 2000m,	Alternativel	y, derate m	aximum aml	pient temp.		
7. Allitude		by 1°C/100m above 2000m. Non operating: 40000ft (12000m).												
8. RoHS Compliance		Complies	with the requ	uirements o	f RoHS dire	ective.								
2.5 EMC														
Applicable Standards:														
2. ESD		IEC1000-4	-2. Air-disch	8kV, conta	act disch4	kV								
3. Fast transients		IEC1000-4	l-4. 2kV											
4. Surge immunity		IEC1000-4	EC1000-4-5. 1kV line to line, 2kV line to ground											
5. Conducted immunity		IEC1000-4	I-6, 3V											
Radiated immunity		IEC1000-4	l-3, 3V/m											
7. Magnetic field immunity		EN61000-												
8. Voltage dips			EN61000-4-11											
Conducted emission			A, FCC part											
10. Radiated emission		EN55022A	A, FCC part	15-A, VCCI	-A.									
2.6 SAFETY														
1.Applicable standards:		CE Mark,	UL60950,EN	N60950 list	ed. Vout≤4	0V:Output is	SELV, IEE	E/Isolated a	analog are	SELV.				
		40 <vout≤4< td=""><td>100V: Output</td><td>t is hazardo</td><td>ous, IEEE/Is</td><td>solated anal</td><td>og are SEL</td><td>V.</td><td></td><td></td><td></td><td></td><td></td><td></td></vout≤4<>	100V: Output	t is hazardo	ous, IEEE/Is	solated anal	og are SEL	V.						
		400 <vout≤< td=""><td>≤600V:Outpu</td><td>ut is hazard</td><td>ous, IEEE/I</td><td>solated ana</td><td>log are not</td><td>SELV.</td><td></td><td></td><td></td><td></td><td></td><td></td></vout≤<>	≤600V:Outpu	ut is hazard	ous, IEEE/I	solated ana	log are not	SELV.						
2.Withstand voltage		Vout≤40V	models :Inpi	ut-Outputs	(SELV): 424	42VDC 1mir	n, Input-Gro	und: 2828\	/DC 1min.					
		40 <vout≤1< td=""><td>100V models</td><td>: Input-Haz</td><td>. Output: 26</td><td>600VDC 1m</td><td>in, Input-SE</td><td>LV: 4242V</td><td>DC 1min.</td><td></td><td></td><td></td><td></td><td></td></vout≤1<>	100V models	: Input-Haz	. Output: 26	600VDC 1m	in, Input-SE	LV: 4242V	DC 1min.					
		Hazardous	OutputSE	LV: 1900V	OC 1min, H	azardous O	utput-Grour	nd:1200VD0	C 1min. Inp	ut-Ground:	2828VDC 1	min.		
		100 <vout≤< td=""><td>600V mode</td><td>ls: Input-Ha</td><td>z. Output: 4</td><td>4000VDC 11</td><td>nin, Input-S</td><td>SELV: 4242\</td><td>/DC 1min.</td><td></td><td></td><td></td><td></td><td></td></vout≤<>	600V mode	ls: Input-Ha	z. Output: 4	4000VDC 11	nin, Input-S	SELV: 4242\	/DC 1min.					
			S OutputSE			azardous O	utput-Grour	nd:2670VD	C 1min. Inp	ut-Ground:	2828VDC 1	min.		
3.Insulation resistance		More than	100Mohm a	t 25°C, 70	% RH.									
2.7 MECHANICAL CONSTRU	CTION													
1. Cooling		Forced air	flow: from fro	ont to rear.	No ventilati	ion holes at	the top or h	ottom of the	e chassis: V	ariable fan	speed.			
2. Dimensions (WxHxD)			/ 16.65" H:								<u> </u>			
3. Weight		10 kg. / 22		. 5. 5. 1 111 /	2, 3. 402		, shoudding	- 5501013	, 5500015,		/			
4. AC Input connector (with Pro	otective Cover)	Single Pha	ase,230V models											
5.Output connectors		8V to 100\	/ models: Bu utput Heade	ıs-bars (hol	e Ø 8.5mm	/0.33"). 150	V to 600V r	nodels: wir	e clamp co		oenix P/N: F	RONT-4-H	-7.62	
2.7 Warranty			, p. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	5	2. 2.01,11	. goo.	2.0.01							
1. Warranty		5 years.												

### Outline Drawing Genesys™ 2.4kW Units

All specifications subject to change without notice.





#### NOTE

- 1. Mating plug supplied with power supply
- Bus bars for 8V to 100V models (shown) Wire clamp connector for 150V to 600V models
- 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

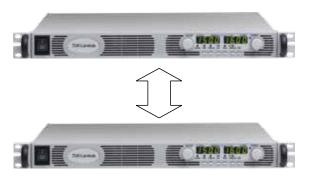
Up to two units may be connected in series to increase the output voltage or to provide bipolar output. (Max 600V to Chassis Ground).

### 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 with or without Multi-Drop option.







P/N: IEMD

P/N: MD

P/N: IS420

P/N: LAN

### **Programming Options (Factory installed)**

### **New IEEE Multi-Drop Interface**

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

- Program Current
- Measure Current
- Current Foldback shutdown

### **New Multi-Drop Slave Option**

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

### **Isolated Analog Programming**

- Four Channels to Program and Monitor Voltage and Current.
- Isolation allows operation with floating references in harsh electrical environments.
- Choose between programming with Voltage or Current.
- Connection via removable terminal block: Phoenix MC1,5/8-ST-3.81.
- Voltage Programming, user-selectable 0-5V or 0-10V signal. P/N: IS510

Power supply Voltage and Current Programming Accuracy ±1%

Power supply Voltage and Current Monitoring Accuracy ±1.5%

Current Programming with 4-20mA signal.

Power supply Voltage and Current Programming Accuracy ±1%

Power supply Voltage and Current Monitoring Accuracy ±1.5%

LAN Interface LXI Compliant to Class C

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

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

USB Interface P/N: USB

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

5/ Genesys™ 2.4kW 1U

## Power Supply Identification / Accessories How to order

GEN 8 - 300

Series Output Out Name Voltage Cur (0~8V) (0~

Output Option: Current (0~300A)

Factory Options
Option: IEMD
MD
IS510
IS420
LAN

**USB** 

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

### Models 2.4kW

Model	Output Voltage VDC	Output Current (A)	Output Power (W)
GEN 8-300	0~8V	0~300	2400
GEN 10-240	0~10V	0~240	2400
GEN 16-150	0~16V	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

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

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

### **Accessories**

### 1. Serial Communication cable

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

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

P/N

### 2. Serial link cable\*

Daisy-chain up to 31 Genesys<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
3U Full Rack 10/15kW

<sup>\*</sup> Limit of one interface option per supply

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