



Programmable DC Power Supplies 2.4kW in 1U Built in RS-232 & RS-485 Interface Advanced Parallel Operation Auxiliary Outputs 5V & 15V

> Optional Interface: LXI Compliant LAN IEEE488.2 SCPI (GPIB) Multi-drop Isolated Analog Programming



Genesys™ Family GenH 750W Half Rack Gen1U 750/1500W Full Rack Gen2U 3.3/5kW



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

#### Features include:

- High Power Density 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
- Auxillary Outputs 5V/0.2A; 15V/0.2A for increased system control functionality
- 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

IEEE 488.2 SCPI (GPIB) Multi-Drop

**LX** 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**

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

Test Systems using the IEEE-488 bus may achieve significant cost savings by incorporating the Optional IEEE Multi-Drop Interface for a Master and up to 30 RS-485 Multi-Drop Slaves.

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 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:

Foldback Mode

- Alarm
- Fine ControlRemote Mode
- Preview Settings Output On
- 8. Pushbuttons allow flexible user configuration
- 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<sup>™</sup> 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 Connector. Phoenix P/N: IMC1.5/7-ST-3.81

### Genesys ™ 2.4kW Specifications

1.0 MODEL MODEL	GEN	8-300	10-240	16-150	20-120	30-80	40-60	60-40	80-30	Specifica 100-24	150-16	300-8	600-4
1.Rated output voltage(*1)	V	8	10	16	20	30	40	60	80	100 21	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
1.1 CONSTANT VOLTAGE MODE		20	2	25		5		C	10	10	17	22	~ ~ ~
1.Max.line regulation (0.01% of rated Vo+2mV)(*6) 2.Max load regulation (0.015% of rated Vo+5mV)(*7)	mV mV	2.8	3	3.5	4	5 9.5	6	<u>8</u> 14	10 17	12 20	17 27.5	32	62
2.Max load regulation (0.015% of rated vo+5mv)(*7) 3.Ripple and noise p-p 20MHz (*8)	mV	6.2 50	6.5 50	7.25 50	8 50	<u>9.5</u>	11 55	60	60	70	<u>27.5</u> 90	50 150	95 240
4.Ripple r.m.s 5Hz~1MHz	mV	6	6	6	6	6	6	6	7	10	20	45	60
5.Remote sense compensation/wire	V	2	2	2	2	5	5	5	5	5	5	5	5
6.Temp. coefficient	PPM/°C						30 minute				-		
7.Temp. stability										tant line, lo	oad & tem	р.	
8.Warm-up drift		Less than	0.05% of		out voltag	e+2mV ov	er 30 min						
9.Up-prog. response time, 0~Vo Rated (*9)	mS			15			20	30	40	40	60	80	100
10.Down-prog response Full-load (*9)	mS	10	10 500	20 500	20 500	20	20	30 1100	50 1200	50	80	100	100
time No-load (*10)	mS	500				600	700			1500	2500	3000	3000
11.Transient response time	mS	limeforo	output volt	age to reco	over within	0.5% of it	s rated out	put for a lo	oad chang	je 10-90% o ng 100V. 2	of rated ou	tput currer	nt. Outp
1.2 CONSTANT CURRENT MODE		set-point	10-100%	, local sell	se. Less in		Tor mode	is up to an		ng 100v. 2	insector in	nouels abo	ove iou
1.2 CONSTANT CORRENT MODE 1.Max.line regulation (0.01% of rated Io+2mA)(*6)	mA	32	26	17	14	10	8	6	5	4.4	3.6	2.8	2.4
2. Max.load regulation (0.02% of rated lo+2mA)(*11)	mA	65	53	35	29	21	17	13	11	9.8	8.2	6.6	5.8
B.Ripple r.m.s 5Hz~1MHz . (*12)	mA	700	500	400	250	150	90	60	40	30	12	10	5
4.Load regulation thermal drift		Less than	0.1% of ra	ited outpu	it current	over 30 m	inutes foll	owing loa	d change				
5.Temp. coefficient	PPM/°C	70PPM/º											
5.Temp. stability										ant line, lo		perature.	
7.Warm-up drift										owing pow			
I.3 PROTECTIVE FUNCTIONS		JUV~600	v models:	Less than	±0.25% of	rated ou	tput curre	nt over 30	minutes	following	power On		
. OCP		0~10504 0	Constant C	urrent									
2. OCP Foldback					ver sunnly	change f	rom CV to	(C. User o	electable	2			
3. OVP type		Inverter s	hut-down	manual	eset by A	input re	cycle or by	OUT but	ton or by	communio	ation por	t comman	d
I. OVP trip point		0.5~10V	0.5~12V	1~18V	1~24V	2~36V	2~44V	5~66V	5~88V	5~110V	5~165V	5~330V	5~660
5. Output Under Voltage Limit		0.5~10V 0.5~12V 1~18V 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.											
5. Over Temp. Protection		User sele	ctable , lat	ched or n	on-latche	d.							
1.4 ANALOG PROGRAMMING AND MONITO	RING												
1.Vout Voltage Programming							d linearity						
2.lout Voltage Programming (*13)		0~100%, 0~5V or 0~10V, user select. Accuracy and linearity:±1% of rated lout.											
3.Vout Resistor Programming			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.										
4.lout Resistor Programming (*13)			By electrical. Voltage: 0~0.6V/2~15V,or dry contact ,user selectable logic.										
5.On/Off control (rear panel) 5.Output Current monitor (*13)		0~5V or 0~10V, Accuracy:±1%, user selectable.											
7.Output Voltage monitor		0~5V or 0~10V, Accuracy:±1%, user selectable.											
8.Power Supply OK signal					500ohm se		tance.						
9. CV/CC Indicator								tage: 30V,	maximun	n sink curr	ent: 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. Open collector, Local: Off, Remote: On. Maximum voltage: 30V, maximum sink current: 10mA.											
12. Local/Remote analog control Indicator		Open col	lector, Loo	al: Off, Re	mote: On.	Maximun	n voltage:	30V, maxi	mum sink	current: 1	0mA.		
1.5 FRONT PANEL		M		. P I.				1.0		.1			
								i fine adju	stmentse	electable).			
1.Control functions		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.											
neona or functions		Address selection by Voltage (or current) adjust encoder. Number of addresses:31.											
					start, safe								
					0,4800,96								
2.Display		Voltage: 4	4 digits , A	ccuracy:	0.05% of	rated ou	tput Volt	age ±1 co	ount.				
L.D. opiay		Current: 4	digits, A	ccuracy: (	<u>).2% of ra</u>	ted outp	out curren	nt ±1 cou	nt.	11 1 1 1	~~		
		Voltage, (								el Lock, CV	ιι.		
			177/DC 4	85 Or On	tional G	PIB/LAN	Interfac	e Installe	d				
1.6 Interface Specifications for the GENESY		with RS-2	32/K5-4	05 01 00					00	100	150		600
1.6 Interface Specifications for the GENESY 1. Remote Voltage Programming (16 bit)	V	8	10	15	20	30	40	60	80			300	
I.6 Interface Specifications for the GENESY I. Remote Voltage Programming (16 bit) Resolution (0.002% of Vo Rated)	V mV	8 0.16	10 0.2	15 0.3	20 0.4	30 0.6	0.8	1.2	1.6	2	3	6	12
1.6 Interface Specifications for the GENESY I. Remote Voltage Programming (16 bit) Resolution (0.002% of Vo Rated)	V	8	10	15	20	30							12
1.6 Interface Specifications for the GENESY I. Remote Voltage Programming (16 bit) Resolution (0.002% of Vo Rated) Accuracy (0.05% of Vo Rated) (*14) 2. Remote Current Programming (16 bit)	V mV mV	8 0.16 4	10 0.2 5	15 0.3	20 0.4	30 0.6	0.8 20	1.2 30	1.6	2	3 75	6	12
I.6 Interface Specifications for the GENESY . Remote Voltage Programming (16 bit) Resolution (0.002% of Vo Rated) Accuracy (0.05% of Vo Rated) (*14) . Remote Current Programming (16 bit) Resolution (0.002% of Io Rated)	V mV mV mA	8 0.16 4 6	10 0.2 5 4.80	15 0.3 8 3.00	20 0.4 10 2.40	30 0.6 15 1.60	0.8 20 1.20	1.2 30 0.80	1.6 40 0.60	2 50 0.48	3 75 0.32	6 150 0.16	12 300
I.6 Interface Specifications for the GENESY I. Remote Voltage Programming (16 bit) Resolution (0.002% of Vo Rated) Accuracy (0.05% of Vo Rated) (*14) 2. Remote Current Programming (16 bit) Resolution (0.002% of Io Rated)	V mV mV	8 0.16 4	10 0.2 5	15 0.3 8	20 0.4 10	30 0.6 15	0.8 20	1.2 30	1.6 40	2 50	3 75	6 150	12 300
I.6 Interface Specifications for the GENESY I. Remote Voltage Programming (16 bit) Resolution (0.002% of Vo Rated) Accuracy (0.05% of Vo Rated) (*14) 2. Remote Current Programming (16 bit) Resolution (0.002% of Io Rated) Accuracy (0.2% of Io Rated)	V mV mV mA	8 0.16 4 6	10 0.2 5 4.80	15 0.3 8 3.00	20 0.4 10 2.40	30 0.6 15 1.60	0.8 20 1.20	1.2 30 0.80	1.6 40 0.60	2 50 0.48	3 75 0.32	6 150 0.16	12 300
.6 Interface Specifications for the GENESY .Remote Voltage Programming (16 bit) Resolution (0.002% of Vo Rated) Accuracy (0.05% of Vo Rated) (*14) .Remote Current Programming (16 bit) Resolution (0.002% of Io Rated) .ccuracy (0.2% of Io Rated+0.1% of Io Actual Output) (*13) .Readback Voltage Resolution (% of Vo Rated)	V mV mV mA mA	8 0.16 4 900 0.002	10 0.2 5 4.80 720 0.011	15 0.3 8 3.00 450 0.007	20 0.4 10 2.40 360 0.006	30 0.6 15 1.60 240 0.004	0.8 20 1.20 180 0.003	1.2 30 0.80 120 0.002	1.6 40 0.60 90 0.002	2 50 0.48 72 0.011	3 75 0.32 48 0.007	6 150 0.16	12 300 0.08 12 0.00
I.6 Interface Specifications for the GENESY     Remote Voltage Programming (16 bit)     Resolution (0.002% of Vo Rated)     Accuracy (0.05% of Vo Rated) (*14)     Remote Current Programming (16 bit)     Resolution (0.002% of Io Rated)     Accuracy (0.2% of Io Rated)     Readback Voltage     Resolution (% of Vo Rated)     Resolution (% of Vo Rated)     Resolution (Readback Voltage)	V mV mV mA mA % mV	8 0.16 4 900 0.002 0.16	10 0.2 5 4.80 720 0.011 1.10	15 0.3 8 3.00 450 0.007 1.05	20 0.4 10 2.40 360 0.006 1.20	30 0.6 15 1.60 240 0.004 1.20	0.8 20 1.20 180 0.003 1.20	1.2 30 0.80 120 0.002 1.20	1.6 40 0.60 90 0.002 1.60	2 50 0.48 72 0.011 11.00	3 75 0.32 48 0.007 10.50	6 150 0.16 24 0.004 12.00	12 300 0.08 12 0.00 12.0
I.6 Interface Specifications for the GENESY     I. Remote Voltage Programming (16 bit)     Resolution (0.002% of Vo Rated)     Accuracy (0.05% of Vo Rated) (*14)     Remote Current Programming (16 bit)     Resolution (0.002% of Io Rated)     Accuracy (0.2% of Io Rated)     Accuracy (0.2% of Io Rated)     Resolution (% of Vo Rated)     Resolution (% of Vo Rated)     Resolution (Readback Voltage)	V mV mV mA mA	8 0.16 4 900 0.002	10 0.2 5 4.80 720 0.011	15 0.3 8 3.00 450 0.007	20 0.4 10 2.40 360 0.006	30 0.6 15 1.60 240 0.004	0.8 20 1.20 180 0.003	1.2 30 0.80 120 0.002	1.6 40 0.60 90 0.002	2 50 0.48 72 0.011	3 75 0.32 48 0.007	6 150 0.16 24 0.004	12 300 0.08 12 0.00 12.0
I.6 Interface Specifications for the GENESY     Remote Voltage Programming (16 bit)     Resolution (0.002% of Vo Rated)     Accuracy (0.05% of Vo Rated) (*14)     Remote Current Programming (16 bit)     Resolution (0.002% of Io Rated)     Accuracy (0.2% of IoRated+0.1% of IoActual Output) (*13)     Readback Voltage     Resolution (% of Vo Rated)     Resolution (Readback Voltage)     Accuracy (0.05% of Vo Rated)	V mV mV mA mA % mV	8 0.16 4 900 0.002 0.16	10 0.2 5 4.80 720 0.011 1.10	15 0.3 8 3.00 450 0.007 1.05	20 0.4 10 2.40 360 0.006 1.20	30 0.6 15 1.60 240 0.004 1.20	0.8 20 1.20 180 0.003 1.20	1.2 30 0.80 120 0.002 1.20	1.6 40 0.60 90 0.002 1.60	2 50 0.48 72 0.011 11.00	3 75 0.32 48 0.007 10.50	6 150 0.16 24 0.004 12.00	12 300 0.08 12 0.00 12.0
I.6 Interface Specifications for the GENESY:     Remote Voltage Programming (16 bit)     Resolution (0.002% of Vo Rated)     Accuracy (0.05% of Vo Rated) (*14)     Remote Current Programming (16 bit)     Resolution (0.002% of lo Rated)     Accuracy (0.2% of lo Rated)     Resolution (% of Vo Rated)     Readback Voltage     Resolution (% of Vo Rated)     Accuracy (0.05% of Vo Rated)     Readback Current	V mV mV mA mA % mV	8 0.16 4 900 0.002 0.16	10 0.2 5 4.80 720 0.011 1.10	15 0.3 8 3.00 450 0.007 1.05	20 0.4 10 2.40 360 0.006 1.20	30 0.6 15 1.60 240 0.004 1.20	0.8 20 1.20 180 0.003 1.20	1.2 30 0.80 120 0.002 1.20	1.6 40 0.60 90 0.002 1.60	2 50 0.48 72 0.011 11.00	3 75 0.32 48 0.007 10.50	6 150 0.16 24 0.004 12.00	12 300 12 0.00 12.0 300
3.Indications 1.6 Interface Specifications for the GENESY. I. Remote Voltage Programming (16 bit) Resolution (0.002% of Vo Rated) Accuracy (0.05% of Vo Rated) (*14) 2. Remote Current Programming (16 bit) Resolution (0.002% of Io Rated) Accuracy (0.2% of Io Rated) Accuracy (0.2% of Io Rated) Resolution (% of Vo Rated) Resolution (Readback Voltage) Accuracy (0.05% of Vo Rated) 4. Readback Current Resolution (% of Io Rated ) Resolution (% of Io Rated ) Resolution (Readback Current )	V mV mV mA mA % mV mV	8 0.16 4 900 0.002 0.16 4 0.004 12	10 0.2 5 4.80 720 0.011 1.10 5 0.005 12	15 0.3 8 3.00 450 0.007 1.05 8 0.007 10.5	20 0.4 10 2.40 360 0.006 1.20 10	30 0.6 15 1.60 240 0.004 1.20 15	0.8 20 1.20 180 0.003 1.20 20	1.2 30 0.80 120 0.002 1.20 30 0.003 1.2	1.6 40 0.60 90 0.002 1.60 40	2 50 72 0.011 11.00 50	3 75 48 0.007 10.50 75	6 150 24 0.004 12.00 150	300 0.08
I.6 Interface Specifications for the GENESY     Remote Voltage Programming (16 bit)     Resolution (0.002% of Vo Rated)     Accuracy (0.05% of Vo Rated) (*14)     Remote Current Programming (16 bit)     Resolution (0.002% of Io Rated)     Accuracy (0.2% of Io Rated+0.1% of Io Actual Output) (*13)     Readback Voltage     Resolution (% of Vo Rated)     Accuracy (0.05% of Vo Rated)     Accuracy (0.05% of Vo Rated)     Acesolution (% of Io Rated)     Resolution (% of Io Rated)     Accuracy (0.05% of Vo Rated)	V mV mV mA mA % mV mV mV	8 0.16 4 900 0.002 0.16 4 0.004	10 0.2 5 4.80 720 0.011 1.10 5 0.005	15 0.3 8 3.00 450 0.007 1.05 8	20 0.4 10 2.40 360 0.006 1.20 10 0.009	30 0.6 15 1.60 240 0.004 1.20 15 0.002	0.8 20 1.20 180 0.003 1.20 20 0.002	1.2 30 0.80 120 0.002 1.20 30 0.003	1.6 40 0.60 90 0.002 1.60 40 0.004	2 50 0.48 72 0.011 11.00 50	3 75 0.32 48 0.007 10.50 75 0.007	6 150 24 0.004 12.00 150 0.002	12 300 12 0.00 12.0 300
I.6 Interface Specifications for the GENESY     Remote Voltage Programming (16 bit)     Resolution (0.002% of Vo Rated)     Accuracy (0.05% of Vo Rated) (*14)     Remote Current Programming (16 bit)     Resolution (0.002% of Io Rated)     Accuracy (0.2% of Io Rated)-     Accuracy (0.2% of Vo Rated)     Readback Voltage     Resolution (% of Vo Rated)     Resolution (Readback Voltage)     Accuracy (0.05% of Vo Rated)     Resolution (% of Io Rated)     Resolution (Readback Current     Accuracy (0.3% of Io Rated) (*13)	V mV mV mA mA mV mV mV % mA	8 0.16 4 900 0.002 0.16 4 0.004 12	10 0.2 5 4.80 720 0.011 1.10 5 0.005 12	15 0.3 8 3.00 450 0.007 1.05 8 0.007 10.5	20 0.4 10 2.40 360 0.006 1.20 10 0.009 10.8	30 0.6 15 1.60 240 0.004 1.20 15 0.002 1.6	0.8 20 1.20 180 0.003 1.20 20 0.002 1.2	1.2 30 0.80 120 0.002 1.20 30 0.003 1.2	1.6 40 90 0.002 1.60 40 0.004 1.2	2 50 0.48 72 0.011 11.00 50 0.005 1.2	3 75 0.32 48 0.007 10.50 75 0.007 1.120	6 150 24 0.004 12.00 150 0.002 0.160	12 300 12 0.00 12.0 300 0.00 0.12
I.6 Interface Specifications for the GENESY:     Remote Voltage Programming (16 bit)     Resolution (0.002% of Vo Rated)     Accuracy (0.05% of Vo Rated) (*14)     Remote Current Programming (16 bit)     Resolution (0.002% of lo Rated)     Accuracy (0.2% of lo Rated)     Accuracy (0.2% of lo Rated)     Resolution (% of Vo Rated)     Resolution (% of Vo Rated)     Resolution (Readback Voltage)     Accuracy (0.05% of lo Rated)     Readback Current     Readback Current     Resolution (% of lo Rated)     Readback Current     Resolution (% of lo Rated)     Readback Current     Accuracy (0.3% of lo Rated)     Resolution (% of lo Rated)     Solution (% of lo Rated)     Resolution (% of lo Rated)     Resolution (% of lo Rated)     Resolution (% of lo Rated)     Solution (% of lo Rated)     Accuracy (0.3% of lo Rated)     Accuracy (0.3% of lo Rated) (*13)     SolvP/UVL Programming	V mV mV mA mA mV mV % mA mA	8 0.16 4 900 0.002 0.16 4 0.004 12 900	10 0.2 5 4.80 720 0.011 1.10 5 5 0.005 12 720	15 0.3 8 3.00 450 0.007 1.05 8 0.007 10.5 450	20 0.4 10 2.40 360 0.006 1.20 10 0.009 10.8 360	30 0.6 15 1.60 240 0.004 1.20 15 0.002 1.6 240	0.8 20 1.20 180 0.003 1.20 20 0.002 1.2 180	1.2 30 0.80 120 1.20 30 0.002 1.20 30 0.003 1.2 120	1.6 40 90 0.002 1.60 40 0.004 1.2 90	2 50 0.48 72 0.011 11.00 50 0.005 1.2 72	3 75 0.32 48 0.007 10.50 75 0.007 1.120 48	6 150 0.16 24 12.00 150 0.002 0.160 24	12 300 12 0.00 12.0 300 0.00 0.12 12
.6 Interface Specifications for the GENESY .Remote Voltage Programming (16 bit) tesolution (0.002% of Vo Rated) vccuracy (0.05% of Vo Rated) (*14) .Remote Current Programming (16 bit) tesolution (0.002% of Io Rated) .ccuracy (0.2% of Io Rated) .Readback Voltage tesolution (% of Vo Rated) tesolution (Readback Voltage) .Readback Current .Readback Current .Readback Current .Readback Current .Readback Current .Readback Current .Readback Current .tesolution (Readback Current) .tesolution (Readback Current)	V mV mV mA mA mV mV mV % mA	8 0.16 4 900 0.002 0.16 4 0.004 12	10 0.2 5 4.80 720 0.011 1.10 5 0.005 12	15 0.3 8 3.00 450 0.007 1.05 8 0.007 10.5	20 0.4 10 2.40 360 0.006 1.20 10 0.009 10.8	30 0.6 15 1.60 240 0.004 1.20 15 0.002 1.6	0.8 20 1.20 180 0.003 1.20 20 0.002 1.2	1.2 30 0.80 120 0.002 1.20 30 0.003 1.2	1.6 40 90 0.002 1.60 40 0.004 1.2	2 50 0.48 72 0.011 11.00 50 0.005 1.2	3 75 0.32 48 0.007 10.50 75 0.007 1.120	6 150 24 0.004 12.00 150 0.002 0.160	12 300 12 0.00 12.0 300 0.00 0.12

\*2: Minimum current is guaranteed to maximum 0.4% of rated output current.

For cases where conformance to various safety standards (UL, JEC, 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. \*3:

\*4: \*5: \*6: Not including EMI filter inrush current, less than 0.2mSec. 3-Phase 208V models: 170~265Vac, constant load.

\*7: \*8: \*9: 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 From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated, resistive load with 10:1 probe.

\*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.

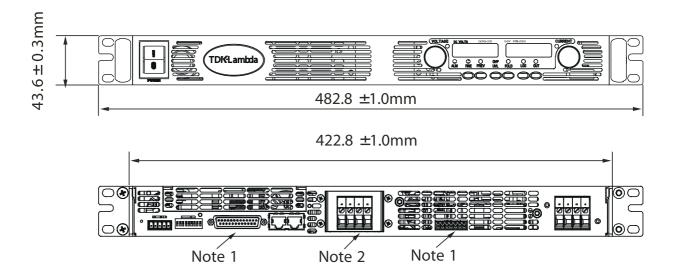
\*14: Measured at the sensing point.

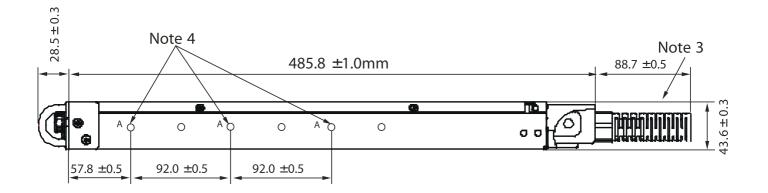
# General Specifications Genesys<sup>™</sup> 2.4kW

2.1 INPUT CHARACTERISTICS	GEN	8-300	10-240	16-150	20-120	30-80	40-60	60-40	80-30	100-24	150-16	300-8	600-
I. Input voltage/freg. (*3)	VAC	Single Ph	ase,230V n	nodels: 17	0~265Vac,	47~63Hz							
. input voltage/ireq. ( 5)	VAC	3-Phase, 2	208V mode	els: 170~26	65Vac, 47~6	53Hz							
2. Maximum Single Phase, 230V models:		17.3	17.3	17.3	16.8	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
nput current at 100% load 3-Phase, 208V models:	A	10.5	10.5	10.5	10.2	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
3. Power Factor (Typ)		Single Ph	ase model	s: 0.99@23	0Vac, rate	d output p	ower. 3-Ph	ase model	s: 0.94@20	8Vac, rate	d output p	ower.	
4. Efficiency (*4)	%	84	84	86	86	86	88	88	88	88	88	88	87
5. Inrush Current (*5)	Α	Single-Ph	ase and 3-	Phase 208	8V models:	Less than	50A						
2.2 POWER SUPPLY CONFIGURATION													
1. Parallel Operation					er/slave m								
2. Series Operation		Up to 2 id	entical un	its. with ex	cternal dio	des. 600V	Max to Cha	ssis groun	d				
2.3 ENVIRONMENTAL CONDITIONS 1. Operating temp		0 50°C 1	00% load.	-					-		-		
2. Storage temp		-20~85°C											
3. Operating humidity			RH (non-co	ndensina	)								
4. Storage humidity			RH (non-co										
5. Vibration						to the vib	orating surf	ace.					
6. Shock		Less than	20G, half	sine , 11m	Sec. Unit is	unpacked							
7. Altitude							by 2%/100r ft (12000m		000m, Alte	rnatively, d	erate max	imum amb	ient tei
8. RoHS Compliance					nts of RoHS								
2.4 EMC													
1.Applicable Standards:													
2.ESD				ch8KV, co	ontact disc	h4KV							
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 8.Voltage dips	nunity EN61000-4-8, 1A/m EN61000-4-11												
9.Conducted emission EN55022A, FCC part 15-A, VCCI-A.													
10. Radiated emission			A, FCC part										
2.5 SAFETY			,										
1.Applicable standards:		UL 60950	-1, CSA 22.	2 No. 6095	50-1,IEC 60	950-1, EN 6	50950-1						
							nication/co			32/485, IEE	E, Isolated	d Analog,L	AN, Ser
							iliary outpu						
2.Interface classification		Models with 60V Vout 400V: Output is Hazardous, communication/control interfaces: RS232/485, IEEE,Isolated Analog, LAN Remote Programing and Monitoring (pins 1-3, pins14-16), 5V d.c. auxiliary output are SELV, Sense, Remote Programming an Monitoring (pins 8-13, pins 21-25),15V auxiliary output are Hazardous.											
		Models with 400V Vout 600V: Output is Hazardous, all communication/control interfaces-RS232/485, IEEE, Isolated Analo LAN, Sense, Remote Programming and Monitoring (all pins), 5V d.c./15V d.c. auxiliary outputs are Hazardous.											
		Vout 50V models: Input-Output/communication/control/auxiliary outputs (SELV): 4242VDC 1min, Input-Ground: 2828VDC 1min., Output/communication/control/auxiliary outputs (SELV)-Ground: 1000VDC 1min.											
3.Withstand voltage	60V Vout 100V models: Input-Output/15V d.c. auxiliary output/communication/control (Hazardous): 2600VDC 1min, Input-communication/control/5V d.c. auxiliary output (SELV): 4242VDC 1min, Output/15V d.c. auxiliary output/communicatior control (Hazardous): - communication/control/5V d.c. auxiliary output (SELV): 1900VDC 1min,Output/15V d.c. auxiliary output communication/control (Hazardous): - Ground: 1200VDC 1min,Input-Ground: 2828VDC 1min.												
		100V Vout 600V models: Input-Output/15V d.c. auxiliary output/communication/control (Hazardous): 4000VDC 1min, Input-communication/control/5V d.c. auxiliary output (SELV): 4242VDC 1min, Output/15V d.c. auxiliary output/communicatio control (Hazardous): -communication/control/5V d.c. auxiliary output (SELV): 3550VDC 1min, Output/15V d.c. auxiliary output communication/control (Hazardous): -Ground: 2670VDC 1min, Input-Ground: 2828VDC 1min.											
3.Insulation resistance 2.6 MECHANICAL CONSTRUCTION		More tha	n 100Mohr	n at 25°C ,	70% RH.								
I. Cooling		Forced ai	r flow: fron	n front to i	rear. No ve	ntilation h	oles at the	top or bot	tom of the	chassis; Va	ariable fan	speed.	
2. Dimensions (WxHxD)		Forced air flow: from front to rear. No ventilation holes at the top or bottom of the chassis; Variable fan speed. W: 423mm, H: 43.6mm, D: 441mm (excluding connectors, encoders, handles, etc.)											
3. Weight		Less than											
4. AC Input connector (with Protective Cove	er)						16/3-GF-10 6-16/4-GF						
5.Output connectors		8V to 100	V models:	Bus-bars (l	hole Ø 10.5	5mm). 150\	/ to 600V m	nodels: wir	e clamp co	onnector, P	hoenix P/	N: FRONT-4	1-H-7.6
2.7 AUXILARY OUTPUTS													
1. 15V Output (*8)							. reference					ntial.	
2.5V Output		5V± 5%, 0	.2A Max L	oad, Rippl	e & Noise 1	00mVp-p.	referenced	internally	/ to IF_COM	A potentia	l <u>.</u>		
2.8 RELIABILITY SPECS		-											
1. Warranty All specifications subject to change without	tnotice	5 years.											
	LIUUILE.												

All specifications subject to change without notice.

# Outline Drawing Genesys<sup>™</sup> 2.4kW Units





#### NOTE

- 1. Mating plug supplied with power supply.
- 2. Bus bars for 8V to 100V models. See Detail
- 2. Ac cable strain relief supplied with power supply.
- 4. Chassis slides mounting holes #10-32 marked "A".
  - GENERAL DEVICES P/N: CC3001-00-5160 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.

# Programming Options (Factory installed)

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

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

#### **Isolated Analog Programming**

Four Channels to Program and Monitor Voltage and Current. Isolation allows operation with floating references in harsh electrical environments. Choose between programming with Voltage or Current.

Connection via removable terminal block: Phoenix MC1,5/8-ST-3.81.

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

# LAN Interface **L** Compliant to Class C

- Meets all LXI-C Requirements
- Address Viewable on Front Panel
- Fixed and Dynamic Addressing
- Compatible with most standard Networks

- Program Current
- Measure Current
- Current Foldback shutdown

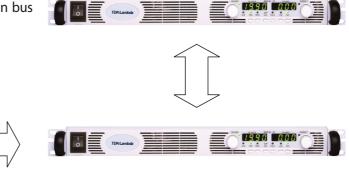
P/N: IEEE

#### • VISA & SCPI Compatible

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

de, total current is programmed and reported by the Master, Up to

TDK Lambda



1990 000

P/N: IS420

P/N: LAN

P/N: IS510

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

GEN	8 -	300 -		-
			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	(0~300A)	IS420	
			LAN	

# 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	
Factory optio	n			P

ractory option	P/IN
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 LVA 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

\* Included with power supply



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

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

