



# GENESYS<sup>™</sup> G Series Programmable DC Power Supplies

• Half-Rack 1kW / 1.5kW in 1U Height

### **Built-In Advanced Features**

- Arbitrary Waveform Generator with Auto-Trigger Capability
- Programmable Slew Rate Control (Vout/lout)
- Constant Power Limit Operation 
  Internal Resistance Programming
- Built-In LAN (LXI 1.5), USB, and RS-232/RS-485 Interfaces
- Built-In Remote Isolated Analog Interface
- Optional EtherCAT, Modbus-TCP, IEEE (488.2) Interfaces
- Blank Front Panel Option Available





The **G***E***NESYS**<sup>™</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:

- Leading DC Programmable power density (1.5kW in 1U height) in 19" Half-Rack-mount
- Light-weight <3.5 kg
- Wide Range of popular worldwide AC inputs: GH1kW/1.5kW: 1ø (85~265VAC)
- Active PFC (0.99 typical)
- Output Voltage up to 600V, Current up to 150A
- Built-in LAN (LXI 1.5), USB, RS-232/RS-485 Interface
- Multi-Drop capability (RS-485)
- Multi-functional front panel display
- Last-Setting Memory
- Auto-Start / Safe-Start: user selectable
- High Resolution 16 bit ADCs & DACs
- Arbitrary Waveform Generator with Auto-Trigger Capability
- Store up to 100 steps into four internal memory cells
- High-speed Programming
- Constant Voltage/Constant Current operation modes
- Constant Power (CP) Limit
- Slew-Rate Control (V/I)
- Internal Resistance Programming Simulation
- · Local / Remote Sensing software controlled
- Built-In Remote Isolated Analog Program/Monitor and Control Interface
- Protection functions (OVP, UVP, UVL, FOLD (CV/CC), OCL, OTP, AC FAIL)
- Fan speed profile controlled by ambient temperature and load
- Certified LabWindows™/CVI, LabVIEW™, and IVI Drivers
- Optional EtherCAT, Modbus-TCP, IEEE (488.2) Interfaces
- 19" Rack Mount capability for ATE and OEM application
- Scalable Power Systems
- Parallel Systems with Auto-Configure
- Worldwide Safety Agency approvals
- CE Mark for Low Voltage, EMC and RoHS3 Directives
- Five year warranty

# **Applications**

**G***E***NESYS**<sup>™</sup> power supplies have been designed to meet the demands of a wide variety of applications.

Test & Measurement systems, Component Device Testing, Manufacturing and process control.

Semiconductor Processing & Burn-In, Aerospace & Satellite Testing, Medical Imaging, Green Technology.

**Higher power systems** can be configured with up to four 1.5kW units. Each unit is 1U with zero space between them (zero stack).

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

# GH1kW/1.5kW Front Panel Description



- 1. Input Power ON/OFF Switch
- 2. Air Intake allows zero stacking for maximum system flexibility and power density.
- 3. Reliable Detent Encoders for settings and Menu navigation.
- 4. High Contrast/Brightness display with wide viewing angle, 16 segment LCD
- 5. Function/Status LEDs: Active modes and function indicators
- 6. Pushbuttons allow flexible user configuration

# GH1kW/1.5kW Rear Panel Description



- 1. Isolated Analog Programming, Monitoring and other control connector (DB26 Female)
- 2. USB Interface connector (Type B).
- 3. RS-232/RS-485 IN/OUT Remote Digital Interface (RJ-45 type) for Multi-Drop connection
- 4. LAN (LXI 1.5) Interface connector (RJ-45 type with LAN status indicators).
- 5. Auto paralleling Bus connectors (mini I/O type) for connecting Master unit-to-Slave and Slave unit-to-Slave unit.
- 6. Remote/Local Output Voltage Sense Connections (spring cage).
- 7. Output Connections: Rugged busbars (shown) for models up to and including 100V Output; Output connector: PHOENIX CONTACT GIC 2.5/4-G-7,62 for models with Outputs >100V. Plug connector: PHOENIX CONTACT GIC 2.5/4-ST-7,62 for models with Outputs >100V.
- GH1.5kW Input: 85~265VAC, Single Phase, 50/60 Hz.
  AC Input Connector: PHOENIX CONTACT Power Combicon PC 5/3-G-7,62
  AC Input Plug Connector: PHOENIX CONTACT Power Combicon PC 5/3-STCL1-7,62
  Series with strain relief. (Model shown) GH1kW AC Input Connector: IEC320 C16.
- 9. Optional Interface Position for IEEE 488.2 SCPI or AnyBus Interface.
- 10. Exhaust air assures reliable operation when units are zero stacked.
- 11. Functional Ground connection (M3x8mm screw).
- 12. Reset button. Set default Power Supply settings.

# Front Panel Display MENU/CONTROL buttons:



# Front Panel Display indicators



# GENESYS<sup>™</sup> GHB1kW/1.5kW Series Blank Front Panel (ATE version)



A Blank Front Panel is available for applications where the front panel display and controls are not required and only remote interface (Digital/Analog) is needed.

The Blank Front Panel option has all the standard product functions and features except the display. The power supply can be controlled via the rear panel Remote Digital Interface

(LAN, USB, RS-232/RS-485) or via the Remote Isolated Analog Interface.

# GENESYS™ Parallel and Series Configurations

### Parallel operation - Master/Slave:

Auto paralleling Scalable Master-Slave Operation. Active current sharing allows up to four identical units to be connected

Total real current is programmed, measured and reported by the Master. Up to four supplies operate as one.

### **Series operation**

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

# Multi-Drop Remote Programming via Communication Interface

Standard Built-in LAN, USB, RS-232 & RS-485 allows "Multi-Drop" daisy-chain control of up to 31 Power supplies on the same communication bus. Can be daisy chained via built-in RS-485 Interface.

- First unit is LAN, USB, RS-232, RS-485, etc.
- All other units use RS-485 daisy chain with linking cable.



LAN, USB, RS-232, RS-485, IEEE, AnyBus

Standard Unit - zero stacked up to 4 units



# **Graphical User Interface**

Advanced "Virtual Front Panel" allows programming and monitoring unit(s) with or without front panel display.

- 1. Control and monitor up-to 31 units with "Address" bar
- 2. Front panel set-up menu control (PROGram, SYSTem, CONFiguration, PROTection and COMMunication)
- 3. Informative "Parameters" status bar
- 4. Individual unit and Global command control
- 5. Data logging including errors, events and recovery
- 6. Realtime Graph and Waveform creator, store/load sequence.
- 7. Solar array mode calculate MPP (Max Peak Power) for solar array.
- 8. Registers View: Operation Status, Fault, Event Status, ENABLE and INTERLOCK signals.
- 9. Remote communication state LOC, REM, LLO.
- 10. Programmed signals 1&2



# *How to order GH1kW/1.5kW - Power Supply Identification / Accessories*

GH	10	- 150 -			
Series Name	Output	Output	Interface Options	AC Cord Options only for 1kW	Accessories Options
Front Panel Type	Voltage	Current		Region: E - Europe	M - Printed *User Manual
Empty: standard	(0~10V)	(0~150A)		U - North America	* User Manual & GUI are
B: Blank Front Pane	1			J - Japan	P - Bus Parralleling Cable
AC Inputs (All N	lodels)		▼	C - China	
1Ø, 85 ~ 265Vac				I - Middle East	
Interface Optio	ons (Factory	installed)	P/N		
LAN (LXI 1.5 complia	ant with Multi-Dr	op capability)- built-in	-		
USB 2.0 compliant	with Multi-Drop	capability - built-in	-		
RS-232/RS-485 - k	ouilt-in		-		
Isolated Analog Pro (5V/10V Pgm/Mon v	ogram/Monitor In with 600V isolati	nterface on) - built-in	-		
IEEE (488.2 & SCPI c	ompliant with Mu	Iti-Drop capability installed)	IEEE		
Modbus-TCP			MDBS		
EtherCAT			ECAT		

### **Models 1kW**

Model	Voltage (V)	Current (A)	Power (W)	Model	Voltage (V)	Current (A)	Power (W)
GH10-100	0~10V	0~100	1000	GH80-12.5	0~80V	0~12.5	1000
GH20-50	0~20V	0~50	1000	GH100-10	0~100V	0~10	1000
GH30-34	0~30V	0~34	1020	GH150-7	0~150V	0~7	1050
GH40-25	0~40V	0~25	1000	GH300-3.5	0~300V	0~3.5	1050
GH60-17	0~60V	0~17	1020	GH600-1.7	0~600V	0~1.7	1020

### Models 1.5kW

Model	Voltage (V)	Current (A)	Power (W)	Model	Voltage (V)	Current (A)	Power (W)
GH10-150	0~10V	0~150	1500	GH80-19	0~80V	0~19	1520
GH20-75	0~20V	0~75	1500	GH100-15	0~100V	0~15	1500
GH30-50	0~30V	0~50	1500	GH150-10	0~150V	0~10	1500
GH40-38	0~40V	0~38	1520	GH300-5	0~300V	0~5	1500
GH60-25	0~60V	0~25	1500	GH600-2.6	0~600V	0~2.6	1560

## **Accessories**

# Rack Mounting applications P/N:GH/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 GH1kW/1.5kW

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

# Single unit installation

Single GH1kW/1.5kW power supply in a standard 19" rack in 1U(1.75") height

# **Dual unit installation**

Two GH1kW/1.5kW power supplies side-by-side in a standard 19" rack in 1U (1.75") height

# Benchtop applications Multi Output P/N:GH/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 GH1kW/1.5kW two units one on top of the other use option kit **P/N:GH/MO-2U** 







# GENESYS<sup>™</sup> GH1kW SERIES SPECIFICATIONS

OUTPUT RATING	GH	10-100	20-50	30-34	40-25	60-17	80-19	100-10	150-7	300-3.5	600-17
1 Bated output voltage(*1)	v	10 100	20 30	30	40 25	60	80	100 10	150	300	600
2.Rated output current (*2)	Å	100	50	34	25	17	12.5	100	7	3.5	1.7
3.Rated output power	W	1000	1000	1020	1000	1020	1000	1000	1050	1050	1020
		10	20	20	40	60		100	150	200	600
	V	10	20	30 Starts Dha	40	60	80	100	150	300	600
1.input voltage/freq. (*3)		85~265Vac, co	ntinuous, 4/~6	3HZ,SINGIE Pha	se						
2. Maximum input current at 100% load (100/200)	A	12.5/0.5	0.00 0 2001/-								
4 Efficiency at 100 Vac /200Vac, rated output (*17)	0/4	0.99@100Vac	0.98 @ 200Va	c, rated output	07/00	97/90	97/90	<u> </u>	00/00	<u> </u>	<u> </u>
5 Inrush current (*5)	Δ	Less than 50A	0//05	07/05	0//05	0//05	0//05	00/50	00/50	00/90	00/90
							1				
CONSTANT VOLTAGE MODE	V	10	20	30	40	60	80	100	150	300	600
1.Max. Line regulation (*6)		0.01% of rated	output voltage	2							
2.Max. Load regulation (*7)		0.01% of rated	output voltage	+2mV							
3.Ripple and noise (p-p, 20MHz) (*8)	mV	50	50	50	60	60	75	75	75	200	500
4.Ripple r.m.s. 5Hz~1MHz (*8)	mV	6	6	6	7	7	10	20	20	50	100
5.Temperature coefficient	PPM/°C	50PPM/°C fron	n rated output	voltage, followi	ng 30 minutes	warm-up.					
6 Temperature stability		0.01% of rated	Vout over 8hrs	interval followi	ing 30 minutes	warm-up Cons	tant line load 8	& temn			
7 Warm-up drift		Less than 0.010	% of rated outp	ut voltage+2m	V over 30 minut	tes following n	ower on	a temp.			
2. Demote come come constitue (view (#10)		2	ess than 0.01% of rated output voltage+zinv over so minutes following power on.								
8.Remote sense compensation/wire (* 10)	V	2	2	5	5	5	5	5	5	5	5
9.Up-prog. Response time (*11)	mS	35	35	35	35	35	35	40	50	100	100
10 Down-prog response time: Full load (*12)	mS	30	30	60	60	60	60	80	120	220	220
No load (*12)	mS	500	700	900	1200	1500	1700	2000	2500	3300	3500
11.Transient response time	mS	Time for outpu	ut voltage to re	over within 0.5	% of its rated o	utput for a loa	d change 10~90	0% of rated out	put current. Ou	tput set-point: 1	0~100%,
		Local sense. Le	ess than 1.5mS,	tor 10V models	. Less than 1m	, tor models up	to and includi	ng 100V. 2mS f	or models abov	e 100V.	
12.Start up delay	Sec	Less than 6 Sec									
13.Hold-up time	mS	20ms typical, r	ated output po	wer							
CONSTANT CURRENT MODE	V	10	20	30	40	60	80	100	150	300	600
1 Max Line regulation (*6)	v	0.01% of rated		30	10	50	50	100	1.50	500	000
2 Max Load regulation (*0)		0.01% of rated	output current	. +2111A							
2. Max. Lodu regulation (19)		0.02% OF rated	output current	TJIIIA			.20	.00	.10		
3.Ripple r.m.s. @ rated voltage. B.W 5HZ~IMHZ. (*13)	mA	≤420	≤160	≤100	≤60	≤50	≤30	≤20	≤10	≤8	≤5
5.Temperature coefficient	PPM/°C	10V~100V 1	00PPM/°C from	n rated output o	urrent, followi	ng 30 minutes v	warm-up.				
		150V~600V 7	'0PPM/ºC from	rated output cu	ırrent, followin	g 30 minutes w	arm-up.				
6.Temperature stability		0.02% of rated	lout over 8hrs.	interval follow	ing 30 minutes	warm-up. Cons	stant line, load &	& temperature.			
7.14		10V~100V model: Less than +/-0.25% of rated output current over 30 minutes following power on.									
7. warm-up drift		150V~600V: Le	ess than +/-0.15	% of rated outp	ut current over	30 minutes fol	lowing power o	on.			
							•••				
ANALOG PROGRAMMING AND MONITORING (ISOLATEL	FROM I	HEOUIPUI)				-					
1.Vout voltage programming		0~100%, 0~5V	or 0~10V, user	selectable. Acc	uracy and linea	rity: +/-0.15% c	f rated Vout.				
2.lout voltage programming (*14)		0~100%, 0~5V	or 0~10V, user	selectable. Acc	uracy and linea	rity: +/-0.4% of	rated lout.				
3.Vout resistor programming		0~100%, 0~5/1	10Kohm full sca	le, user selecta	ble. Accuracy a	nd linearity: +/-	0.5% of rated V	out.			
4.lout resistor programming (*14)		0~100%, 0~5/1	10Kohm full sca	le, user selecta	ble. Accuracy a	nd linearity: +/-	0.5% of rated lo	out.			
5.Output voltage monitor		0~5V or 0~10V	, user selectabl	e. Accuracy: +/-	0.5% of rated V	/out.					
6.Output current monitor (*14)		0~5V or 0~10V	user selectabl	e. Accuracy: +/-	0.5% of rated l	out.					
			,								
SIGNALS AND CONTROLS (ISOLATED FROM THE OUTPU	T)										
1. Power supply OK #1 signal		Power supply	output monito	. Open collecto	or. Output On: C	n. Output Off:	Off. Maximum \	/oltage: 30V, M	aximum Sink Cı	urrent: 10mA.	
2. CV/CC signal		CV/CC Monitor	r. Open collecto	or. CC mode: On	. CV mode: Off.	Maximum Volt	age: 30V, Maxir	num Sink Curre	nt: 10mA.		
3. LOCAL/REMOTE Analog control		Enable/Disable	e analog progra	amming contro	l by electrical s	ignal or dry cor	tact. Remote: 0	~0.6V or short.	Local: 2~30V o	r open.	
4. LOCAL/REMOTE Analog signal		analog prograi	mming control	monitor signal.	Open collector.	Remote: On. Lo	cal: Off. Maxim	um Voltage: 30\	/, Maximum Sin	k Current: 10mA	
5. ENABLE/DISABLE signal		Enable/Disable	e PS output by	electrical signal	l or dry contact	. 0~0.6V or sho	rt, 2~30V or one	en. User selecta	ble logic.		
6. INTERLOCK (ILC) control		Enable/Disable	e PS output by	electrical signal	or dry contact	Remote 0~04	V or short Loc	al: 2~30V or one	en.		
7 Programmed signals	-	Two open drai	n programmah	le signale Mari	mum voltage 7	5V Maximum	ink current 100	mA (Shuntod h			
		Maximum I		oltano - 0 00	Minimum k	nh loval innut	voltage - 2 5	Mavimum L	igh loval incom	t - 5\/ positiv	edac
8. TRIGGER IN / TRIGGER OUT signals		trigger: tw=1	Ous minimum	. Tr,Tf=1us Ma	ximum. Min c	lelay betweer	1 2 pulses 1ms	v, iviaxi1110111 N	ngi i level inpu		euge
9. DAISY IN/SO control signal		By electrical Ve	oltage: 0~0.6V/	2~30V or drv co	ontact.	,					
10 DAISY OUT/PS_OK #2 signal		4~5V=0K 0V/	5000hm imper	lance)=Fail							
				ance/=rail							
FUNCTIONS AND FEATURES											
1. Parallel operation		Possible. Up to	4 identical uni	ts in Master/Sla	ve mode. Refer	to instruction	manual.				
2. Series operation		Possible. Two i	dentical units.	Refer to instruc	tion manual.						
3. Daisy chain		Power supplie	s can be conne	cted in Daisy ch	ain to synchro	nize their turn-	on and turn-off				
4. Constant power control		Limits the out	out power to a	proggrammed	value. Program	ming via the co	mmunication	ports or the from	nt panel		
5 Output resistance control		Emulates corio	s resistance De	sistance range	1~1000m0 P	ogramming vis	the communic	ation ports or t	the front nanol		
		Programma-L	Output size	a Output fall -	ow rate Drosse	ograming via	0.0001-000.00		Soc Drogram	ing via the com	munication
6. Slew rate control		ports or the fre	e Output rise ar ont panel.	iu Output fail Sl	ew rate. Progra	mining range:	0.0001~999.99	v/illsec. of A/m	isec. Programm	ing via the com	munication
7. Arbitrary waveforms		Profiles of up t	o 100 stens car	be stored in 4	memory cells	Activation by co	ommand via the	communicatio	on ports or by th	he front nanel	
PROGRAMMING AND READBACK (USB, LAN,	v	10	20	30	40	60	80	100	150	300	600
K5232/485, Optional IEEE (*16) Interfaces)											
1.Vout programming accuracy (*15)		0.05% of rated	output voltage	9							
2.lout programming accuracy (*14)		0.1% of actual	output current	+0.2% of rated	output current						
3.Vout programming resolution		0.002% of rated output voltage									
4.lout programming resolution		0.0025% of rated output current									
5.Vout readback accuracy		0.05% of rated	doutput voltag	e							
6.lout readback accuracy (*14)		0.2% of rated of	output current								
7Vout readback resolution (of rated output voltage)	06	0.011%	0.006%	0.004%	0.003%	0.002%	0.002%	0.011%	0.007%	0.004%	0.002%
R lout readback resolution (of rated output voitage)	0/	0.0110/	0.000/0	0.0040/	0.005%	0.002/0	0.000270	0.0110/	0.0150/	0.0040/	0.002/0
[onour reauback resolution (or fated output current)]	70	0.01170	0.00370	0.00470	0.00070	0.00770	0.00970	0.01170	0.01370	0.00470	0.007 70

# GENESYS<sup>™</sup> GH1.5kW SERIES SPECIFICATIONS

OUTPUT RATING	GH	10-150	20-75	30-50	40-38	60-25	80-19	100-15	150-10	300-5	600-2.6	
1.Bated output voltage(*1)	V	10	20	30	40	60	80	100	150	300	600	
2.Rated output current (*2)	A	150	75	50	38	25	19	15	10	5	2.6	
3.Rated output power	W	1500	1500	1500	1520	1500	1520	1500	1500	1500	1560	
		10	20	20	40	<u> </u>		100	150	200	600	
	V	10	20	30 Stile Circela Dha	40	60	80	100	150	300	600	
A Maximum Input surrent at 100% load (100/200)		85~265 Vac, cc	ontinuous, 47~6	3HZ, SINGle Pha	se							
2. Maximum input current at 100% load (100/200)	A	10.3/9	0.02 @ 2001/a	s rated output								
4 Efficiency at 100 Vac /200Vac rated output (*10)	0/-	0.99@100vac	0.96@200Vd	07/00	97/90	97/90	97/90	00/00	<u>88/00</u>	<u> </u>	00/00	
4.Efficiency at 100 vac/200vac, fated output (* 19)	90 A	00/00	0//09	07/09	0//09	0//09	0//09	00/90	66/90	86/90	00/90	
	~	Less than JOA				1	1		1	1		
CONSTANT VOLTAGE MODE	V	10	20	30	40	60	80	100	150	300	600	
1.Max. Line regulation (*6)		0.01% of rated	l output voltage	2								
2.Max. Load regulation (*7)		0.01% of rated	l output voltage	+2mV		-		-				
3.Ripple and noise (p-p, 20MHz) (*8)	mV	50	50	50	60	60	75	130	75	180	500	
4.Ripple r.m.s. 5Hz~1MHz (*8)	mV	6	6	6	7	7	8	30	20	45	100	
5.Temperature coefficient	PPM/°C	50PPM/°C fro	m rated output	voltage, followi	na 30 minutes	warm-up.						
6.Temperature stability		0.01% of rated	Vout over 8hrs	interval followi	ng 30 minutes	warm-up. Cons	tant line. load 8	k temp.				
7 Warm-up drift		Less than 0.01	% of rated outp	ut voltage+2m	/ over 30 minut	es following n	ower on					
8 Pomoto conco componention (wire (*10)	v	2005 11011 0.01	2	s	5	cs to to to the pro-	5 5	5	5	5	5	
Ollo prog Posponse time (*11)	- w	2	2	20	20	20	20	20	20	20	40	
		20	20	20	20	20	20	20	30	30	40	
10.Down-prog.response time:	ms	20	20	20	30	30	50	50	60	70	80	
No load (*12)	mS	300	500	600	900	1200	1300	1/00	2200	2/00	3000	
11.Transient response time	mS	I lime for outp	ut voltage to rec	cover within 0.5	% of its rated o	utput for a load	d change 10~90	1% of rated out	put current. Ou	tput set-point:	10~100%,	
12 Start up delay	Ser											
13 Hold-up time	m	20ms typical	rated output po	wer								
		- some cypical,	.a.ca output pu									
CONSTANT CURRENT MODE	V	10	20	30	40	60	80	100	150	300	600	
1.Max. Line regulation (*6)		0.01% of rated	output current	. +2mA								
2.Max. Load regulation (*9)		0.02% of rated	l output current	. +5mA								
3.Ripple r.m.s. @ rated voltage. B.W 5Hz~1MHz. (*13)	mA	≤250	≤130	≤100	≤60	≤50	≤30	≤40	≤10	≤8	≤5	
		10V~100V	100PPM/ºC from	n rated output o	urrent, followii	ng 30 minutes v	warm-up.					
5.1emperature coefficient	PPM/°C	150V~600V	70PPM/ºC from	rated output cu	rrent, followin	g 30 minutes w	arm-up.					
6.Temperature stability		0.01% of rated lout over 8hrs. interval following 30 minutes warm-up. Constant line, load & temperature.										
		10V~100V model: Less than +/-0.25% of rated output current over 30 minutes following power on.										
7. Warm-up drift		150V~600V: L	ess than +/-0.15	% of rated outp	ut current over	30 minutes fol	lowing power o	n.				
ANALOG PROGRAMMING AND MONITORING (ISOLATEL	J FROM I	HE OUTPUT)					6 . INC .					
1.Vout voltage programming		0~100%, 0~5	/ or 0~10V, user	selectable. Acc	uracy and linea	rity: +/-0.15% o	f rated Vout.					
2.lout voltage programming (*14)		0~100%, 0~5\	/ or 0~10V, user	selectable. Acc	uracy and linea	rity: +/-0.4% of	rated lout.					
3.Vout resistor programming		0~100%, 0~5/	10Kohm full sca	le, user selecta	ole. Accuracy a	nd linearity: +/-	0.5% of rated V	out.				
4.lout resistor programming (*14)		0~100%, 0~5/	10Kohm full sca	le, user selecta	ole. Accuracy a	nd linearity: +/-	0.5% of rated lo	out.				
5.Output voltage monitor		0~5V or 0~10	/, user selectabl	e. Accuracy: +/-	0.5% of rated V	out.						
6.Output current monitor (*14)		0~5V or 0~10V, user selectable. Accuracy: +/-0.5% of rated lout.										
SIGNALS AND CONTROLS (ISOLATED FROM THE OUTPUT	T)								-			
1 Devene averable OK #1 signal	1)	Deverage		0	- 0	0.000	04 Maria	(- h 20) / M		10m A		
1. Power supply OK #1 signal		Power supply	output monitor	. Open collecto	r. Output On: C	n. Output Off:		/oitage: 30V, IVIa	aximum Sink Cl	urrent: IUMA.		
		Cerce women, open conector, comore on, comore on, and and and work and a solver and										
3. LOCAL/REMOTE Analog control		Enable/Disable analog programming control by electrical signal or dry contact. Remote: 0~0.6V or short. Local: 2~30V or open.										
4. LOCAL/REMOTE Analog signal		analog programming control monitor signal. Open collector. Remote: On. Local: Off. Maximum Voltage: 30V, Maximum Sink Current: 10mA.										
5. ENABLE/DISABLE signal		Enable/Disable PS output by electrical signal or dry contact. 0~0.6V or short, 2~30V or open. User selectable logic.										
6. INTERLOCK (ILC) control		Enable/Disabl	e PS output by	electrical signal	or dry contact	.Remote: 0~0.6	6V or short. Loca	al: 2~30V or ope	en.			
7. Programmed signals		Two open dra	in programmab	le signals. Maxi	mum voltage 2	5V, Maximum s	ink current 100	mA (Shunted b	y 27V zener)			
8. TRIGGER IN / TRIGGER OUT signals		Maximum lo	w level input v	oltage = 0.8V	Minimum hig	h level input	voltage = 2.5\	/, Maximum h	igh level inpu	t = 5V positive	e edge	
	-	trigger: tw=10us minimum. Tr,Tf=1us Maximum, Min delay between 2 pulses 1ms.										
9. DAISY_IN/SO control signal		By electrical V	oltage: 0~0.6V/	2~30V or dry co	ntact.							
10. DAISY_OUT/PS_OK #2 signal		4~5V=OK, 0V	(500ohm impec	lance)=Fail								
FUNCTIONS AND FEATURES												
1. Parallel operation		Possible. Up to	o 4 identical uni	ts in Master/Sla	ve mode. Refer	to instruction	manual.					
2 Series operation		Possible Two	identical units	Refer to instruc	tion manual							
3 Daisy chain		Power supplie	s can be conne	rted in Daisy ch	ain to synchror	nize their turn-	on and turn-off					
4 Constant nower control		Limits the out	put power to a	aroggrammed	alue Program	ming via the co	mmunication r	orts or the from	at nanel			
5. Output registance control		Emulator cori	put power to a	sistanco rango:	1.100mO Pr		the communic	ation ports or t	ho front panel			
		Programmabl	o Output rico or	d Output fall d	1~1000IIIS2. FI	mming range:	0.0001-000.001	M/mSoc or A/m	Soc Programm	ing via the com	munication	
6. Slew rate control ports or the front panel.								intuncation				
7. Arbitrary waveforms		- Profiles of up to 100 steps can be stored in 4 memory cells. Activation by command via the communication ports or by the front panel.										
		. · · · · ·	1		,	.,						
RS232/485, Optional IEEE (*18) Interfaces)	V	10	20	30	40	60	80	100	150	300	600	
1.Vout programming accuracy (*15)		0.05% of rated	doutput voltage	2		1						
2.lout programming accuracy (*14)		0.1% of actual	output current	+0.2% of rated	output current							
3.Vout programming resolution	ramming resolution 0.002% of rated output voltage											
4 lout programming resolution		0.0025% of rat	ted output curre	- ent								
5 Vout readback accuracy	-	0.05% of rate	d output voltage	۵								
6 Jout readback accuracy (*1/)		0.2% of rated	output current	-								
7Vout readback resolution (of rated output voltage)	06	0.011%	0.006%	0.004%	0.003%	0.002%	0.0020%	0.011%	0.007%	0.004%	0.0020%	
8 Jout readback resolution (of rated output voltage)	04	0.010/	0.000%	0.007/0	0.0000/0	0.002/0	0.002/0	0.00704	0.01504	0.007/0	0.002/0	
[o.iout reauback resolution (or rated output current))	70	0.01%0	0.002%	0.005%	0.003%0	0.003%0	0.000%	0.007%	0.013%	0.003%0	0.004 %	

### GENESYS<sup>™</sup> GH1kW/1.5kW SERIES SPECIFICATIONS

PROTECTIVE FUNCTIONS		V	10	20	30	40	60	80	100	150	300	600			
1 Foldback protection			Output shut-down when power supply changes mode from CV or Power Limit to CC mode or from CC or Power Limit to CV mode.												
1.Foluback protection			User presetable. Reset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by commun								communication				
2.Over-voltage protection (OVP)			Output shut-d	own. Reset by	AC input recycl	e in autostart n	node, by OUTP	UT button, by r	ear panel or by	communicatio	n.				
3.Over -voltage programming ran	ge	V	0.5~12	1~24	2~36	2~44.1	5~66.15	5~88.2	5~110.25	5~165.37	5~330.75	5~661.5			
4. Over-voltage programming acc	uracy		+/-1% of rated	output voltag	e										
5.Output under voltage limit (UVL	.)		Prevents from	adjusting Vou	t below limit. D	oes not apply in	n analog progra	amming. Preset	by front panel	l or communica	ition port.				
6.0ver temperature protection	)		Brovonts adjus	e output. Auto	b recovery by at	itostart mode.									
8. Output under voltage protection	on (UVP)		Prevents adjust	revents adjustment of Vout below limit. P.S output turns Off during under voltage condition. Reset by AC input recycle in autostart mode, by ower Switch, by OUTPUT button, by rear panel or by communication.											
FRONT PANEL		1		Yultiple options with 2 Encoders											
1.Control functions			Minippe options with 2 bioders												
			VOUPOUT VIET Link filatioal adjust												
			Protection Functions - OVP, UVIUVP, Foldback, OCL. ENA. ILC												
			Communication Functions - Selection of LANLIFEE RS232 RS485.USB or Optional communication interface.												
			Output ON/OFF. Front Panel Lock.												
			Communication Functions - Selection of Baud Rate, Address, IP and communication language.												
			Analog Contro	Analog Control Functions - Selection Voltage/resistive programming, SV/10V, SK/10K programming											
			Analog Monito	or Functions - S	Selection of Vol	tage/Current M	lonitoring 5V/1	OV.							
2.Display			Vout: 4 digits,	accuracy: 0.05	% of rated outp	ut voltage +/-1	count.								
			lout: 4 digits, a	ccuracy: 0.2%	of rated output	t current +/-1 co	ount.								
3.Front Panel Buttons Indications			OUTPUT ON, A	LARM, PREVIE	W, FINE, COMM	UNICATION, PR	OTECTION,COM	NFIGURATION,	SYSTEM, SEQUI	ENCER.					
4. Front Panel Display Indications			Voltage, Current, Power, CV, CC, CP, External Voltage, External Current, Address, LFP, Autostart, Safetstart, Foldback V/I, Remote (communication), RS/USB/LAN/IEEE communication, Trigger, Load/Store Cell.												
ENVIRONMENTAL CONDITIONS															
1.Operating temperature			0~50°C, 100% load.												
2.Storage temperature			-30~85°C												
3 Operating humidity		%	20~90% RH (no condensation)												
A Storage humidity		0%													
F. Altitude		70	Departure (no conclusation).												
J.Attitude															
MECHANICAL		1						· .							
1.Cooling			Forced air cooling by internal fans. Air flow direction: from Front panel to power supply rear												
2.Weight		kg	Less than 3.5kg.												
3.Dimensions (WxHxD)		mm	W: 214, H: 43.6, D: 432 (Without busbars and busbars cover), W: 214, H: 43.6, D: 493 (Including busbars and busbars cover) (Refer to Outline drawing).												
4.Vibration			MIL-810G, method 514.6, Procedure I, test condition Annex C - 2.1.3.1												
5.Shock			Less than 20G, half sine, 11mSec. Unit is unpacked.												
SAFETY/EMC															
1.Applicable standards:	Safety GH1kW/1.5kW		UL61010-1, CS	A22.2 No. 6101	0-1, IEC61010-1,	, EN61010-1.									
1.1. Interface classification	GH1kW/1.5kW		Vout ≤40V Mo 60≤ Vout≤ 60	dels: Output, J 0V Models: Ou	1,J2,J3,J4,J5,J6, Itput, J8 (sense)	J7,J8 (sense) an are hazardous,	d ,J9 (communi , J1,J2,J3,J4,J5,J	ication options 6,J7 and J9 (coi	) are SELV. mmunication o	ptions) are SEL	v				
1.2 Withstand voltage	GH1kW/1.5kW		Vout ≤40V Mo 60V≤Vout≤100 Output - Grou 100 <vout≤600 Output - Grou</vout≤600 	dels: Input - Ou DV Models: Inpu nd: 1500VDC 1 DV Models: Inp nd: 2500VDC 1	utput (SELV): 42 ut - Output: 424 min, Input - Gro ut - Output: 424 min, Input - Gro	42VDC 1min, In 42VDC 1min, Inp 5000 2835VDC 42VDC 1min, Inp 5000 2835VDC	put - Ground: 2 out - SELV: 4242 1min. put - SELV: 4242 1min.	835VDC 1min. VDC 1min, Out VDC 1min, Out	put - SELV: 850) put - SELV: 127	VDC 1min, 5VDC 1min,					
1.3 Insulation resistance	1		100Mohm at 2	5°C, 70%RH. O	utput to Groun	d 500VDC									
2.Conducted emmision			IEC/EN61204-3	Industrial env	vironment. Ann	ex H table H 1	FCC Part 15-A	/CCI-A.							
3. Radiated emission			IEC/EN61204-	Industrial env	vironment. Ann	ex H table H 3	and H4. FCC Par	rt 15-A. VCCI-A							
4 EMC compliance	EMC (*4)		IEC/EN61204	Industrial on	vironment										
- Line compliance			1101204-3	, maustriai env	in on interne										

Unless otherwise noted, specifications are warranted over the ambient temperature range of 0° to 50°C

Unless otherwise noted, specifications are warranted over the ambient temperature range of 0° to 50°C NOTES: \*1: Minimum outrant is guaranteed to maximum 0.1% of rated output voltage. \*2: Minimum current is guaranteed to maximum 0.2% of rated output current. \*3: For cases where conformance to various safety standards (UL, IEC, etc...) is required, to be described as 100-240Vac (50/60Hz). \*4: Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m. \*5: Not including EMI filter inrush current, less than 0.2mSec. \*6: 85–132Vac or 170–265Vac. Constant load. \*7: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense. \*8: For 10V-300V models: Measured with JETA RC-913TC (1:1) probe. For 400~600V model: Measured with 100:1 probe. \*9: For load voltage change, equal to the unit voltage. Measured at the sensing point in Remote Sense. \*10: The maximum voltage on the power supply terminals must not exceed the rated voltage. \*11: From 10% to 19% of Rated Output Voltage, with rated, resistive load. \*12: From 90% to 10% of Rated Output Voltage. \*13: For 10V model, the ripple is measured at 10~100% of 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. For other models, the ripple is measured at 10~100% of 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. For other models, the ripple is measured at 10~100% of 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. For other models, the ripple is measured at 10~100% of 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. For other models, the ripple is measured at 10~100% of rated output voltage and ra

# Outline Drawing GENESYS<sup>™</sup> GH1kW (10V-100V)





# Outline Drawing GENESYS<sup>™</sup> GH1kW (150V-600V)

# TDK·Lambda

# Outline Drawing GENESYS<sup>™</sup> GHB1kW





# Outline Drawing GENESYS<sup>™</sup> GH1.5kW (10V-100V)

15



# Outline Drawing GENESYS<sup>™</sup> GH1.5kW (150V-600V)

# Outline Drawing GENESYS<sup>™</sup> GHB1.5kW



#### NORTH AMERICA

TDK-Lambda Americas Inc 405 Essex Rd. Neptune, NJ 07753 Tel: +1-732-922-9300 Fax: +1-732-922-1441 E-mail: sales@us.tdk-lambda.com www.us.lambda.tdk.com

### UK

TDK-Lambda UK Ltd. Kingsley Avenue Ilfracombe, Devon EX 34 8ES, United Kingdom Tel: +44-1271-856666 Fax: +44-1271-864894 E-mail: info@uk.tdk-lambda.com www.emea.lambda.tdk.com/uk

### FRANCE

TDK-Lambda France SAS 3 Avenue du Canada, Parc Technopolis - Bâtiment Sigma, 91940 Les Ulis – France CS 41077 Tel: +33 1 60 12 71 65 Fax: +33 1 60 12 71 66 E-mail: france@fr.tdk-lambda.com www.emea.lambda.tdk.com/fr

### GERMANY

TDK-Lambda Germany GmbH Karl-Bold-Str.40, D-77855 Achern, Germany Tel: +49-7841-666-0 Fax: +49-7841-500-0 E-mail: info.germany@de.tdk-lambda.com www.emea.lambda.tdk.com/de

#### AUSTRIA

TDK-Lambda Germany GmbH Austria Sales Office Aredstrasse 22, 2544 Leobersdorf, Austria Tel: +43-2256-65584 Fax: +43-2256-64512 E-mail: info@at.tdk-lambda.com www.emea.lambda.tdk.com/at

### ITALY

TDK-Lambda France Sas Succursale Italiana Via Giacomo Matteotti 62, 20092 Cinisello Balsamo (MI), Italia Tel: +39-02-6129-3863 Fax: +39-02-6129-0900 E-mail: info.italia@it.tdk-lambda.com www.emea.lambda.tdk.com/it

#### ISRAEL

TDK-Lambda Ltd. Sales Office: Alexander Yanai 1, Petah Tikva, 4927701, ISRAEL Tel: +972-3-9024-333 Fax: +972-3-9024-777 Plant: 56 Haharoshet St., Karmiel Industrial Zone 2165158, Israel Tel: +972-4-9887-491 Fax: +972- 4-9583-071

www.emea.lambda.tdk.com/il E-mail: info@tdk-lambda.co.il

#### Switzerland

TDK-Lambda Germany GmbH Switzerland Sales Office, Eichtalstr. 55 8634 Hombrechtikon - Switzerland Tel: +41 44 850 53 53 E-mail: info@ch.tdk-lambda.com www.emea.lambda.tdk.com/ch

### Denmark

TDK-Lambda Nordic Haderslevvej 36B, DK-6000 Kolding, Denmark TEL: +45-8853-8086 E-mail: info@dk.tdk-lambda.com www.emea.lambda.tdk.com/dk

TDK-Lambda EMEA www.emea.lambda.tdk.com

### JAPAN

#### **TDK-Lambda** Corporation

Nihonbashi Takashimaya Mitsui Bldg. 2-5-1 Nihonbashi, Chuo-ku, Tokyo 103-6128, JAPAN TEL: +81-3-6778-1113 FAX: +81-3-6778-1160 www.jp.lambda.tdk.com

### CHINA

TDK-Lambda (China) Electronics Co. Ltd, Shanghai Office 5th Floor Kehui Tower, 1188 Qinzhou Road (North), Xuhui District Shanghai 200233, China Tel: +86-21-6485-0777 Fax: +86-21-6485-0666 www.lambda.tdk.com.cn

Beijing Branch of TDK-Lambda (China) Electronic Co. Ltd. Room 12B11-12B12, Unit 7 Dacheng square, No.28 Xuanwumenxi Street, Xuanwu District Beijing, 100053, CHINA Tel: +86-10-6310-4872 Fax: +86-10-6310-4874 www.lambda.tdk.com.cn

Shenzhen Branch of TDK-Lambda (China) Electronics Co.Ltd. 69/F, Ping An Finance Centre, 5033 Yitian Road, Futian District, Shenzhen,China Tel: +86-755-83588261 Fax: +86-755-83588260 www.lambda.tdk.com.cn

### KOREA

TDK-Lambda Corporation Korea Branch Seocho-Dong,12F. Songnam Bldg. 273, Gangnam Daero, Seocho-Gu, Seoul 06730, Republic of Korea Tel: +82-2-3473-7051 Fax: +82-2-3472-9137 www.lambda.tdk.co.kr

#### SINGAPORE

TDK-Lambda Singapore Pte.Ltd. Blk 1008 Toa Payoh North # 07-01/03 Singapore 318996 Tel: +65-6251-7211 Fax: +65-6250-9171 www.sg.lambda.tdk.com

### INDIA

TDK India Private Limited. Power Supply Division #87, The Centrum, 4th Floor, Infantry Road, Bengaluru, Karnataka, -560 001, INDIA Tel: +91-80-40390660 Fax: +91-80-40390603

### MALAYSIA

TDK-Lambda Malaysia Sdn. Bhd. (Nilai Office) c/o TDK (Malaysia) Sdn. Bhd., Lot 709, Nilai Industrial Estate 71800 Nilai, Negeri Sembilan, MALAYSIA TEL: +60-6-797-8800 Fax: +60-6-797-8966

### **Local Distribution**

# hivolt.de GmbH & Co. KG

Oehleckerring 40 D-22419 Hamburg • Germany Tel: +49 40 537122-0 Fax: +49 40 537122-99 info@hivolt.de • www.hivolt.de