



GENESYS MGH1kW/1.5kW Series

Programmable DC Power Supplies Half-Rack 1kW/1.5kW in 1U Height

! Advanced Features Built-In!

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



TDK·Lambda

Innovating Reliable Power www.emea.lambda.tdk.com



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

Features include:

- 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

GENESYS™ 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



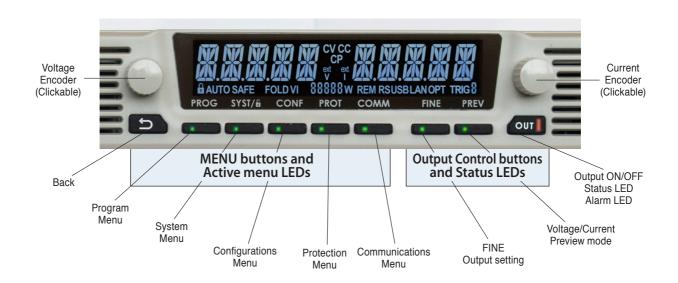
- 1. Input Power ON/OFF Switch
- 2. Air Intake allows zero stacking for maximum system flexibility and power density.
- 3. Reliable Detent Encoders for settings and Menu navigation.
- 4. High Contrast/Brightness display with wide viewing angle, 16 segment LCD
- 5. Function/Status LEDs: Active modes and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

GH1kW/1.5kW Rear Panel Description

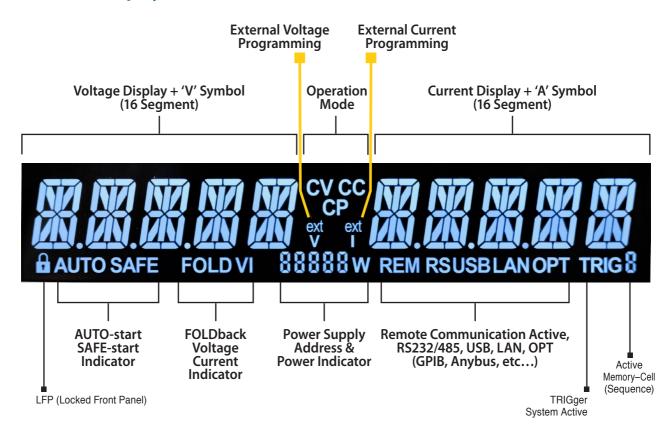


- 1. Isolated Analog Programming, Monitoring and other control connector (DB26 Female)
- 2. USB Interface connector (Type B).
- 3. RS-232/RS-485 IN/OUT Remote Digital Interface (RJ-45 type) for Multi-Drop connection
- 4. LAN (LXI 1.5) Interface connector (RJ-45 type with LAN status indicators).
- 5. 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™ 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. Standard Unit - zero stacked up to 4 units



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.



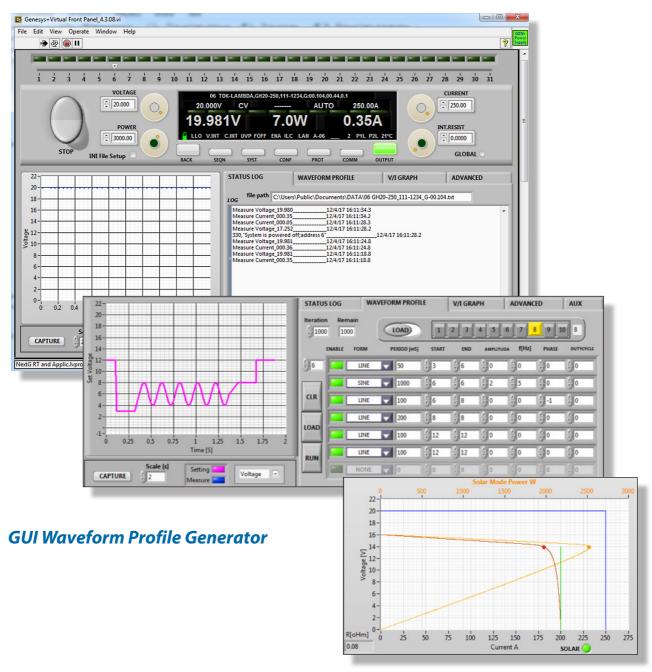


LAN, USB, RS-232, RS-485, IEEE, AnyBus

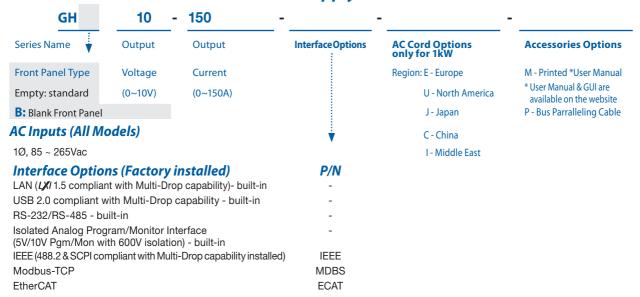
Graphical User Interface

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



Models 1kW

Model	Voltage (V)	Current (A)	Power (W)	Mode
GH10-100	0~10V	0~100	1000	GH80-
GH20-50	0~20V	0~50	1000	GH100
GH30-34	0~30V	0~34	1020	GH150
GH40-25	0~40V	0~25	1000	GH300
GH60-17	0~60V	0~17	1020	GH600

Model	Voltage (V)	Current (A)	Power (W)
GH80-12.5	0~80V	0~12.5	1000
GH100-10	0~100V	0~10	1000
GH150-7	0~150V	0~7	1050
GH300-3.5	0~300V	0~3.5	1050
GH600-1.7	0~600V	0~1.7	1020

Models 1.5kW

Model	Voltage (V)	Current (A)	Power (W)
GH10-150	0~10V	0~150	1500
GH20-75	0~20V	0~75	1500
GH30-50	0~30V	0~50	1500
GH40-38	0~40V	0~38	1520
GH60-25	0~60V	0~25	1500

Model	Voltage (V)	Current (A)	Power (W)
GH80-19	0~80V	0~19	1520
GH100-15	0~100V	0~15	1500
GH150-10	0~150V	0~10	1500
GH300-5	0~300V	0~5	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™ 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	600-1.7
1.Rated output voltage(*1)	V	10	20	30	40	60	80	100	150	300	600
2.Rated output current (*2)	Α	100	50	34	25	17	12.5	10	7	3.5	1.7
3.Rated output power	W	1000	1000	1020	1000	1020	1000	1000	1050	1050	1020
INPUT CHARACTERISTICS	V	10	20	30	40	60	80	100	150	300	600
1.Input voltage/freq. (*3)		85~265Vac, co	ntinuous, 47~6	3Hz,Single Phas	se	1			'		
2. Maximum Input current at 100% load (100/200)	Α	12.5/6.5									
3.Power Factor (Typ)				c, rated output			,			,	
4.Efficiency at 100 Vac/200Vac, rated output (*17)	%	86/88	87/89	87/89	87/89	87/89	87/89	88/90	88/90	88/90	88/90
5.Inrush current (*5)	A	Less than 50A									
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.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.					
5.Temperature stability		0.01% of rated	Vout over 8hrs	interval followi	ng 30 minutes	warm-up. Cons	tant line, load 8	temp.			
7. Warm-up drift		Less than 0.019	% of rated outp	ut voltage+2m\	√over 30 minu	tes following po	ower 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
Full load (*12)	mS	30	30	60	60	60	60	80	120	220	220
10.Down-prog.response time: No load (*12)	mS	500	700	900	1200	1500	1700	2000	2500	3300	3500
11.Transient response time	mS	Time for outpu	it voltage to red	cover within 0.5	% of its rated o	output for a load S, for models up	d change 10~90	% of rated out	put current. Ou	tput set-point:	10~100%,
<u> </u>				tor 10V models.	Less than 1m	s, tor models up	to and includir	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
I.Max. Line regulation (*6)		0.01% of rated	output current	. +2mA							
2.Max. Load regulation (*9)		0.02% of rated	output current	+5mA							
B.Ripple r.m.s. @ rated voltage. B.W 5Hz~1MHz. (*13)	mA	≤420	≤160	≤100	≤60	≤50	≤30	≤20	≤10	≤8	≤5
.Temperature coefficient	PPM/°C	10V~100V 1	00PPM/°C from	rated output c	urrent, followi	ng 30 minutes v	varm-up.				
.Temperature coefficient	PPIVI/ C	150V~600V 7	OPPM/°C from	rated output cu	ırrent, followin	g 30 minutes w	arm-up.				
.Temperature stability		0.02% of rated	lout over 8hrs.	interval followi	ing 30 minutes	warm-up. Cons	tant line, load 8	temperature.			
. Warm-up drift		10V~100V model: Less than +/-0.25% of rated output current over 30 minutes following power on. 150V~600V: Less than +/-0.15% of rated output current over 30 minutes following power on.									
ANALOG PROGRAMMING AND MONITORING (ISOLATE	D EROM T	HE OLITPLIT)									
I.Vout voltage programming			or 010V usor	solostable Ass	uracy and line:	arity: +/-0.15% o	frated Vout				
2.lout voltage programming (*14)						arity: +/-0.13% of					
3. Vout resistor programming						nd linearity: +/-		out		-	
1.lout resistor programming (*14)						nd linearity: +/-					
5.Output voltage monitor				e. Accuracy: +/-			0.5 /0 01 14104 10	,			
5.Output current monitor (*14)				e. Accuracy: +/-							
·		0 31 01 0 101	, user sereetas.		01570 01 14124 1						
SIGNALS AND CONTROLS (ISOLATED FROM THE OUTPU	T .										
1. Power supply OK #1 signal						On. Output Off:				urrent: 10mA.	
2. CV/CC signal					. CV mode: Off	Maximum Valt	age: 30V, Maxin	num Sink Curre	nt: 10mA.		
3. LOCAL/REMOTE Analog control											
4. LOCAL/REMOTE Analog signal		analog prograi	mmina control :		l by electrical s	ignal or dry con			Local: 2~30V o		
5. ENABLE/DISABLE signal				monitor signal.	l by electrical s Open collector	ignal or dry con . Remote: On. Lo	cal: Off. Maximu	ım Voltage: 30\	Local: 2~30V o /, Maximum Sin		١.
<u> </u>		Enable/Disable	e PS output by	monitor signal. (electrical signal	l by electrical s Open collector I or dry contact	ignal or dry con . Remote: On. Lo . 0~0.6V or sho	cal: Off. Maximu rt, 2~30V or ope	um Voltage: 30\ n. User selecta	Local: 2~30V o /, Maximum Sin ble logic.		١.
5. INTERLOCK (ILC) control		Enable/Disable Enable/Disable	PS output by PS output by	monitor signal. (electrical signal electrical signal	l by electrical s Open collector or dry contact or dry contact	ignal or dry con . Remote: On. Lo t. 0~0.6V or sho t. Remote: 0~0.6	ocal: Off. Maximu rt, 2~30V or ope oV or short. Loca	um Voltage: 30\ n. User selecta al: 2~30V or ope	Local: 2~30V o /, Maximum Sin ble logic. en.		λ.
<u> </u>		Enable/Disable Enable/Disable Two open drai	e PS output by e PS output by n programmab	monitor signal. (electrical signal electrical signal le signals. Maxi	by electrical some collector or dry contact or dry contact mum voltage 2	ignal or dry con . Remote: On. Lo . 0~0.6V or shor . Remote: 0~0.6 25V, Maximum s	ocal: Off. Maximu rt, 2~30V or ope 6V or short. Loca ink current 100	um Voltage: 30\ n. User selecta al: 2~30V or ope mA (Shunted b	Local: 2~30V or /, Maximum Sin ble logic. en. y 27V zener)	k Current: 10mA	
5. INTERLOCK (ILC) control 7. Programmed signals		Enable/Disable Enable/Disable Two open drai Maximum lov	e PS output by e PS output by n programmab w level input v	monitor signal. electrical signal electrical signal le signals. Maxi	by electrical s Open collector or dry contact or dry contact mum voltage 2 ,Minimum hie	ignal or dry con Remote: On. Lo C. 0~0.6V or shou E. Remote: 0~0.6 25V, Maximum s gh level input	rt, 2~30V or ope oV or short. Loca ink current 100 voltage = 2.5V	um Voltage: 30\ en. User selecta al: 2~30V or ope mA (Shunted b //, Maximum h	Local: 2~30V or /, Maximum Sin ble logic. en. y 27V zener)	k Current: 10mA	
5. INTERLOCK (ILC) control 7. Programmed signals 8. TRIGGER IN / TRIGGER OUT signals		Enable/Disable Enable/Disable Two open drai Maximum lov trigger: tw=1	e PS output by e PS output by n programmab w level input v Ous minimum	monitor signal. (electrical signal electrical signal le signals. Maxi /oltage = 0.8V ı. Tr,Tf=1us Ma	by electrical some collector or dry contact or dry contact or dry contact mum voltage 2, Minimum hie ximum, Min of the collection of the c	ignal or dry con . Remote: On. Lo . 0~0.6V or shor . Remote: 0~0.6 25V, Maximum s	rt, 2~30V or ope oV or short. Loca ink current 100 voltage = 2.5V	um Voltage: 30\ en. User selecta al: 2~30V or ope mA (Shunted b //, Maximum h	Local: 2~30V or /, Maximum Sin ble logic. en. y 27V zener)	k Current: 10mA	
5. INTERLOCK (ILC) control 7. Programmed signals 8. TRIGGER IN / TRIGGER OUT signals 9. DAISY_IN/SO control signal		Enable/Disable Enable/Disable Two open drai Maximum lov trigger: tw=1 By electrical Ve	e PS output by one PS output by one PS output by one programmabow level input of Ous minimum oltage: 0~0.6V/	monitor signal. (electrical signal electrical signal le signals. Maxi voltage = 0.8V 1. Tr,Tf=1us Ma 2~30V or dry co	by electrical some collector or dry contact or dry contact or dry contact mum voltage 2, Minimum hie ximum, Min of the collection of the c	ignal or dry con Remote: On. Lo C. 0~0.6V or shou E. Remote: 0~0.6 25V, Maximum s gh level input	rt, 2~30V or ope oV or short. Loca ink current 100 voltage = 2.5V	um Voltage: 30\ en. User selecta al: 2~30V or ope mA (Shunted b //, Maximum h	Local: 2~30V or /, Maximum Sin ble logic. en. y 27V zener)	k Current: 10mA	
5. INTERLOCK (ILC) control 7. Programmed signals 8. TRIGGER IN / TRIGGER OUT signals 9. DAISY_IN/SO control signal 10. DAISY_OUT/PS_OK #2 signal		Enable/Disable Enable/Disable Two open drai Maximum lov trigger: tw=1 By electrical Ve	e PS output by e PS output by n programmab w level input v Ous minimum	monitor signal. (electrical signal electrical signal le signals. Maxi voltage = 0.8V 1. Tr,Tf=1us Ma 2~30V or dry co	by electrical some collector or dry contact or dry contact or dry contact mum voltage 2, Minimum hie ximum, Min of the collection of the c	ignal or dry con Remote: On. Lo C. 0~0.6V or shou E. Remote: 0~0.6 25V, Maximum s gh level input	rt, 2~30V or ope oV or short. Loca ink current 100 voltage = 2.5V	um Voltage: 30\ en. User selecta al: 2~30V or ope mA (Shunted b //, Maximum h	Local: 2~30V or /, Maximum Sin ble logic. en. y 27V zener)	k Current: 10mA	
5. INTERLOCK (ILC) control 7. Programmed signals 8. TRIGGER IN / TRIGGER OUT signals 9. DAISY_IN/SO control signal 10. DAISY_OUT/PS_OK #2 signal FUNCTIONS AND FEATURES		Enable/Disable Enable/Disable Two open drai Maximum lov trigger: tw=1 By electrical Vd 4~5V=OK, 0V (e PS output by e PS output by n programmab w level input v Ous minimum oltage: 0~0.6V/ 5000hm imped	monitor signal. u electrical signal electrical signal le signals. Maxi voltage = 0.8V 1. Tr,Tf=1us Ma 2~30V or dry co lance)=Fail	l by electrical s Open collector or dry contact or dry contact mum voltage 2 Minimum hi ximum, Min o	ignal or dry con Remote: On. Lc Co-0.6V or shoi Remote: O-0.6 Style Maximum s gh level input delay betweer	cal: Off. Maximu rt, 2~30V or ope 6V or short. Loca ink current 100 voltage = 2.5\ 1 2 pulses 1ms.	um Voltage: 30\ en. User selecta al: 2~30V or ope mA (Shunted b //, Maximum h	Local: 2~30V or /, Maximum Sin ble logic. en. y 27V zener)	k Current: 10mA	
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5. INTERLOCK (ILC) control 7. Programmed signals 8. TRIGGER IN / TRIGGER OUT signals 9. DAISY_IN/50 control signal 10. DAISY_OUT/PS_OK #2 signal 5. UNCTIONS AND FEATURES 1. Parallel operation		Enable/Disable Enable/Disable Two open drai Maximum lov trigger: tw=1 By electrical Vc 4~5V=OK, 0V (e PS output by on Ps output on P	monitor signal. u electrical signal electrical signal le signals. Maxi voltage = 0.8V 1. Tr,Tf=1us Ma 2~30V or dry co lance)=Fail	l by electrical s Open collector or dry contact or dry contact mum voltage 2 Minimum hi ximum, Min o ontact.	ignal or dry con Remote: On. Lc Co-0.6V or shoi Remote: O-0.6 Style Maximum s gh level input delay betweer	cal: Off. Maximu rt, 2~30V or ope 6V or short. Loca ink current 100 voltage = 2.5\ 1 2 pulses 1ms.	um Voltage: 30\ en. User selecta al: 2~30V or ope mA (Shunted b //, Maximum h	Local: 2~30V or /, Maximum Sin ble logic. en. y 27V zener)	k Current: 10mA	
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GENESYS™ 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.Rated 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
INPUT CHARACTERISTICS	V	10	20	30	40	60	80	100	150	300	600
1.Input voltage/freq. (*3)			ntinuous, 47~6						100		
2. Maximum Input current at 100% load (100/200)	Α	18.5/9		. ,. <u>,</u>							
3.Power Factor (Typ)		0.99 @ 100Vac	0.98 @ 200Va	c, rated output	power.						
4.Efficiency at 100 Vac/200Vac, rated output (*19)	%	86/88	87/89	87/89	87/89	87/89	87/89	88/90	88/90	88/90	88/90
5.Inrush current (*5)	A	Less than 50A									
CONSTANT VOLTAGE MODE	V	10	20	30	40	60	80	100	150	300	600
1.Max. Line regulation (*6)			output voltage								
2.Max. Load regulation (*7)			output voltage								
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		n rated output		-						
6.Temperature stability							tant line, load &	k temn			
7. Warm-up drift			% of rated outp			<u>-</u> _		x terripi			
8.Remote sense compensation/wire (*10)	V	2	2	5	5	5	5	5	5	5	5
9.Up-prog. Response time (*11)	mS	20	20	20	20	20	20	20	30	30	40
Full load (*12)	mS	20	20	20	30	30	50	50	60	70	80
10.Down-prog.response time: Full load (*12) No load (*12)	mS	300	500	600	900	1200	1300	1700	2200	2700	3000
	III3										
11.Transient response time	mS	Local sense. Le	ac voicage to rec ess than 1mS, fo	r models up to	วง บา แร rated 0 and including 1	00V. 2mS. for n	d change 10~90 nodels above 10	770 OI TALEG OUT DOV.	put current. Ou	tput set-point:	10~100%,
12.Start up delay	Sec	Less than 6 Sec			9	,					
13.Hold-up time	mS		rated output po	wer			-			-	
			1								
CONSTANT CURRENT MODE	V	10	20	30	40	60	80	100	150	300	600
1.Max. Line regulation (*6)			output current								
2.Max. Load regulation (*9)			output current								
3.Ripple r.m.s. @ rated voltage. B.W 5Hz~1MHz. (*13)	mA	≤250	≤130	≤100	≤60	≤50	≤30	≤40	≤10	≤8	≤5
5.Temperature coefficient	PPM/°C		00PPM/°C from								
Sitemperature escriterent		150V~600V 7	OPPM/°C from	rated output cu	rrent, following	g 30 minutes w	arm-up.				
6.Temperature stability		0.01% of rated	lout over 8hrs.	interval followi	ng 30 minutes	warm-up. Cons	tant line, load 8	k temperature.	_	_	
7. Warm-up drift		10V~100V mo	del: Less than +,	/-0.25% of rated	l output curren	t over 30 minu	tes following po	ower on.		-	
7. Warm-up unit		150V~600V: Le	ess than +/-0.15	% of rated outp	ut current over	30 minutes fol	lowing power o	n.			
ANALOG PROGRAMMING AND MONITORING (ISOLATE	D FROM T	HE OUTPUT)									
1.Vout voltage programming			or 0~10V, user	selectable Acci	uracy and linea	rity: +/-0.15% c	of rated Vout				
2.lout voltage programming (*14)			or 0~10V, user								
3.Vout resistor programming					-		-0.5% of rated V	out			
4.lout resistor programming (*14)					-		0.5% of rated to				
5.Output voltage monitor			, user selectabl				0.5 /0 01 Tateu ic	out.			
6.Output current monitor (*14)			, user selectabl								
		054 01 0104	, user selectabl	e. Accuracy. +/	0.5 /0 01 14 (EU 1)	Jut.					
SIGNALS AND CONTROLS (ISOLATED FROM THE OUTPO	JT)										
1. Power supply OK #1 signal							Off. Maximum \			urrent: 10mA.	
2. CV/CC signal							age: 30V, Maxin		-		
3. LOCAL/REMOTE Analog control							tact. Remote: 0				
4. LOCAL/REMOTE Analog signal							cal: Off. Maximu			k Current: 10mA	١.
5. ENABLE/DISABLE signal					-		rt, 2~30V or ope				
6. INTERLOCK (ILC) control							6V or short. Loca				
7. Programmed signals		-					ink current 100		, 		
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
	+					eiay betweer	n 2 pulses 1ms				
9. DAISY_IN/SO control signal		-	oltage: 0~0.6V/		ntact.						
10. DAISY_OUT/PS_OK #2 signal		4~5V=OK, 0V	(500ohm imped	tance)=Fail							
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	_		identical units.								
3. Daisy chain										-	
		Power supplie	s can be conne	cted in Daisy ch	ain to synchror	nize their turn-	on and turn-off.				
4. Constant power control	_						mmunication p		nt panel.		
-		Limits the out	put power to a p	oroggrammed	value. Program	ming via the co	mmunication p	orts or the fro			
5. Output resistance control		Limits the out Emulates serie Programmable	put power to a per seresistance. Re e Output rise ar	oroggrammed v sistance range:	value. Program 1~1000mΩ. Pr	ming via the co ogramming via		oorts or the from	the front panel.		nmunication
-		Limits the out Emulates serie Programmable ports or the free	put power to a person to a per	proggrammed v sistance range: ad Output fall sl	value. Program 1~1000mΩ. Pr ew rate. Progra	ming via the co ogramming via mming range:	ommunication parties the communic	oorts or the from ation ports or t V/mSec. or A/m	the front panel. Sec. Programm	ning via the con	nmunication
5. Output resistance control		Limits the out Emulates serie Programmable ports or the free	put power to a person to a per	proggrammed v sistance range: ad Output fall sl	value. Program 1~1000mΩ. Pr ew rate. Progra	ming via the co ogramming via mming range:	mmunication parting the communic	oorts or the from ation ports or t V/mSec. or A/m	the front panel. Sec. Programm	ning via the con	nmunication
Output resistance control Slew rate control		Limits the out Emulates serie Programmable ports or the free	put power to a person to a per	proggrammed v sistance range: ad Output fall sl	value. Program 1~1000mΩ. Pr ew rate. Progra	ming via the co ogramming via mming range:	ommunication parties the communic 0.0001~999.99	oorts or the from ation ports or t V/mSec. or A/m	the front panel. Sec. Programm	ning via the con	nmunication 600
5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms PROGRAMMING AND READBACK (USB, LAN,		Limits the out Emulates serie Programmabl ports or the fro Profiles of up 1	put power to a per sesistance. Re e Output rise aront panel. to 100 steps can	oroggrammed v sistance range: ad Output fall sl be stored in 4	value. Program 1~1000mΩ. Pr ew rate. Progra memory cells. A	ming via the co ogramming via mming range: Activation by co	ommunication parties the communic 0.0001~999.99 command via the	oorts or the from ation ports or the V/mSec. or A/m communication	the front panel. Sec. Programm on ports or by the	ning via the con the front panel.	
5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional IEEE (*18) Interfaces)	 V	Limits the out Emulates serie Programmable ports or the free Profiles of up 1 10 0.05% of rated	put power to a per series resistance. Re e Output rise aront panel. to 100 steps can	oroggrammed visistance range: ad Output fall slube stored in 4 and 30	value. Program 1~1000mΩ. Pr ew rate. Progra memory cells. A	ming via the co ogramming via mming range: Activation by co	ommunication parties the communic 0.0001~999.99 command via the	oorts or the from ation ports or the V/mSec. or A/m communication	the front panel. Sec. Programm on ports or by the	ning via the con the front panel.	
5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional IEEE (*18) Interfaces) 1. Vout programming accuracy (*15)	 V	Limits the out Emulates serie Programmable ports or the fre Profiles of up t 10 0.05% of rated 0.1% of actual	put power to a per series resistance. Re e Output rise aront panel. To 100 steps can 20 output voltage	oroggrammed value of the sistance range: and Output fall slab be stored in 4 to 30 to 4 to 4 to 4 to 4 to 5 to 6	value. Program 1~1000mΩ. Pr ew rate. Progra memory cells. A	ming via the co ogramming via mming range: Activation by co	ommunication parties the communic 0.0001~999.99 command via the	oorts or the from ation ports or the V/mSec. or A/m communication	the front panel. Sec. Programm on ports or by the	ning via the con the front panel.	
5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional IEEE (*18) Interfaces) 1. Vout programming accuracy (*15) 2. lout programming accuracy (*14) 3. Vout programming resolution	 V	Limits the out Emulates serie Programmabl ports or the fre Profiles of up t 10 0.05% of rated 0.1% of actual 0.002% of rate	put power to a per serior panel. Serior pane	oroggrammed visistance range: ad Output fall slube stored in 4 to 30 et +0.2% of rated one	value. Program 1~1000mΩ. Pr ew rate. Progra memory cells. A	ming via the co ogramming via mming range: Activation by co	ommunication parties the communic 0.0001~999.99 command via the	oorts or the from ation ports or the V/mSec. or A/m communication	the front panel. Sec. Programm on ports or by the	ning via the con the front panel.	
5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional IEEE (*18) Interfaces) 1. Vout programming accuracy (*15) 2. lout programming accuracy (*14) 3. Vout programming resolution 4. lout programming resolution	V	Limits the out Emulates serie Programmabl, ports or the fre Profiles of up 1 0.05% of rated 0.1% of actual 0.002% of rate 0.0025% of rate	put power to a les resistance. Re e Output rise aront panel. so 100 steps can 20 output voltage output current-d output voltage ed output curred	oroggrammed of sistance range: ad Output fall slow be stored in 4 and the stored in 4	value. Program 1~1000mΩ. Pr ew rate. Progra memory cells. A	ming via the co ogramming via mming range: Activation by co	ommunication parties the communic 0.0001~999.99 command via the	oorts or the from ation ports or the V/mSec. or A/m communication	the front panel. Sec. Programm on ports or by the	ning via the con the front panel.	
5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional IEEE (*18) Interfaces) 1.Vout programming accuracy (*15) 2.lout programming accuracy (*14) 3.Vout programming resolution 4.lout programming resolution 5.Vout readback accuracy	V	Limits the out Emulates serie Programmabl ports or the fre Profiles of up 1 0.05% of rated 0.1% of actual 0.002% of rate 0.0025% of rate 0.005% of rate	put power to a les resistance. Re e Output rise aront panel. so 100 steps can 20 output voltage output current d output voltage ed output voltage d output volt	oroggrammed of sistance range: ad Output fall slow be stored in 4 and the stored in 4	value. Program 1~1000mΩ. Pr ew rate. Progra memory cells. A	ming via the co ogramming via mming range: Activation by co	ommunication parties the communic 0.0001~999.99 command via the	oorts or the from ation ports or the V/mSec. or A/m communication	the front panel. Sec. Programm on ports or by the	ning via the con the front panel.	
5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional IEEE (*18) Interfaces) 1.Vout programming accuracy (*15) 2.lout programming accuracy (*14) 3.Vout programming resolution 4.lout programming resolution 5.Vout readback accuracy 6.lout readback accuracy (*14)	V	Limits the out Emulates serie Programmablo ports or the fir Profiles of up t 10 0.05% of rated 0.1% of actual 0.002% of rate 0.0025% of rate 0.0025% of rate 0.025% of rate 0.2% of rated	put power to a los resistance. Re e Output rise aront panel. To 100 steps can 20 output voltage output current do output current do output current do output current do output current output output current output output output current output o	oroggrammed sistance range: id Output fall sl be stored in 4 is be	value. Program 1~1000mΩ. Pr ew rate. Progra memory cells. A 40 output current	ming via the co ogramming via mming range: Activation by co	ommunication p a the communic 0.0001~999.99' ommand via the	oorts or the froi ation ports or t V/mSec. or A/m e communicatio	the front panel. Sec. Programm on ports or by the	ning via the conne front panel.	600
5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional IEEE (*18) Interfaces) 1.Vout programming accuracy (*15) 2.lout programming accuracy (*14) 3.Vout programming resolution 4.lout programming resolution 5.Vout readback accuracy	V	Limits the out Emulates serie Programmabl ports or the fre Profiles of up 1 0.05% of rated 0.1% of actual 0.002% of rate 0.0025% of rate 0.005% of rate	put power to a les resistance. Re e Output rise aront panel. so 100 steps can 20 output voltage output current d output voltage ed output voltage d output volt	oroggrammed of sistance range: ad Output fall slow be stored in 4 and the stored in 4	value. Program 1~1000mΩ. Pr ew rate. Progra memory cells. A	ming via the co ogramming via mming range: Activation by co	ommunication parties the communic 0.0001~999.99 command via the	oorts or the from ation ports or the V/mSec. or A/m communication	the front panel. Sec. Programm on ports or by the	ning via the con the front panel.	

GENESYS™ GH1kW/1.5kW SERIES SPECIFICATIONS

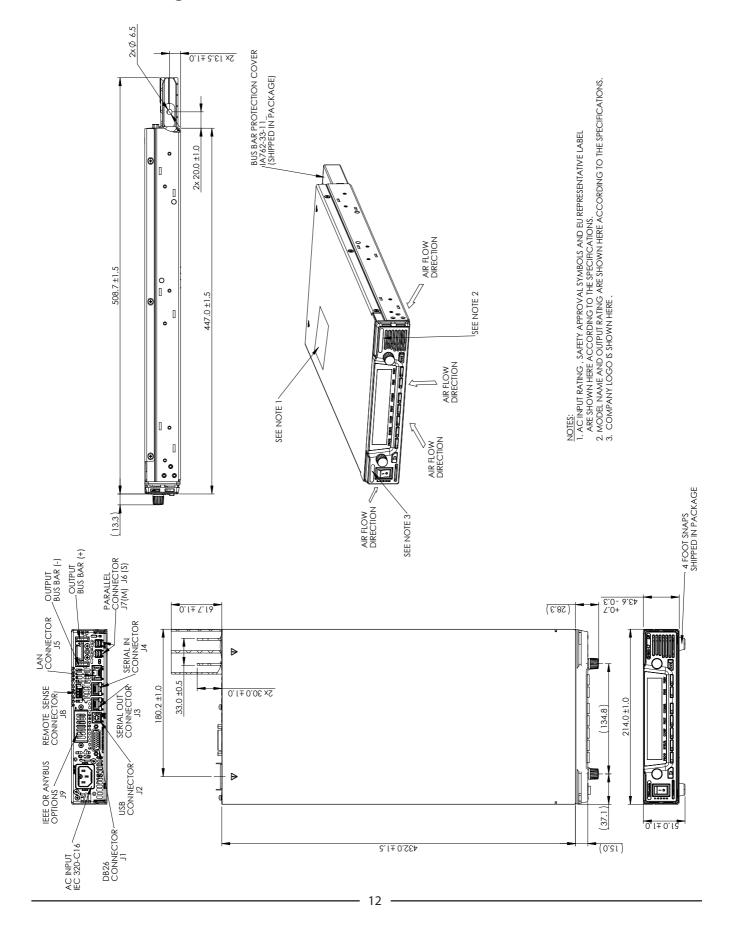
1.Foldback protection 2.Over-voltage protection (OVP) 3.Over-voltage programming range 4. Over-voltage programming accuracy 5.Output under voltage limit (UVL) 6.Over temperature protection 7. Output under voltage limit (UVL) 8. Output under voltage protection (UVP) FRONT PANEL 1.Control functions		User presetabl Output shut-d 0.5~12 +/-1% of rated Prevents from Shuts down th Prevents adjus Prevents adjus Power Switch,	e. Reset by AC own. Reset by 1~24 output voltage adjusting Vout e output. Auto thement of Vout	input recycle in AC input recycl 2~36 e t below limit. Do recovery by au below limit. P.S	n autostart mode. le in autostart n 2~44.1 oes not apply in utostart mode.	m CV or Power I de, by Power Sv node, by OUTP 5~66.15 n analog progra	vitch, by OUTPL UT button, by r 5~88.2	JT button, by re ear panel or by 5~110.25	communicatio	communication n. 5~330.75	5~661.5		
3.Over -voltage programming range 4. Over-voltage programming accuracy 5.Output under voltage limit (UVL) 6.Over temperature protection 7. Output under voltage limit (UVL) 8. Output under voltage protection (UVP) FRONT PANEL		0.5~12 +/-1% of rated Prevents from Shuts down th Prevents adjus Prevents adjus Power Switch,	1~24 output voltage adjusting Vout e output. Auto tment of Vout	2~36 e t below limit. D precovery by au below limit. below limit. P.S	2~44.1 oes not apply in utostart mode.	5~66.15	5~88.2	5~110.25	5~165.37	5~330.75	5~661.5		
4. Over-voltage programming accuracy 5. Output under voltage limit (UVL) 6. Over temperature protection 7. Output under voltage limit (UVL) 8. Output under voltage protection (UVP) FRONT PANEL		+/-1% of rated Prevents from Shuts down th Prevents adjus Prevents adjus Power Switch,	output voltage adjusting Vout e output. Auto tment of Vout	t below limit. Do recovery by au below limit. below limit. P.S	oes not apply in utostart mode.						5~661.5		
5.Output under voltage limit (UVL) 6.Over temperature protection 7. Output under voltage limit (UVL) 8. Output under voltage protection (UVP) FRONT PANEL		Prevents from Shuts down th Prevents adjus Prevents adjus Power Switch,	adjusting Vou e output. Auto tment of Vout	t below limit. Do recovery by au below limit. below limit. P.S	utostart mode.	n analog progra	amming. Prese	by front pane	or communica	tion port.			
6.Over temperature protection 7. Output under voltage limit (UVL) 8. Output under voltage protection (UVP) FRONT PANEL		Shuts down the Prevents adjust Prevents adjust Power Switch,	e output. Auto	recovery by au below limit. below limit. P.S	utostart mode.	n analog progra	amming. Prese	by front pane	or communica	tion port.			
Output under voltage limit (UVL) Output under voltage protection (UVP) FRONT PANEL		Prevents adjus Prevents adjus Power Switch,	tment of Vout	below limit. below limit. P.S									
8. Output under voltage protection (UVP) FRONT PANEL		Prevents adjus Power Switch,	tment of Vout	below limit. P.S	Coutput turns (
FRONT PANEL		Power Switch,	tment of Vout by OUTPUT bu	below limit. P.S	output turns (
				ictori, by rear po	anel or by comr	Off during unde munication.	r voltage cond	ition. Reset by	AC input recycl	e in autostart m	ode, by		
1.Control functions		T											
		Multiple optio	ns with 2 Enco	ders									
	- 1	Vout/Iout/Pow	Vout/lout/Power Limit manual adjust										
		OVP/UVL/UVP	manual adjust										
			Protection Functions - OVP, UVL, UVP, Foldback, OCL, ENA, ILC										
			Communication Functions - Selection of LAN, IEEE, RS232, RS485, USB or Optional communication interface.										
			Output ON/OFF. Front Panel Lock.										
						ss, IP and comm							
						gramming, 5V/		gramming					
						Nonitoring 5V/1	OV.						
2.Display					ut voltage +/-1								
25 (0. 10. 1. 1. 1. 1.					t current +/-1 co		IEIGUD ATION	CVCTEM CEOU	-NCED				
3.Front Panel Buttons Indications			OUTPUT ON, ALARM, PREVIEW, FINE, COMMUNICATION, PROTECTION, CONFIGURATION, SYSTEM, SEQUENCER. Voltage, Current, Power, CV, CC, CP, External Voltage, External Current, Address, LFP, Autostart, Safetstart, Foldback V/I, Remote (commu RS/USB/LAN/IEEE communication, Trigger, Load/Store Cell.										
4. Front Panel Display Indications		Voltage, Curre RS/USB/LAN/II	nt, Power, CV, G EEE communic	CC, CP, External ation, Trigger, L	Voltage, Exteri .oad/Store Cell.	nal Current, Ad	dress, LFP, Auto	start, Safetstar	t, Foldback V/I,	Remote (comm	unication),		
ENVIRONMENTAL CONDITIONS													
1.Operating temperature		0~50°C, 100%	load.										
2.Storage temperature		-30~85°C			-								
3.Operating humidity	%	20~90% RH (n	o condensatio	n).									
4.Storage humidity	%	10~95% RH (no		·									
5.Altitude				-	derating 2%/10	00m or Ta derati	ng 1°C/100m a	bove 2000m. N	on operating: 4	0000ft (12000m	i).		
		111111111111	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								,		
MECHANICAL		le 1 : 1	P. 1. 1. 4	1.C A: C		F							
1.Cooling				i tans. Air flow o	direction: from	Front panel to	power supply r	ear					
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, 11m	Sec. Unit is unp	acked.								
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	Oout ≤40V Models: Output, J1, J2, J3, J4, J5, J6, J7, J8 (sense) and , J9 (communication options) are SELV. 60≤ Vout≤ 600V Models: Output, J8 (sense) are hazardous, J1, J2, J3, J4, J5, J6, J7 and J9 (communication options) are SELV										
						put - Ground: 2							
		1				put - SELV: 4242		nut - SELV- 950	/DC 1min				
1.2 Withstand voltage GH1kW/1.5kW					ound: 2835VDC		voc IIIIII, Out	put - JLLV. 030	VUC IIIIII,				
1.2 The stand voltage							VDC 1min Out	nut CEIV: 127	VDC 1min				
		Output - Grou	nd: 2500VDC 1	min, Input - Gro	ound: 2835VDC	put - SELV: 4242 1 1min.	יטכ ווחוה, Out	ραι - 3ELV: 12/:	VUC IININ,				
1.3 Insulation resistance		100Mohm at 2	5°C, 70%RH. O	utput to Groun	id 500VDC								
2.Conducted emmision		IEC/EN61204-3	Industrial env	ironment, Ann	ex H table H.1 ,	FCC Part 15-A,	VCCI-A.						
3. Radiated emission		IEC/EN61204-3	Industrial env	ironment, Ann	ex H table H.3	and H4, FCC Pa	rt 15-A, VCCI-A						
4. EMC compliance EMC (*4)		IEC/EN61204-3	Industrial env	rironment									

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

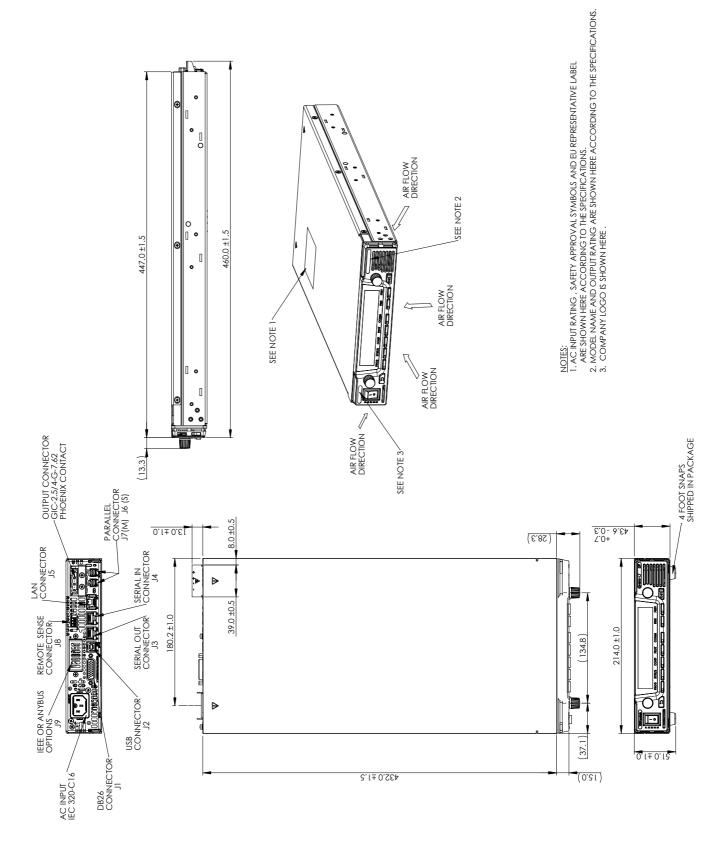
Unless otherwise noted, specifications are warranted over the ambient temperature range of 0° to 50°C NOTES:

*1: Minimum voltage 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: 85-7132Vac 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 rating, constant input voltage.
*10: The maximum voltage on the power supply terminals must not exceed the rated voltage.
*11: From 10% to 90% 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 20~100% 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 programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift.
*15: Measured at the sensing point.
*16 Max. ambient temperature for using IEEE is 40°C.
*17: Ta=25°C, rated output power.

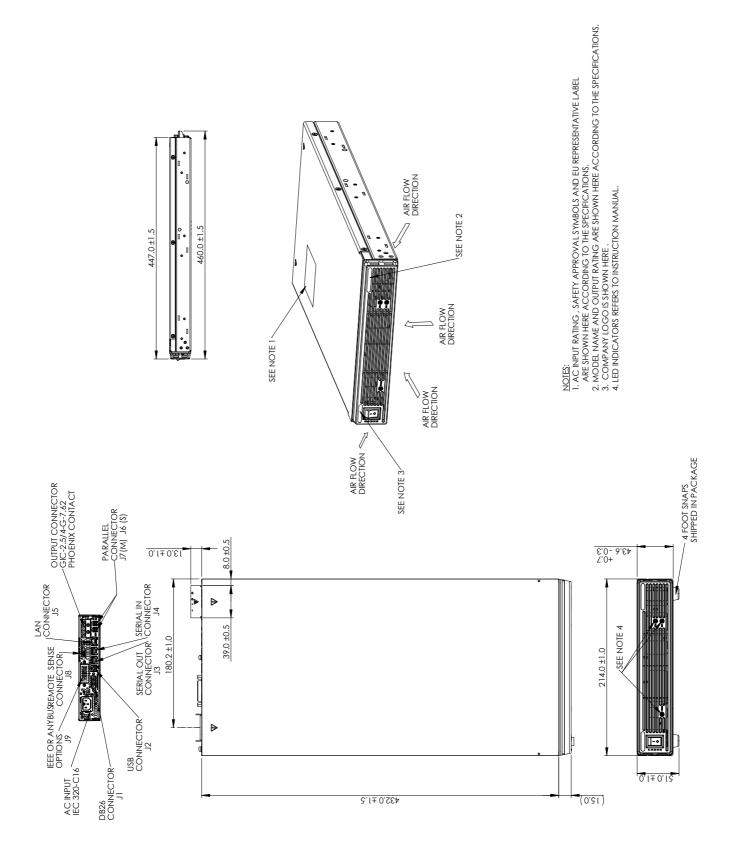
Outline Drawing **GENESYS™** GH1kW (10V-100V)



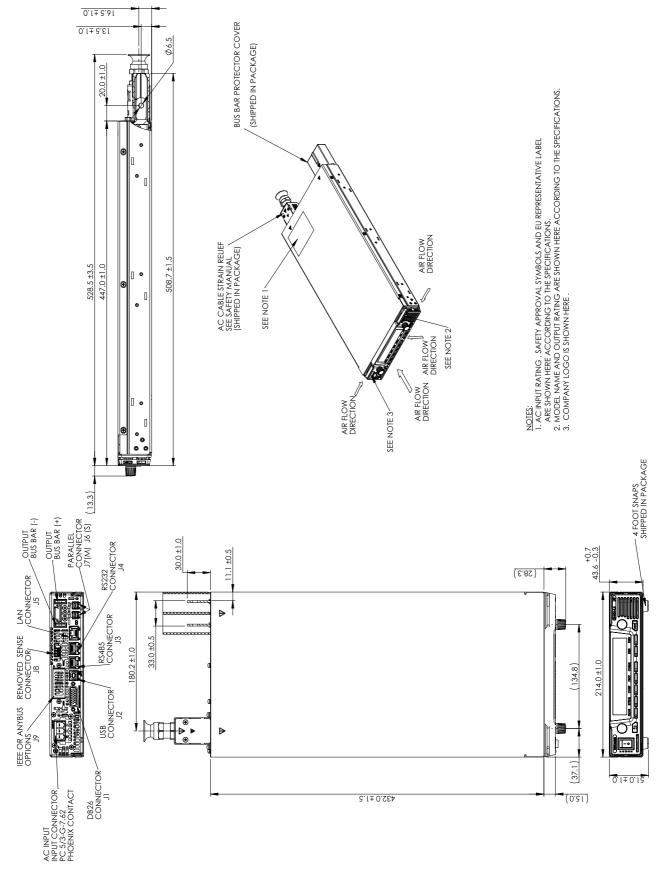
Outline Drawing GENESYS™ GH1kW (150V-600V)



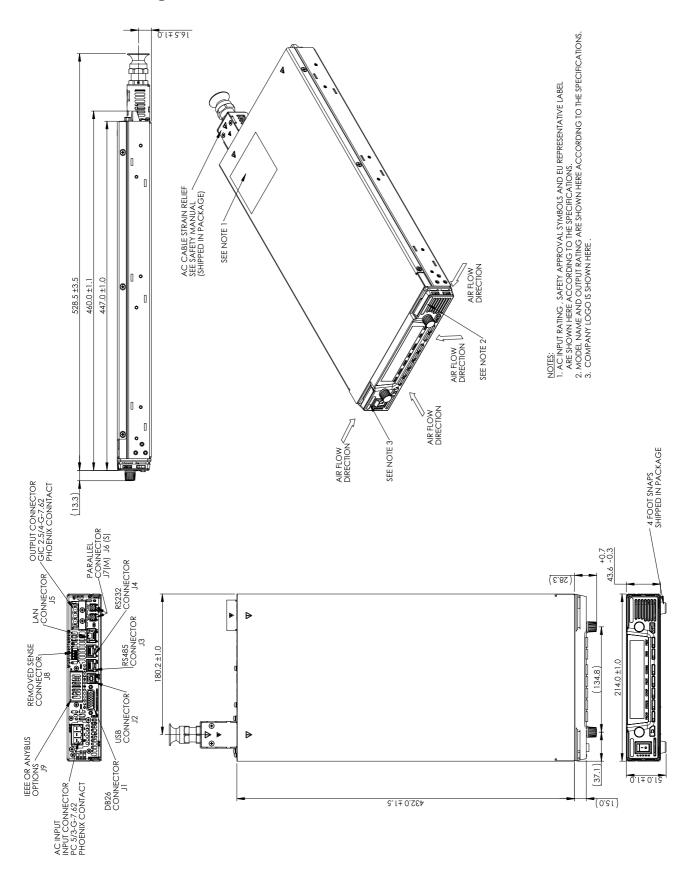
Outline Drawing GENESYS™ GHB1kW



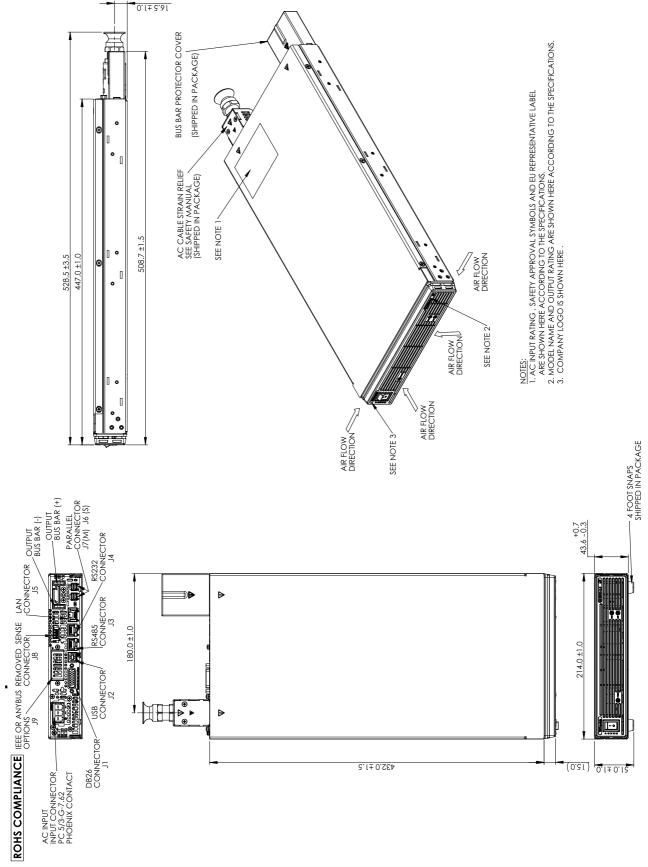
Outline Drawing GENESYS™ GH1.5kW (10V-100V)



Outline Drawing GENESYS™ GH1.5kW (150V-600V)



Outline Drawing GENESYS™ GHB1.5kW







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Half Series Rev. B





GLOBAL NETWORK