



# **GENESYS**<sup>™</sup>

Programmable DC Power Supplies Configurable High Power System GSPS 30kW/45kW/60kW - 19" Rack in 20U

## ! 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





Trusted • Innovative • Reliable

The GENESYS<sup>™</sup> Scalable Power System with GSP15kW SERIES assembly are compact, efficient and flexible DC power supplies.

#### Features include:

- Wide Range of popular worldwide AC inputs: 3ø 208VAC (170VAC ~ 265VAC), Wide-range 3ø 480VAC (342VAC ~ 528VAC)
- Active PFC (0.94 typical)
- Output Voltage up to 600V, Current up to 4500A
- 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 controlled by ambient temperature and load
- Certified LabWindows<sup>™</sup>/CVI, LabVIEW<sup>™</sup>, and IVI Drivers
- Optional EtherCAT, Modbus-TCP, IEEE (488.2) Interfaces
- 19" Rack Mount capability for ATE and OEM application
- Scalable Power Systems of 15kW
- Parallel Systems (up to 120kW) with Auto-Configure
- Worldwide Safety Agency approvals
- CE Mark for Low Voltage, EMC and RoHS3 Directives
- Five year warranty for the Power Supply

#### **Applications**

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

- Test & Measurement systems
- Component Device Testing
- Industrial Automation and process control
- Semiconductor Processing & Burn-In
- Aerospace & Satellite Testing
- Automotive Component & HIL Testing
- Medical Imaging
- Magnets, RF Magnifiers and Beam Steering
- Green Technology
- Higher power systems can be configured with up to twelve (12) 7.5kW 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.







#### Front Panel Display MENU/CONTROL buttons:



#### **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 COMMnication)
- 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 GSPS Series - Configurable High Power System

0~300

0~204

0~150

0~102

0~78

0~60

0~51

0~450

0~306

0~225

0~153

0~117

0~90

0~76.5

0~100V

0~150V 0~200V

0~300V

0~400V

0~500V

0~600V

G S	SPS 10	4500 -			
Series Name	Output	Output	Interface Options	AC Input Options	<b>Accessories Options</b>
Front Panel Type	Voltage	Current		3P208 (Three Phase 170~265VAC)	M - Printed *User Manual
Empty: standard	(0~10V)	(0~1500A)		3P480 (Three Phase 342~528VAC)	* User Manual & GUI are
B: Blank Front Panel	(ATE version)				available on the website
Interface Optio	ns (Factory inst	alled)	P/N		
LAN (LXI 1.5 complian	nt with Multi-Drop cap	ability)- built-in	-		
USB 2.0 compliant w	vith Multi-Drop capab	ility - built-in	-		
RS-232/RS-485 - bi	uilt-in		-		
	gram/Monitor Interfac		-		
	ith 600V isolation) - b		IEEE		
	npliant with Multi-Drop ca	apability installed)			
Modbus-TCP			MDBS		
EtherCAT			ECAT		
Power (kW)	30kW	45kW	60kW		
Voltage (VDC)		Current (A)			
0~10V	0~3000	-	0~4500		
0~20V	0~1500	0~2250	0~3000		
0~30V	0~1020	0~1530	0~2040		
0~40V	0~750	0~1125	0~1500		
0~50V	0~600	0~900	0~1200		
0~60V	0~510	0~765	0~1020		
0~80V	0~390	0~585	0~780		
0 10011		0 1 7 0	0 100		

0~600

0~408

0~300

0~204

0~156

0~120

0~102

#### 60kW High Power System Series Specifications

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

OUTPUT RATING		10-4500	20-3000	30-2040	40-1500	50-1200	60-1020	80-780	100-600	150-408	200-300	300-204	400-156	500-120	600-102
1.Rated output voltage (*1)	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
2.Rated output current (*2)	Α	4500 (*3)	3000	2040	1500	1200	1020	780	600	408	300	204	156	120	102
3.Rated output power	KW	45.0	60.0	61.2	60.0	60.0	61.2	62.4	60.0	61.2	60.0	61.2	62.4	60.0	61.2
INPUT CHARACTERISTICS	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
1.Input voltage/freq. 3 phase, 3 wire+ground (*4)							ers 200/23								
				els: 342~52	28Vac, 47~	-63Hz (Co\	ers 380/40	0/415/440	460/480Va	ac).					
2.Maximum Input 3-Phase, 200V models:		212A @ 2													
current at 100% load 3-Phase, 480V models: 3.Power Factor (Typ.)		110.4A @		, rated outp											
4.Efficiency (minimum) (*5)	%		J0/380 vac 17			19					90				
	% V	10	20	88 30	40	9 50	60	80	400	150	90 200	200	400	500	600
CONSTANT VOLTAGE MODE	v	10	20	30	40	50	60	80	100	150	200	300	400	500	600
1.Max. Line regulation (*6)		0.01% of	rated output	ut voltage.											
2.Max. Load regulation (*7)		0.01% of	rated outpi	ut voltage +	-5mV.										
<ol> <li>Temperature coefficient</li> </ol>		50PPM/ <sup>0</sup>	C from rate	ed output vo	oltage, follo	owing 30 m	inutes warr	m-up.							
4.Temperature stability		0.01% of	rated Vout	over 8hrs i	interval foll	owing 30 n	ninutes war	m-up. Con	stant line,	load & tem	perature.				
5.Warm-up drift		Less than	0.05% of	rated outpu	it voltage +	-2mV over	30 minutes	following	power on.						
<ol> <li>Remote sense compensation/wire (*8)</li> </ol>	V	2	2	5	5	5	5	5	5	5	5	5	5	5	5
7.Up-prog. response time (*9)	mS	30	30	30	30	50	50	50	50	50	50	50	100	100	100
8.Down-prog. Full load (*9)	mS	50	50	80	80	80	80	100	100	100	100	100	150	200	200
response time: No load (*10)	nio	300	600	800	900	950	1000	1200	1900	2000	2500	3000	4000	4000	3000
9.Transient response time		Output se	t point: 10	~100%, Lo	cal sense.		rated outpu 2mS for m			0~90% of r	ated outpu	t current.			
CONSTANT CURRENT MODE	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
1.Max. Line regulation (*6)		0.05% of	rated output	ut current.											
2.Max. Load regulation (*11)		0.08% of													
3.Temperature coefficient		10V~100\	/ models:	100PPM/ <sup>0</sup> 0	C from rate	d output cu	irrent, follo	wing 30 mi	nutes warn	n-up.					
		150V~600	V models:	: 70PPM/ <sup>0</sup> 0	C from rate	d output cu	irrent, follo	wina 30 mi	nutes warn	n-up.					
4.Temperature stability							ninutes war				perature.				
5.Warm-up drift ANALOG PROGRAMMING AND MONITORI		150V ~ 60	00V model	s: Less tha			out current utput curre								
1.Vout voltage programming							and lineari								
2.lout voltage programming (*12)							and lineari								
3.Vout resistor programming		0~100%,	0~ <mark>5/10</mark> KΩ	full scale, i	user select	able. Accu	racy and lir	nearity: +/-0	).5% of rate	ed Vout.					
4.lout resistor programming (*12)			ν~100%, 0~5/10KΩ full scale, user selectable. Accuracy and linearity: +/-0.5% of rated lout.												
5.Output voltage monitor (*19)		0~5V or 0													

6. Output vorage monitor (12) (19) ---- U-5V or U-10V, user selectable. Accuracy: +/-0.5% of rated Vout 6. Output current monitor (12) (19) ---- D-5V or 0-10V, user selectable. Accuracy: +/-0.5% of rated lout. SIGNALS AND CONTROLS (ISOLATED FROM THE OUTPUT)

1.Power supply OK #1 signal	 Power supply output monitor. Open collector. Output On: On. Output Off. Off. Maximum Voltage: 30V. Maximum Sink Current: 10mA.
2.CV/CC signal	 CV/CC Monitor. Open collector. CC mode: On. CV mode: Off. Maximum Voltage: 30V. Maximum Sink Current: 10mA.
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/Disable PS output by electrical signal or dry contact. Output ON: 0~0.6V or short. Output OFF: 2~30V or open.
7.Programmed signals	 Two open drain programmable signals. Maximum voltage 25V. Maximum sink current 100mA (shunted by 27V zener).
8.TRIGGER IN / TRIGGER OUT signals	 Maximum low level input voltage = 0.8V. Minimum high level input voltage = 2.5V. Maximum high level input = 5V positive edge trigger: tw = 10us minimum. Tr,Tf = 1us maximum. Min delay between 2 pulses 1ms.
9.DAISY_IN/SO control signal	 By electrical Voltage: 0~0.6V/2~30V or dry contact.
10.DAISY_OUT/PS_OK #2 signal	 4~5V = OK, 0V (500Ω impedance) = Fail.

FUNCTIONS AND FEATURES

1.Parallel operation	 Consult with manufacturer.
2.Constant power control	 Limits the output power to a programmed value. Programming via the communication ports or the front panel.
3.Output resistance control	 Emulates series resistance. Resistance range: 1~1000mΩ. Programming via the communication ports or the front panel.
4.Slew rate control	 Programmable Output rise and Output fail slew rate. Programming range: 0.0001-999.99 V/mS. or A/mS. Programming via communication ports or front panel.
5.Arbitrary waveforms	Profiles of up to 100 steps can be stored in 4 memory cells. Activation by command via communication ports or front panel.

#### PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional (\*16) (\*17) Interfaces)

PROGRAMMING AND READBACK (USB,	LAN, RS232/4	485, Option	al (*16) (*1	7) Interfa	ces)											
	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600	
1.Vout programming accuracy (*13)		0.05% of ra														
2.lout programming accuracy (*12)		0.3% of rat	ed output o	current.												
3.Vout programming resolution		0.002% of	rated outpu	it voltage.												
4.lout programming resolution		0.002% of	rated outpu	it current.												
5.Vout readback accuracy		0.05% of ra	ated output	voltage.												
6.lout readback accuracy (*12)		0.2% of rat														
7.Vout readback resolution	% of rated													l –		
	output voltage	0.011%	0.006%	0.004%	0.003%	0.003%	0.002%	0.002%	0.011%	0.007%	0.005%	0.004%	0.003%	0.003%	0.002%	
8. lout readback resolution	% of rated															
	output current	0.003%	0.004%	0.005%	0.007%	0.01%	0.01%	0.0013%		0.003%	0.004%		0.007%	0.009%	0.01%	
PROTECTIVE FUNCTIONS	V	10         20         30         40         50         60         80         100         150         200         300         400         500         600           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. User presetable.         So         600														
1.Foldback protection		Output shu Reset by A												le. User pre	esetable.	
2.Over-voltage protection (OVP)				•								rear panel				
3.Over -voltage programming range	V	0.5~12	1~24	2~36	2~44.1	5~55.125	5~66.15	5~88.2	5~110.25	5~165.37	5~220.5	5~330.75	5~441	5~551.25	5~661.5	
4.Over-voltage programming accuracy		+/-1% of ra	ted output	voltage												
5.Output under voltage limit (UVL)		Prevents fr	om adjustir	ng Vout be	low limit. D	oes not ap	ply in anal	og prograi	nming. Pre	set by fror	t panel or	communica	ition port.			
6.Over temperature protection		Shuts down		•						•						
7.Output under voltage protection (UVP)	+	Prevents a						ring under	voltare co	ndition						
. Output under voltage protection (UVP)											el or by co	mmunicatio	n.			
FRONT DANIEL		NO3CE Dy A		yoic in aut	ostart mou	c, by i owc	a Ownen, i	y 0011 0	i button, s	y icai pan		minumcatio	41.			
FRONT PANEL	-	h a 112 - 2														
1.Control functions		Multiple op														
		Vout/lout/F			djust.											
		ovp/uvl/														
		Protection	Functions -	- OVP, UV	L, UVP, Fo	ldback, OC	CL, ENA, IL	.C.								
					ection of LA	N, RS232	RS485, U	ISB or Opt	ional comr	nunication	interface.					
		Output ON	/OFF, Fron	it Panel Lo	ck.											
		Communic	ation Func	tions - Sele	ection of Ba	ud Rate, A	ddress, IP	and com	munication	language.						
					ction Volta						mming.					
		Analog Mo								1 0	Ū					
2.Display		Vout: 4 dig														
E.B.opiay		lout: 4 digi														
3.Front Panel Buttons Indications								ROTECTI	ON CONE	IGURATIO	N SYSTEM	M, SEQUEN	ICER			
4.Front Panel Display Indications		Voltage, C (communic									art, Safetst	art, Foldba	ck V/I, Ren	note		
5.Circuit breaker		The AC su	only for the	Power Sv	stem unit i		by 804 ci	rcuit break	ors Those	CB's are	accassible	on the from	t nanel of th	he cohinet		
ENVIRONMENTAL CONDITIONS		110710-04	ppij toi uie		otorn unit i	protocio				0000			t panor or a			
1.Operating temperature (*3)		0~50 <sup>0</sup> C, 10	0% load													
2.Storage temperature		-25~65°C.	o io iouu.													
			1 (													
3.Operating humidity		20~90% R	1													
4.Storage humidity		10~95% R				1	0/1405	<b>-</b> · · ·	10-01-	<b>^</b>						
5.Altitude (*14)		Operating: Non-opera				derating 2	:‰/100m o	r i a derat	ng 1°C/10	um above	∠UUUM.					
MECHANICAL																
1.Cooling		Forced air	coolina bv	power sun	ply internal	fans. Airfl	ow directio	n: From ca	abinet front	panel to r	ear.					
2.Weight	Kq	Less than 2	<i>v</i> /		. ,											
3.Dimensions (WxHxD)	mm	W: 553, H:		Castore	Without co	stors cabin	et hight is	947) D∙o	02							
4. Vibration (Package transportation)				LAOTA	D4728 Rar	1 11		j, D. J								
5.Shock & Drop (Package transportation)		ISTA 1H: 2						n edao d	on toot. NO	STM D617	Rotation	al drop				
SAFETY/EMC		101A III. 2	υτο <u>μ</u>			02101166	ian, i tuidili	on ouge u	op iooi. Ad		o notatiolla	a urop.				
1 Safaty atandarda	1	IEC 64040	1.2040	C 61040 4	0010/484	1.2046										
1.Safety standards					2 12 14		10 (00000)	Q 10 / a a	municati	ontices) -	re Non Ha	Tordovia				
1.1.Interface classification							· · · /			. /			we Mer L'			
1.2.Withstand voltage	1		Models: In	put – Outp	ut & J8 (se							n options) a 242VDC 1n		zaruous.		
		60V≤Vout≤ Output & J	100V Mod 8 (sense) -	els: Input - J1, J2, J3	- Output & , J4, J5, J6	J8 (sense) , J7 & J9 (	, J1, J2, J3 communica	3, J4, J5, J ation optio	6, J7 & J9 ns): 850VE	(communi C 1min, C	cation optic output & J8	ons): 4242V (sense) - G	/DC 1min, Ground: 150	00VDC 1mi	n,	
		Output & J	t≤600V Mo 8 (sense) -	dels: Input J1, J2, J3	: – Output & , J4, J5, J6							options): 42 8 (sense) -			nin.	
			und: 2835													
2.EMC standards (*15) (*18)			204-3 Indus													
2.1.Conducted emission (*18)					onment, An											
2.2.Radiated emission (*18)		IEC/EN612	204-3 Indus	strial enviro	onment, An	nex H tabl	e H.3 and	H.4, FCC	Part 15-A,	VCCI-A.						

#### 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 onage. \*3: Monte 10V Max. ambient temperature is 40°C.
- \*4: For cases where conformance to various safety standards (IEC, etc...) is required, to be described as 190-240Vac (50/60Hz) for 3-Phase 200V models and 380~480Vac (50/60Hz) for 3-Phase 480V models.
   \*5: 3-Phase 200V models: At 200Vac input voltage, 3-Phase 480V: At 380Vac input voltage. With rated output power.
- \*6: 3-Phase 200V models: 170~265Vac, 3-Phase 480V models: 342~528Vac. Constant load.
- \*7: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.
- \*8: The maximum voltage on the power supply terminals must not exceed the rated voltage. \*9: From 10% to 90% of Rated Output Voltage at rated resistive load.
- \*10: From 90% to 10% of Rated Output Voltage.
- \*11: For load voltage change, equal to the unit voltage rating, constant input voltage.
- \*12: The Constant Current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift.
- \*13: Measured at the sensing point.
- \*14: For 10V model, Ta derating 2°C/100m.
- \*15: Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m.
- \*16: Max. ambient temperature for IEEE is 40C.
- \*17: For 10V model only: Max. output current for IEEE is 4500A up to 40C
- \*18: EMC specs based on GSP15kW series.
- \*19: For steady state only.

### 45kW High Power System Series Specifications

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

OUTPUT RATING				20-2250	30-1530	40-1125	50-900	60-765	80-585	100-450	150-306	200-225	300-153	400-117	500-90	600-76.5
1.Rated output voltage	e (*1)	V		20	30	40	50	60	80	100	150	200	300	400	500	600
2.Rated output curren		Å		2250	1530	1125	900	765	585	450	306	225	153	117	90	76.5
3.Rated output current 3.Rated output power	(2)	KW		45.0	45.9	45.0	45.0	45.9	46.8	45.0	45.9	45.0	45.9	46.8	45.0	45.9
	PISTICS	V		40.0 20	30	40			80	100	150	200	300	400	500	600
				-												
1.Input voltage/freq. 3	phase, 3 wire+ground (*3)					65Vac, 47~ 28Vac, 47~				460/480Va	ic).					
2.Maximum Input	3-Phase, 200V models:		160A @ 2	200Vac.							<i>.</i>					
	3-Phase, 480V models:		84.3A @													
B.Power Factor (Typ.)					, rated out	put power.										
4.Efficiency (minimum	) (*4)	%		37	88	-	9					90				
CONSTANT VOLT		V		20	30	40	50	60	80	100	150	200	300	400	500	600
1.Max. Line regulation	(*5)		0.01% of	rated outp	ut voltage.											
2.Max. Load regulation	n (*6)		0.01% of	rated outp	ut voltage ·	+5mV.										
3.Temperature coeffic	ient		50PPM/0	C from rate	ed output v	oltage, follo	owing 30 m	inutes war	m-up.							
4.Temperature stabilit						interval foll				stant line. I	oad & tem	perature.				
5.Warm-up drift	, 					ut voltage +										
6.Remote sense comp	ensation/wire (*7)	V	1	2	5	5	5	5	5	5	5	5	5	5	5	5
7.Up-prog. response t		mS	1	30	30	30	50	50	50	50	50	50	50	100	100	100
	Full load (*8)		1	50	80	80	80	80	100	100	100	100	100	150	200	200
	Vo load (*9)	mS		600	800	900	950	1000	1200	1900	2000	2500	3000	4000	4000	3000
Transient response			Output se	output volta t point: 10	age to reco ~100%, Lo	ver within (	0.5% of its	rated outpu	it for a load	I change 10				1000	1000	
CONSTANT CURR	ENT MODE	V		20	30	40	50	60	80	100	150	200	300	400	500	600
.Max. Line regulation	(*5)		0.05% of	rated outp	ut current.											
2.Max. Load regulation				rated outp												
3.Temperature coeffic			20V~100	v models:	100PPM/ <sup>0</sup>	C from rate			ÿ							
						C from rate			•							
4.Temperature stabilit	у					interval foll	Ŭ									
5.Warm-up drift						+/-0.25% of										
	RAMMING AND MONITORI	NG (ISOLA	TED FROM	THE OUT	(PUT)	ın +/-0.15%										
1.Vout voltage program						selectable										
2.lout voltage program						selectable										
3.Vout resistor progra						user select										
4. lout resistor progran	nming (*11)					user select	able. Accu	racy and lir		).5% of rate	ed lout.					
5.Output voltage moni	tor (*16)		$0 \sim 5 \text{ // or } 0$	101/ 100												
Output automation .	tor (*11) (*16)						y: +/-0.5%									
<ol><li>Output current moni</li></ol>						e. Accurac e. Accurac										
	CONTROLS (ISOLATED FR		0~5V or 0													
SIGNALS AND O	•		0~5V or 0 I <b>TPUT)</b> Power su	P∼10V, use	r selectabl		y: +/-0.5%	of rated lou t On: On. 0	ıt.	Off.						
SIGNALS AND C	•	OM THE OL	0~5V or 0 <b>JTPUT)</b> Power su Maximum CV/CC M	pply output Voltage: 3	t monitor. (	e. Accurac Open collec num Sink C r. CC mode	y: +/-0.5%	of rated lou t On: On. C nA.	it. Dutput Off:		V.					
SIGNALS AND C Power supply OK #1 CV/CC signal	signal	OM THE OU	0~5V or 0 ITPUT) Power su Maximum CV/CC M Maximum Enable/D Remote:	Provide the second seco	t monitor. ( 30V. Maxin en collecto ent: 10mA log prograr short. Loca	e. Accurac Open collec num Sink C r. CC mode mming cont al: 2~30V o	tor. Outpu current: 10r or On. CV n rol by elect	of rated lou t On: On. C nA. node: Off. I trical signa	it. Dutput Off: Maximum \ I or dry con	/oltage: 30' tact.	V.					
SIGNALS AND C I.Power supply OK #1 2.CV/CC signal 3.LOCAL/REMOTE A	nalog control	 	0~5V or 0 ITPUT) Power su Maximum CV/CC M Maximum Enable/D Remote: Analog pi Maximum	pply outpu Voltage: 3 onitor. Op Sink Curr isable ana 0~0.6V or rogrammin v Voltage: 3	t monitor. ( 30V. Maxin en collecto ent: 10mA log prograr short. Loca g control m 30V. Maxin	e. Accurac Dpen collec num Sink C r. CC mode nming cont al: 2~30V o nonitor sign num Sink C	tor. Outpu current: 10r con. CV n rol by elect r open. al. Open co current: 10r	of rated lou t On: On. C nA. node: Off. I trical signa ollector. Re nA.	it. Dutput Off: Maximum \ I or dry con	/oltage: 30' tact.	V.					
SIGNALS AND ( 1.Power supply OK #1 2.CV/CC signal 3.LOCAL/REMOTE A 4.LOCAL/REMOTE A 5.ENABLE/DISABLE	alog control	DM THE OU  	0~5V or 0 ITPUT) Power su Maximum CV/CC M Maximum Enable/D Remote: Analog pu Maximum Enable/D 0~0.6V ol	pply outpu Voltage: 4 Sink Curr isable ana 0~0.6V or ogrammin Voltage: 5 isable PS of r short, 2~3	r selectabl t monitor. ( 30V. Maxin en collecto ent: 10mA log program short. Loca g control n 30V. Maxin output by e 30V or ope	e. Accurac Dpen collec num Sink C r. CC mode mming cont al: 2~30V o nonitor sign num Sink C electrical sig n. User sel	y: +/-0.5% / ctor. Outpu current: 10r y: On. CV n rol by elec: r open. al. Open cc current: 10r gnal or dry ectable log	of rated lou t On: On. C nA. node: Off. I trical signa bllector. Re nA. contact. ic.	it. Dutput Off: Maximum \ I or dry con	/oltage: 30' tact.	V.					
SIGNALS AND ( 1.Power supply OK #1 2.CV/CC signal 3.LOCAL/REMOTE A 4.LOCAL/REMOTE A 5.ENABLE/DISABLE	alog control		0~5V or C TTPUT) Power su Maximum CV/CC M Maximum Enable/D Maximum Enable/D 0~0.6V o C~0.6V o Enable/D Output O	pply outpu voltage: ; onitor. Op i Sink Curr isable ana 0~0.6V or rogrammin i Voltage: ; isable PS isable PS isable PS N: 0~0.6V	t monitor. ( 30V. Maxim en collecto ent: 10mA log prograr short. Loca g control m 30V. Maxim boutput by e 30V or ope output by e or short. O	e. Accurac Dpen collect num Sink C r. CC mode mming conta il: 2-30V o nonitor sign num Sink C lectrical sig n. User sel lectrical sig nut Sink C	tor. Output current: 10r crol by elect r open. al. Open ca current: 10r gnal or dry ectable log gnal or dry 2~30V or 0	of rated lou t On: On. On nA. node: Off. I trical signa billector. Re nA. contact. ic. contact. open.	it. Dutput Off: Maximum \ or dry con mote: On.	/oltage: 30' tact. Local: Off.						
SIGNALS AND ( 1.Power supply OK #1 2.CV/CC signal 3.LOCAL/REMOTE A 4.LOCAL/REMOTE A 5.ENABLE/DISABLE = 6.INTERLOCK (ILC) c 7.Programmed signals	nalog control nalog signal signal control	   	0~5V or C TTPUT) Power su Maximum CV/CC M Maximum Enable/D Analog pi Maximum Enable/D 0~0.6V oi Enable/D Output O Two oper (shunted	Providence of the second secon	t monitor. 0 30V. Maxim en collecto ent: 10mA log prograr short. Loca g control m 30V or ope output by e or short. O grammable ner).	e. Accurac Dpen collec num Sink C r. CC mode mming cont al: 2-30V o nonitor sign num Sink C lectrical sig n. User sel lectrical sig utput OFF: a signals. M	tor. Output burrent: 10r crol by elect r open. al. Open cro burrent: 10r mal or dry ectable log mal or dry 2~30V or laximum vo	of rated lou t On: On. On. On nA. node: Off. I trical signa contact. ic. contact. contact. open. JItage 25V.	it. Dutput Off: Maximum V or dry con mote: On. Maximum	foltage: 30 tact. Local: Off. sink currer						
SIGNALS AND ( 1.Power supply OK #1 2.CV/CC signal 3.LOCAL/REMOTE A 4.LOCAL/REMOTE A 5.ENABLE/DISABLE = 5.INTERLOCK (ILC) c 7.Programmed signals 3.TRIGGER IN / TRIG	al signal nalog control nalog signal signal control s GGER OUT signals	    	0~5V or C TTPUT) Power su Maximum Crable/D Remote: Analog pi Maximum Enable/D 0~0.6V oi Enable/D 0~0.6V oi Enable/D Output O Two oper (shunted Maximum Maximum Maximum Maximum	Ply output voltage: : onitor. Op sink Curr isable ana 0-0.6V or ogrammin voltage: : isable PS r short, 2 isable PS N: 0-0.6V N: 0-0.6V by 27V zei low level high level between between	r selectabl t monitor. i 30V. Maxin an collecto ent: 10mA log program short. Loca g control m 30V. Maxin butput by e 30V or ope 30V or ope soutput by e or short. O grammable nep). input volta; input solta 2 pulses f1	e. Accurac Dpen collect num Sink C r. CC mode mming cont il: 2~30V o nonitor sign lectrical sig- utput OFF: signals. M ge = 0.8V. I positive en s.	tor. Outpu current: 10r current: 10r con. CV n rol by elect ropen. al. Open co uurrent: 10r gnal or dry ectable log gnal or dry 2~30V or aximum vc Minimum h dge trigger	of rated lou t On: On. C mA. node: Off. I trical signa billector. Re mA. contact. ic. contact. open. jiltage 25V. igh level in	it. Dutput Off: Maximum V or dry con mote: On. Maximum put voltage	/oltage: 30' tact. Local: Off. sink curren = = 2.5V.	it 100mA					
SIGNALS AND ( 1. Power supply OK #1 2. CV/CC signal 3. LOCAL/REMOTE A 4. LOCAL/REMOTE A 5. ENABLE/DISABLE ( 5. ENABLE/DISABLE ( 5. INTERLOCK (ILC) ( 7. Programmed signal)	signal nalog control nalog signal signal control s GER OUT signals ol signal	OM THE OU    	0~5V or C TPUT) Power su Maximum CV/CC M Maximum Enable/D Maximum Enable/D Output O Two oper (shunted Maximum Maximum Maximum Maximum Maximum	→10V, use pply output voltage: : onitor. Op sink Curr isable anal 0-0.6V or orgammin voltage: : isable PS or short, 2	r selectabl t monitor. 6 30V. Maxim en collecto ent: 10mA log progra short. Loca g control m 30V. Maxim battor by e 30V or ope- boutput by e or short. O grammable ner). input volta; input volta; input volta; 2 pulses 11 2 pulses 21 2 pulses 20	e. Accurac Dpen collec num Sink C r. CC mode mming cont il: 2~30V o ponitor sign num Sink C lectrical sign utput OFF: a signals. M ge = 0.8V. I positive e	tor. Outpu current: 10r current: 10r con. CV n rol by elect ropen. al. Open co uurrent: 10r gnal or dry ectable log gnal or dry 2~30V or aximum vc Minimum h dge trigger	of rated lou t On: On. C mA. node: Off. I trical signa billector. Re mA. contact. ic. contact. open. jiltage 25V. igh level in	it. Dutput Off: Maximum V or dry con mote: On. Maximum put voltage	/oltage: 30' tact. Local: Off. sink curren = = 2.5V.	it 100mA					

1.Parallel operation	 Consult with manufacturer.
2.Constant power control	 Limits the output power to a programmed value. Programming via the communication ports or the front panel.
3.Output resistance control	 Emulates series resistance. Resistance range: 1~1000mΩ. Programming via the communication ports or the front panel.
4.Slew rate control	 Programmable Output rise and Output fall slew rate. Programming range: 0.0001~999.99 V/mS. or A/mS. Programming via communication ports or front panel.
5.Arbitrary waveforms	Profiles of up to 100 steps can be stored in 4 memory cells. Activation by command via communication ports or front panel.

#### PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional (\*14) Interfaces)

PROGRAMMING AND READBACK (USB,	LAN, R5232/4	185, Optior	nai (*14) in	terraces)											
	V		20	30	40	50	60	80	100	150	200	300	400	500	600
1.Vout programming accuracy (*12)		0.05% of ra	ated outpu	t voltage.											
2.lout programming accuracy (*11)		0.3% of rat	ted output	current.											
3.Vout programming resolution		0.002% of	rated outp	ut voltage.											
4. lout programming resolution		0.002% of	rated outp	ut current.											
5.Vout readback accuracy		0.05% of ra	ated outpu	t voltage.											
6.lout readback accuracy (*11)		0.2% of rat	ted output	current.											
7.Vout readback resolution	% of rated output voltage		0.006%	0.004%	0.003%	0.003%	0.002%	0.002%	0.011%	0.007%	0.005%	0.004%	0.003%	0.003%	0.002%
8.lout readback resolution	% of rated output current		0.005%	0.007%	0.009%	0.0012%	0.002%	0.002%	0.003%	0.004%	0.005%	0.007%	0.009%	0.0012%	0.0014%
PROTECTIVE FUNCTIONS	V		20	30	40	50	60	80	100	150	200	300	400	500	600
1.Foldback protection		Output shu Reset by A											to CV mod	le. User pre	esetable.
2.Over-voltage protection (OVP)		Output shu	it-down. Re	eset by AC								•	or by comr		
3.Over -voltage programming range	V		1~24	2~36	2~44.1	5~55.125	5~66.15	5~88.2	5~110.25	5~165.37	5~220.5	5~330.75	5~441	5~551.25	5~661.5
4.Over-voltage programming accuracy		+/-1% of ra	ated output	voltage											
5.Output under voltage limit (UVL)		Prevents fr	om adjusti	ng Vout be	low limit. [	Does not ap	oply in anal	og prograr	nming. Pre	set by fron	t panel or	communica	ation port.		
6.Over temperature protection		Shuts dow	n the outpu	ut. Auto rec	overy by a	utostart mo	ode.								
7.Output under voltage protection (UVP)		Prevents a Reset by A		of Vout bel cycle in aut							el or by co	mmunicatio	on.		
FRONT PANEL															
1.Control functions		Multiple op	tions with	2 Encoders	S.										
		Vout/lout/F	Power Limi	t manual ad	djust.										
		OVP/UVL/	UVP manu	ial adjust.											
		Protection			L, UVP, Fo	oldback, O	CL, ENA, II	LC.							
		Communic	ation Fund	tions - Sele	ection of L	AN, RS232	, RS485, U	JSB or Opt	ional comr	nunication	interface.				
		Output ON	/OFF, Froi	nt Panel Lo	ock.										
		Communic	ation Fund	tions - Sele	ection of B	aud Rate, J	Address, IF	and comr	nunication	language.					
		Analog Co	ntrol Funct	tions - Sele	ction Volta	ige/resistiv	e programi	ming 5V/10	V, 5KΩ/10	KΩ progra	mming.				
		Analog Mo	nitor Func	tions - Sele	ection of Vo	oltage/Curr	ent Monito	ring 5V/10	V.		¥				
2.Display		Vout: 4 dig	its, accura	cy: 0.05%	of rated ou	tput voltag	e +/-1 cour	nt.							
		lout: 4 digi	ts, accurac	cy: 0.2% of	rated outp	ut current ·	+/-1 count.								
3. Front Panel Buttons Indications		OUTPUT	on, Alari	M, PREVIE	W, FINE, (	COMMUNI	CATION, F	ROTECTI	ON CONF	IGURATIO	N SYSTEM	/I, SEQUEI	NCER.		
4.Front Panel Display Indications		Voltage, C (communic									art, Safetst	art, Foldba	ick V/I, Rer	note	
5.Circuit breaker				e Power Sy ssible on th				circuit bre	akers for 2	00Vac Inp	ut & 1x40A	+1x80A cir	rcuit breake	ers for 380\	/ac Input.

#### ENVIRONMENTAL CONDITIONS

1.Operating temperature	 0~50 <sup>0</sup> C, 100% load.
2.Storage temperature	 -25~65°C.
3.Operating humidity	 20~90% RH (no condensation).
4.Storage humidity	 10~95% RH (no condensation).
5.Altitude	Operating: 10000ft (3000m), output current derating 2%/100m or Ta derating 1 <sup>0</sup> C/100m above 2000m. Non-operating: 40000ft (12000m).

#### MECHANICAL

1.Cooling		Forced air cooling by power supply internal fans. Airflow direction: From cabinet front panel to rear.
2.Weight	Kg	Less than 177Kg.
3.Dimensions (WxHxD)	mm	W: 553, H: 1028 (With Castors; Without casrors cabinet hight is 947), D: 902.
4. Vibration (Package transportation)		ISTA 1H: 2014, Method: ASTM D4728 Random vibration test.
5.Shock & Drop (Package transportation)		ISTA 1H: 2014, Drop test Method: ASTM D5276 free fall; Rotation edge drop test: ASTM D6179 Rotational drop.

#### SAFETY/EMC

1.Safety standards	 IEC 61010-1:2010, IEC 61010-1:2010/AMD1:2016
.1.Interface classification	Vout≤50V Models: Output, J1, J2, J3, J4, J5, J6, J7, J8 (sense) & J9 (communication options) are Non Hazardous.
	 60≤Vout≤600V Models: Output & J8 (sense) are hazardous, J1, J2, J3, J4, J5, J6, J7 & J9 (communication options) are Non Hazardous.
.2.Withstand voltage	Vout≤50V Models: Input – Output & J8 (sense), J1, J2, J3, J4, J5, J6, J7 & J9 (communication options): 4242VDC 1min, Input - Ground: 2835VDC 1min.
	 60Vs2Vouts100V Models: Input – Output & J8 (sense), J1, J2, J3, J4, J5, J6, J7 & J9 (communication options): 4242VDC 1min, Output & J8 (sense) - J1, J2, J3, J4, J5, J6, J7 & J9 (communication options): 850VDC 1min, Output & J8 (sense) - Ground: 1500VDC 1min, Input - Ground: 2835VDC 1min.
	100V <vout≤600v &="" (communication="" (sense),="" 1min,<br="" 4242vdc="" and="" input="" j1,="" j2,="" j3,="" j4,="" j5,="" j6,="" j7="" j8="" j9="" models:="" options):="" output="" –="">Output &amp; J8 (sense) - J1, J2, J3, J4, J5, J6, J7 &amp; J9 (communication options): 1275VDC 1min, Output &amp; J8 (sense) - Ground: 2500VDC 1min. Input - Ground: 2835VDC 1min.</vout≤600v>
2.EMC standards (*13) (*15)	 IEC/EN61204-3 Industrial environment
.1.Conducted emission (*15)	 IEC/EN61204-3 Industrial environment, Annex H table H.1, FCC Part 15-A, VCCI-A.
2.2.Radiated emission (*15)	 IEC/EN61204-3 Industrial environment, Annex H table H.3 and H.4, FCC Part 15-A, VCCI-A.

#### NOTES:

- 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 (IEC, etc...) is required, to be described as 190-240Vac (50/60Hz) for 3-Phase 200V models and 380-480Vac (50/60Hz) for 3-Phase 480V models. \*4: 3-Phase 200V models: At 200Vac input voltage, 3-Phase 480V: At 380Vac input voltage. With rated output power. \*5: 3-Phase 200V models: 170-265Vac, 3-Phase 480V models: 342-528Vac. Constant load. \*6: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense. \*7: The maximum voltage on the power supply terminals must not exceed the rated voltage. \*8: From 10% to 90% of Rated Output Voltage at rated resistive load. \*9: From 90% to 10% of Rated Output Voltage. \*10: For load voltage change, equal to the unit voltage rating, constant input voltage. \*11: The Constant Current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift. \*12: Measured at the sensing point.

- \*12: Measured at the sensing point.
- \*13: Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m.
- \*14: Max. ambient temperature for IEEE is 40C. \*15: EMC specs based on GSP15kW series.
- \*16: For steady state only.

### 30kW High Power System Series Specifications

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

OUTPUT RATING		10-3000	20-1500	30-1020	40-750	50-600	60-510	80-390	100-300	150-204	200-150	300-102	400-78	500-60	600-57
I.Rated output voltage (*1)	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
Rated output current (*2)	А	3000(*3)	1500	1020	750	600	510	390	300	204	150	102	78	60	51
B.Rated output power	KW	30.0	30.0	30.6	30.0	30.0	30.6	31.2	30.0	30.6	30.0	30.6	31.2	30.0	30.6
INPUT CHARACTERISTICS	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
1.Input voltage/freq. 3 phase, 3 wire+ground (*4)						-63Hz (Cov			460/480Va	ac)			•		
2.Maximum Input 3-Phase, 200V models:			200Vac.	010.012 0	20100, 11	00112 (001			100/10010						
current at 100% load 3-Phase, 480V models:		56.2A @	<i>.</i>												
B.Power Factor (Typ.)				, rated out	put power.										
4.Efficiency (minimum) (*5)	%		37	88		39	1				90				
CONSTANT VOLTAGE MODE	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
.Max. Line regulation (*6)			rated outp									1			4
Max. Load regulation (*7)				ut voltage ·											
3.Temperature coefficient		50PPM/ <sup>0</sup>	C from rate	ed output v	oltage, folle	owing 30 m	inutes war	m-up.							
Temperature stability		0.01% of	rated Vout	over 8hrs	interval fol	owing 30 n	ninutes wa	rm-up. Cor	nstant line, l	oad & tem	perature.				
5.Warm-up drift						+2mV over									
<ol> <li>Remote sense compensation/wire (*8)</li> </ol>	V	2	2	5	5	5	5	5	5	5	5	5	5	5	5
7.Up-prog. response time (*9)	mS	30	30	30	30	50	50	50	50	50	50	50	100	100	100
B.Down-prog. Full load (*9)	mS	50	50	80	80	80	80	100	100	100	100	100	150	200	200
esponse time: No load (*10)	liio	300	600	800	900	950	1000	1200	1900	2000	2500	3000	4000	4000	3000
I.Transient response time		Output se	et point: 10	~100%, Lo	cal sense.	0.5% of its i iding 100V.			d change 10 ve 100V.	0~90% of r	ated outpu	it current.			
CONSTANT CURRENT MODE	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
I.Max. Line regulation (*6)		0.05% of	rated outp	ut current.											
Max. Load regulation (*11)		0.08% of	rated outp	ut current.											
.Temperature coefficient		10V~100	V models:	100PPM/ <sup>0</sup>	C from rate	d output cu	urrent, follo	wing 30 m	inutes warn	n-up.					
		150V~60	0V models	: 70PPM/ <sup>0</sup>	C from rate	d output cu	urrent, follo	wing 30 m	inutes warn	n-up.					
.Temperature stability		0.01% of	rated lout	over 8hrs.	interval foll	owina 30 m	ninutes wa	rm-up. Cor	istant line, l	oad & tem	perature.				
5.Warm-up drift									nutes follow						
		150V~6	00V model	s: Less tha	an +/-0.15%	of rated o	utput curre	nt over 30	minutes fol	lowing pov	ver on.				
ANALOG PROGRAMMING AND MONITORI	NG (ISOLA	TED FROM	I THE OU	TPUT)											
.Vout voltage programming		0~100%	0~5V or 0	~10V user	selectable	Accuracy	and linear	ity: +/-0 15	% of rated \	/out					
2.lout voltage programming (*12)									of rated lo						
B.Vout resistor programming									0.5% of rate						
Lout resistor programming (*12)									0.5% of rate						
5. Output voltage monitor (*19)						y: +/-0.5%			0.070 01 140	Ju Iout.					
6.Output votage monitor (*13)						y: +/-0.5%									
SIGNALS AND CONTROLS (ISOLATED FR	OM THE OL		7 100, 030	i Scicotabi	C. Accurac	y. 17-0.076	of fated lot	at.							
I.Power supply OK #1 signal						ctor. Outpu Current: 10r		Dutput Off:	Off.						
2.CV/CC signal		CV/CC N	lonitor. Op		r. CC mode			Maximum	Voltage: 30	V.					
3.LOCAL/REMOTE Analog control		Enable/D	isable ana	log program		trol by elec r open.	trical signa	l or dry cor	ntact.						
LOCAL/REMOTE Analog signal						al. Open co Current: 10r		emote: On.	Local: Off.						
5.ENABLE/DISABLE signal		0~0.6V o	r short, 2~3	30V or ope	n. User se	gnal or dry ectable log	ic.								
6.INTERLOCK (ILC) control		Output O	N: 0~0.6V	or short. C	utput OFF	gnal or dry 2~30V or	open.								
7.Programmed signals		(shunted	by 27V ze	ner).	0		0		sink currer	nt 100mA					
3.TRIGGER IN / TRIGGER OUT signals		Maximum	n high level		/ positive e	Minimum h dge trigger			e = 2.5V. Tr,Tf = 1us	s maximum	1.				
DAISY IN/SO control signal		By electri	cal Voltage	e: 0~0.6V/2	~30V or d	v contact									

10.DAISY\_OUT/PS\_OK #2 signal FUNCTIONS AND FEATURES

9.DAISY\_IN/SO control signal

1.Parallel operation	 Consult with manufacturer.
2.Constant power control	 Limits the output power to a programmed value. Programming via the communication ports or the front panel.
3.Output resistance control	 Emulates series resistance. Resistance range: 1~1000mΩ. Programming via the communication ports or the front panel.
4.Slew rate control	 Programmable Output rise and Output fall slew rate. Programming range: 0.0001~999.99 V/mS. or A/mS. Programming via communication ports or front panel.
5.Arbitrary waveforms	 Profiles of up to 100 steps can be stored in 4 memory cells. Activation by command via communication ports or front panel.

By electrical Voltage: 0~0.6V/2~30V or dry contact.

4~5V = OK, 0V (500Ω impedance) = Fail.

#### PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional (\*16) (\*17) Interfaces)

						50			400	450	000	000	100	500	000
	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
1.Vout programming accuracy (*13)		0.05% of rated output voltage.													
2.lout programming accuracy (*12)		0.3% of rated output current.													
3.Vout programming resolution		0.002% of rated output voltage.													
4.lout programming resolution		0.002% of rated output current.													
5.Vout readback accuracy		0.05% of rated output voltage.													
6.lout readback accuracy (*12)		0.2% of rated output current.													
7.Vout readback resolution	% of rated output voltage	0.011%	0.006%	0.004%	0.003%	0.003%	0.002%	0.002%	0.011%	0.007%	0.005%	0.004%	0.003%	0.003%	0.002%
8.lout readback resolution	% of rated output current	0.004%	0.008%	0.01%	0.0014%	0.002%	0.002%	0.003%	0.005%	0.005%	0.001%	0.001%	0.0014%	0.002%	0.002%
PROTECTIVE FUNCTIONS	V	10	20	30	40	50	60	80	100	150	200	300	400	500	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. User presetable. Reset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by communication.													
2.Over-voltage protection (OVP)		Output shut-down. Reset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by communication.													
3.Over -voltage programming range	V	0.5~12	1~24	2~36	2~44.1	5~55.125	5~66.15	5~88.2	5~110.25	5~165.37	5~220.5	5~330.75	5~441	5~551.25	5~661.5
4.Over-voltage programming accuracy		+/-1% of rated output voltage													
5.Output under voltage limit (UVL)		Prevents from adjusting Vout below limit. Does not apply in analog programming. Preset by front panel or communication port.													
6.Over temperature protection		Shuts down the output. Auto recovery by autostart mode.													
7.Output under voltage protection (UVP)		Prevents adjustment of Vout below limit. P.S output turns Off during under voltage condition. Reset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by communication.													
FRONT PANEL															

1. Control functions		Multiple options with 2 Encoders.					
		/out/Iout/Power Limit manual adjust.					
		OVP/UVL/UVP manual adjust.					
		Protection Functions - OVP, UVL, UVP, Foldback, OCL, ENA, ILC.					
		ommunication Functions - Selection of LAN, 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 Control Functions - Selection Voltage/resistive programming 5V/10V, 5KΩ/10KΩ programming.					
		Analog Monitor Functions - Selection of Voltage/Current Monitoring 5V/10V.					
2.Display		Vout: 4 digits, accuracy: 0.05% of rated output voltage +/-1 count.					
		lout: 4 digits, accuracy: 0.2% of rated output current +/-1 count.					
3.Front Panel Buttons Indications		OUTPUT ON, ALARM, PREVIEW, FINE, COMMUNICATION, PROTECTION CONFIGURATION SYSTEM, SEQUENCER.					
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/Optional communication interface, Trigger, Load/Store Cell.					
5.Circuit breaker		The AC supply for the Power System unit is protected by 2x80A circuit breakers for 200Vac & 2x40A circuit breakers for 380Vac. These CB's are accessible on the front panel of the cabinet.					

#### ENVIRONMENTAL CONDITIONS

1.Operating temperature (*3)	 0~50 <sup>0</sup> C, 100% load.
2.Storage temperature	 -25~65°C.
3.Operating humidity	 20~90% RH (no condensation).
4.Storage humidity	 10~95% RH (no condensation).
5.Altitude (*14)	Operating: 10000ft (3000m), output current derating 2%/100m or Ta derating 1 <sup>0</sup> C/100m above 2000m. Non-operating: 40000ft (12000m).

#### MECHANICAL

1.Cooling		Forced air cooling by power supply internal fans. Airflow direction: From cabinet front panel to rear.
2.Weight	Kg	Less than 153Kg.
3.Dimensions (WxHxD)	mm	W: 553, H: 1028 (With Castors; Without casrors cabinet hight is 947), D: 902.
4.Vibration (Package transportation)		ISTA 1H: 2014, Method: ASTM D4728 Random vibration test.
5.Shock & Drop (Package transportation)		ISTA 1H: 2014, Drop test Method: ASTM D5276 free fall; Rotation edge drop test: ASTM D6179 Rotational drop.

SAFETY/EMC

1.Safety standards		IEC 61010-1:2010, IEC 61010-1:2010/AMD1:2016				
1.1.Interface classification		out≲50V Models: Output, J1, J2, J3, J4, J5, J6, J7, J8 (sense) & J9 (communication options) are Non Hazardous.				
		60≤Vout≤600V Models: Output & J8 (sense) are hazardous, J1, J2, J3, J4, J5, J6, J7 & J9 (communication options) are Non Hazardous.				
1.2.Withstand voltage		Vout≤50V Models: Input – Output & J8 (sense), J1, J2, J3, J4, J5, J6, J7 & J9 (communication options): 4242VDC 1min, Input - Ground: 2835VDC 1min.				
		60V≤Vout≤100V Models: Input – Output & J8 (sense), J1, J2, J3, J4, J5, J6, J7 & J9 (communication options): 4242VDC 1min, Output & J8 (sense) - J1, J2, J3, J4, J5, J6, J7 & J9 (communication options): 850VDC 1min, Output & J8 (sense) - Ground: 1500VDC 1min, Input - Ground: 2835VDC 1min.				
		100V≺Vout≤600V Models: Input – Output & J8 (sense), J1, J2, J3, J4, J5, J6, J7 and J9 (communication options): 4242VDC 1min, Output & J8 (sense) - J1, J2, J3, J4, J5, J6, J7 & J9 (communication options): 1275VDC 1min, Output & J8 (sense) - Ground: 2500VDC 1min. Input - Ground: 2835VDC 1min.				
2.EMC standards (*15) (*18)		EC/EN61204-3 Industrial environment				
2.1.Conducted emission (*18)		EC/EN61204-3 Industrial environment, Annex H table H.1, FCC Part 15-A, VCCI-A.				
2.2.Radiated emission (*18)		EC/EN61204-3 Industrial environment, Annex H table H.3 and H.4, FCC Part 15-A, VCCI-A.				

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#### 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: Model: 10V Max. ambient temperature is 30°C. Output current derate 30A / 1°C
- \*4: For cases where conformance to various safety standards (IEC, etc...) is required, to be described as 190-240Vac (50/60Hz) for 3-Phase 200V models \*4: For cases where conformance to various safety standards (IEC, etc...) is required, to be described as 190-240Vac and 380~480Vac (50/60Hz) for 3-Phase 480V models.
  \*5: 3-Phase 200V models: At 200Vac input voltage, 3-Phase 480V: At 380Vac input voltage. With rated output power.
  \*6: 3-Phase 200V models: 170~265Vac, 3-Phase 480V models: 342~528Vac. Constant load.
  \*7: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.

- \*8: The maximum voltage on the power supply terminals must not exceed the rated voltage. \*9: From 10% to 90% of Rated Output Voltage at rated resistive load. \*10: From 90% to 10% of Rated Output Voltage.

- \*11: For load voltage change, equal to the unit voltage rating, constant input voltage.
- \*12: The Constant Current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift.
- \*13: Measured at the sensing point.
- \*14: For 10V model, Ta derating 2°C/100m.
- \*15: Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m.
- \*16: Max. ambient temperature for IEEE is 40C.
- \*17: For 10V model only: Max. output current for IEEE is 2700A up to 40C \*18: EMC specs based on GSP15kW series.
- \*19: For steady state only.

### Outline Drawing GENESYS<sup>™</sup> GSPS Series





### Outline Drawing GENESYS<sup>™</sup> GSPS Series



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