

GENESYS[™] Programmable Power Supplies



TDK·Lambda

EMEA - Edition 2



The next generation has arrived. And it's small and mighty.

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

+High functionality

+Versatile communication protocols

+Smallest and lightest product on the market

+Simplifies control

+Speeds up test times

+Highest power density on the market





Features

General

- 1U benchtop and 19 Inch standard rack package
- Constant voltage/constant current operation modes/constant power (CP) Limit
- Internal Resistance Simulation

Control interfaces

- High resolution 16 bit ADCs & DACs
- RS-232/RS-485, USB, LAN (LX 1.5) built-in as standard
- Isolated Analogue interface built-in as standard
- Integrated Anybus CompactCom interface platform
- Communications compatible with Z+ and Genesys[™]

Programming

- Arbitrary Waveform Generator with Auto-Triggering (store up to 100 steps into four internal memory cells)
- Slew-Rate Control (V/I)
- Two user programmable output control pins (open drain) to activate external devices
- Easy auto-configuration for parallel systems up to 20kW
- · Safe or Auto re-start and last settings memory

Environmental

- Fan speed profile controlled by ambient temperature and load
- Efficiency up to 92%

Mechanical

- High contrast, wide viewing angle LCD display with brightness and dimming control
- Blank front panel option
- Front Panel dust filter option

Specifications

- 1.7-5kW in 1U
- 10kW in 2U / 15kW in 3U
- Wide Range of popular worldwide AC inputs: G5kW - G15kW: 3Ø (208, 400 & 480Vac), Wide range 3Ø 480Vac (342~528Vac) G1.7kW: 1Ø (85~265Vac)
- Output Voltage up to 600V, Current up to 1500A
- 5 year warranty

Applications

- Test & Measurement systems, Component Device Testing, Manufacturing and process control
- Semiconductor Processing & Burn-In, Aerospace & Satellite Testing, Medical Imaging, Green Technology
- ATE, Automotive, Automation, Laser diodes, Battery simulation
- Higher power systems can be configured with up to four 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

Find out more at: emea.tdk-lambda.com/genesysplus



G *E***NESYS**[™] Panel Description

Front Panel GENESYS+™ G (1.7-5kW) NEW



- 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

Rear Panel GENESYS+™ G (1.7-5kW) NEW



- 1. Isolated Analogue 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 unti-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; Plug connector: PHOENIX CONTACT IPC 5/4-STF-7.62 for models with Outputs >100V
- G5kW Input: 208, 400 & 480Vac Three Phase, 50/60Hz (Model shown) AC Input Plug Connector: PHOENIX CONTACT Power Combicon PC 5/4-STCL1-7.62 Series with strain relief G1.7kW Input: 85~265Vac, Single Phase, 50/60Hz AC Input Plug Connector: PHOENIX CONTACT Power Combicon PC 5/3-STCL1-7.62 Series with strain relief
- 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 (M4x8mm stud)

Front Panel GENESYS+™ GSP (10kW) NEW



- 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

Rear Panel GENESYS+™ GSP (10kW) NEW



- 1. Isolated Analogue 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; Plug connector: PHOENIX CONTACT DFK-IPC 16/4-STF-10.16 for models with Outputs >100V
- 8. Input: 208, 400 & 480Vac Three Phase, 50/60Hz AC Input Plug Connector: PHOENIX CONTACT DFK-IPC 16/4-STF-10.16 with strain relief
- 9. Optional Interface Position for IEEE 488.2 SCPI or Anybus Interface
- 10. Exhaust air assures reliable operation when zero stacked
- 11. Functional Ground connection (M4x8mm stud)

Front Panel GENESYS+[™] GSP (15kW) NEW

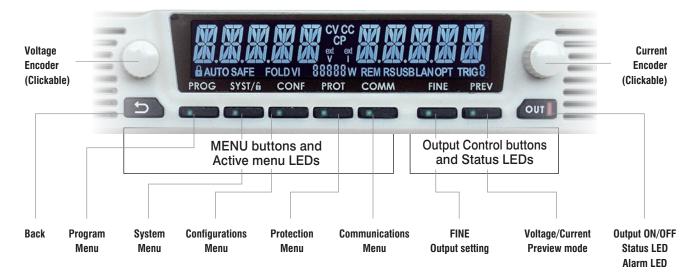
- 1. Input Power ON/OFF Switch
- 2. Air Intake allows zero stacking for maximum system flexibility and power density
- 3. Reliable Detent Encoders for settings and Menu navigation
- 4. High Contrast/Brightness display with wide viewing angle, 16 segment LCD
- 5. Function/Status LEDs: Active modes and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

Rear Panel GENESYS+™ GSP (15kW) NEW

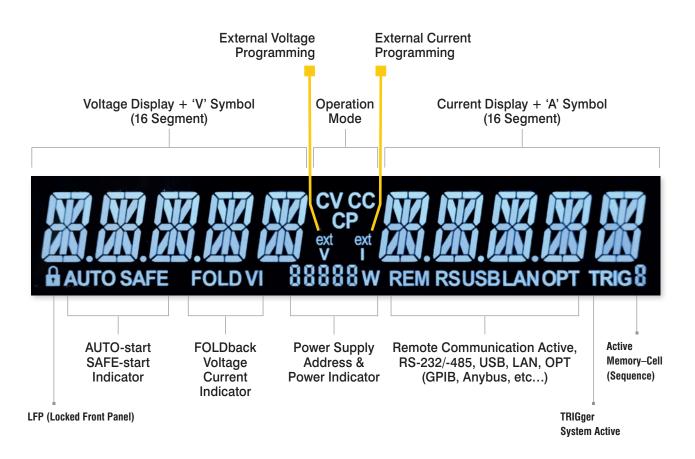


- 1. Isolated Analogue Programming, Monitoring and other control connector (DB26 Female)
- 2. USB Interface connector (Type B)
- 3. RS-232/RS-485 IN/OUT Remote Digital Interface (RJ-45 type) for Multi-Drop connection
- 4. LAN (LXI 1.5) Interface connector (RJ-45 type with LAN status indicators)
- 5. 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 for models up to and including 100V Output;
- Plug connector: PHOENIX CONTACT DFK-IPC 16/4-STF-10.16 for models with Outputs >100V (shown) 8. Input: 208, 400 & 480Vac Three Phase, 50/60 Hz
- AC Input Plug Connector: PHOENIX CONTACT DFK-PC 16/4-ST-10.16 with strain relief
- 9. Optional Interface Position for IEEE 488.2 SCPI or Anybus Interface
- 10. Exhaust air assures reliable operation when zero stacked
- 11. Functional Ground connection (M4x8mm stud)

Front Panel Display MENU/CONTROL buttons



Front Panel Display indicators



GENESYS+™ G&GSP Series Blank Front Panel

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



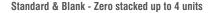
GENESYS+[™] Parallel and Series Configurations

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



Scalable Power Systems

Factory assembly and test available for two and three unit systems 10kW/15kW. Parallel kit available for four unit systems 20kW. Order P/N: G/P - 4U





GSP 10kW in 2U

GSP 15kW in 3U

Series operation

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

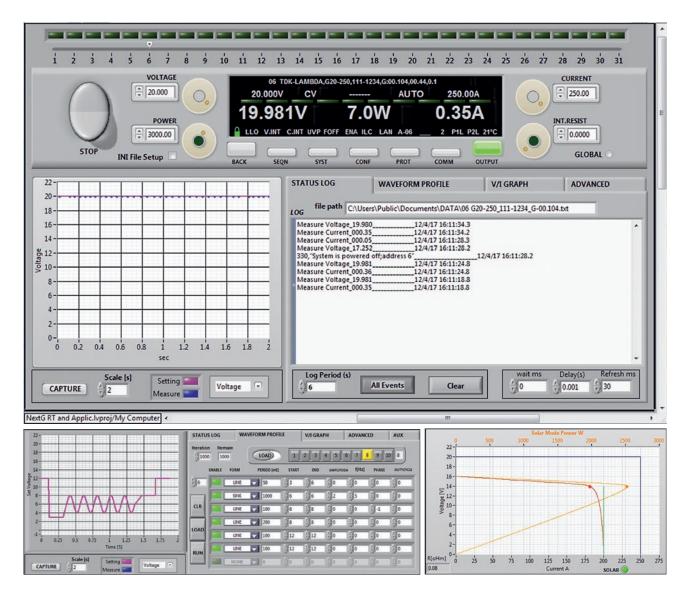
GENESYS[™] User Interface

Graphical User Interface

Advanced "Virtual Front Panel" allows programming and monitoring units with or without front panel display.

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

GUI Waveform Profile generator

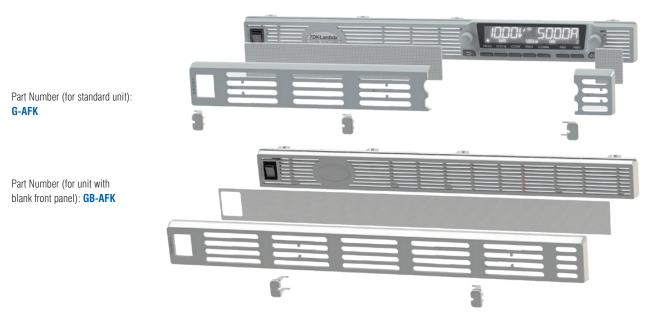


GENESYS"

GENESYS[™] Air Filter Kit

GENESYS+[™] Front Panel Air Filter Assembly

Front panel dust cover is available for dusty air environment applications. Dust cover is removable snap-in filter (for easy maintenance)



For GSP 10kW/15kW series order part number: GSP10kW-AFK / GSP15kW-AFK

Technical Specifications: Unit with Air Filter Assembly Installed

- Derating (enviromental)
- Operating Temperature
- For all models (except 10V): 0°C to +40°C For 10V model: 0°C to +30°C, derate 5A/°C for 30°C < TA < +40°C
- Altitude
- For all modells (except 10V): derate 2°C/100m or 2% of load/100m (above 2000m)
- For 10V model: derate 1°C/100m or 2% of load/100m (above 2000m)

Air Filter Assembly Components Standard Unit (P/N: G-AFK)

- Air Filter Cover (two pieces)
- Slide Button #1 (two locations: near AC ON/OFF switch and near left-hand side of front panel display)
- Slide Button #2 (one location: right-hand side of front panel display)
- Filter foam (two pieces)

Filter Foam Technical Specifications

- Material: reticulated polyurethane foam
- Thickness: 4.0mm
- Porosity: 30ppi
- Operating Temperature Range: 0°C to $+60^\circ\text{C}$
- Storage Temperature Range: -40°C to +85°C
- Humidity: 95% RH

Blank Front Panel Unit (P/N: GB-AFK)

- Air Filter Cover (one piece)
- Slide Button #1 (two locations)
- Filter foam (one piece)

G *ENESYS*[™] Product Summary

GENESYS+[™] Family Output Voltage and Current

Models Series	G (Std Front Panel	Display) / GB (Blank Front Panel Display)	GSP (Scalable Pov	wer)
Rated Power	1.7kW	5kW	10kW	15kW
Output Voltage [Vdc]	Output Current [A]			
0~10	0~170	0~500	0~1000	0~1500
0~20	0~85	0~250	0~500	0~750
0~30	0~56	0~170	0~340	0~510
0~40	0~42	0~125	0~250	0~375
0~60	0~28	0~85	0~170	0~255
0~80	0~21	0~65	0~130	0~195
0~100	0~17	0~50	0~100	0~150
0~150	0~11.2	0~34	0~68	0~102
0~300	0~5.6	0~17	0~34	0~51
0~600	0~2.8	0~8.5	0~17	0~25.5
Weight [kg/lb]	5/11	7.5/16.5	15.5/34.2	23.5/51.8

AC Input Range

Rated Power	1.7kW	5kW	10kW	15kW	
1Ø, 85-265Vac	*	N/A	N/A	N/A	
3P208	N/A	*	*	*	
3P400	N/A	*	*	*	
3P480	N/A	*	*	*	

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 untis use RS-485 daisy chain with linking cable.



Models GENESYS+ $^{\text{\tiny TM}}$ G (1.7kW) NEW

Model	Output Voltage [Vdc]	Output Current [A]	Output Power [W]	Model	Output Voltage [Vdc]	Output Current [A]	Output Power [W]
G10-170	0~10	0~170	1700	G80-21	0~80	0~21	1680
G20-85	0~20	0~85	1700	G100-17	0~100	0~17	1700
G30-56	0~30	0~56	1680	G150-11.2	0~150	0~11.2	1680
G40-42	0~40	0~42	1680	G300-5.6	0~300	0~5.6	1680
G60-28	0~60	0~28	1680	G600-2.8	0~600	0~2.8	1680

Product Code

G		- 10	- 170	-		-	
Series Name		Output Voltage (0~10V)	Output Current (0~170A)	Interface Options		Accessories Options	
Front Panel Type Standard	P/N:		ns (Factory installed) npliant with Multi-Drop c	apability)	P/N: -	AC Input (All Models) 1Ø, 85~265Vac	P/N:
Blank Front Panel	В	RS-232/RS-485 Isolated Analogu	nt with Multi-Drop capab e Program/Monitor Interf on with 600V isolation)	,	-	Accessories Options Printed User Manual (User Manual & GUI on CD as Standard) Bus Paralleling Cable	p/n: M
		Interface Option	,		P/N:		Г
		Multi-Drop capal Modbus-TCP co EtherCat coming	oming soon		IEEE MDBS ECAT		

Accessories

Accessories will be sent separatly from the Power Supply packing, according to order.

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

Mode	PC Connector	Power Supply Connector	Communication Cable	P/N
RS-232	DB-9F	RJ-45	Shielded L=2m	GEN/232-9
RS-485	DB-9F	RJ-45	Shielded L=2m	GEN/485-9

2. Serial Link cable (included with the power supply) Daisy-chain up to 31 GENESYS+™ power supplies.

Mode	Power Supply Connector	Communication Cable	P/N
RS-485	RJ-45	Shielded L=50cm	GEN/RJ45

3. Bus Paralleling cable		
Connectors	Cables	P/N
2013595-1 (TYCO)	Shielded L=11cm	G/P

4. User Manual

Printed User Manual
Printed User Manual

G/M

Models GENESYS+[™] G (5kW)

Model	Output Voltage [Vdc]	Output Current [A]	Output Power [W]	Mode
G10-500	0~10	0~500	5000	G80-6
G20-250	0~20	0~250	5000	G100-
G30-170	0~30	0~170	5100	G150-
G40-125	0~40	0~125	5000	G300-
G60-85	0~60	0~85	5100	G600-

Model	Output Voltage [Vdc]	Output Current [A]	Output Power [W]
G80-65	0~80	0~65	5200
G100-50	0~100	0~50	5000
G150-34	0~150	0~34	5100
G300-17	0~300	0~17	5100
G600-8.5	0~600	0~8.5	5100

Product Code

G		- 10 -	500	-			-	
Series Name	¥	Output Voltage (0~10V)	Output Current (0~500A)	Interface Options	•	AC Input Options	Accessories Options	
Front Panel Type Standard Blank Front Panel	P/N: B	Interface Options (F LAN (L) 1.5 complia USB 2.0 compliant wit RS-232/RS-485	nt with Multi-Drop ca	1 ,,	P/N: - -	AC Input Options Three Phase 170- Three Phase 342- Three Phase 342-	~265Vac ~460Vac	P/N: 3P208 3P400 3P480
		lsolated Analogue Pro (5V/10V Pgm/Mon wi	0	ace	-	Accessories Opt Printed User Manu		P/N: M
		Interface Options (O IEEE (488.2 & SCPI c	• •		P/N:	(User Manual & G Bus Paralleling Ca	UI on CD as Standard) Ible	Р
		Multi-Drop capability Modbus-TCP coming EtherCat coming soo	g soon		IEEE MDBS ECAT			

Accessories

Accessories will be sent separatly from the Power Supply packing, according to order.

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

Mode	PC Connector	Power Supply Connector	Communication Cable	P/N
RS-232	DB-9F	RJ-45	Shielded L=2m	GEN/232-9
RS-485	DB-9F	RJ-45	Shielded L=2m	GEN/485-9

2. Serial Link cable (included with the power supply) Daisy-chain up to 31 GENESYS+ $^{\rm TM}$ power supplies.

Mode	Power Supply Connector	Communication Cable	P/N
RS-485	RJ-45	Shielded L=50cm	GEN/RJ45

3. Bus Paralleling cable

Connectors	Cables	P/N
2013595-1 (TYCO)	Shielded L=11cm	G/P

4. User Manual

Printed User Mar

5. Parallel Kit: 20kW

BusBar Parallel Kit for 20 kW operation (5kW Models where Vout up to 100V)	G/P-4U
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G/M

Models GENESYS+ $^{\text{\tiny TM}}$ GSP (10kW) NEW

Model	Output Voltage [Vdc]	Output Current [A]	Output Power [kW]	Model	Output Voltage [Vdc]	Output Current [A]	Output Power [kW]
GSP10-1000	0~10	0~1000	10	GSP80-130	0~80	0~130	10.4
GSP20-500	0~20	0~500	10	GSP100-100	0~100	0~100	10
GSP30-340	0~30	0~340	10.2	GSP150-68	0~150	0~68	10.2
GSP40-250	0~40	0~250	10	GSP300-34	0~300	0~34	10.2
GSP60-170	0~60	0~170	10.2	GSP600-17	0~600	0~17	10.2

Models GENESYS+[™] GSP (15kW)

Model	Output Voltage [Vdc]	Output Current [A]	Output Power [kW]	Model	Output Volta [Vdc]
GSP10-1500	0~10	0~1500	15	GSP80-195	0~80
GSP20-750	0~20	0~750	15	GSP100-150	0~100
GSP30-510	0~30	0~510	15.3	GSP150-102	0~150
GSP40-375	0~40	0~375	15	GSP300-51	0~300
GSP60-255	0~60	0~255	15.3	GSP600-25.5	0~600

Model	Output Voltage [Vdc]	Output Current [A]	Output Power [kW]
GSP80-195	0~80	0~195	15.6
GSP100-150	0~100	0~150	15
GSP150-102	0~150	0~102	15.3
GSP300-51	0~300	0~51	15.3
GSP600-25.5	0~600	0~25.5	15.3

Product Code

G		SP	-	10	-	1500	-			-		-	
Series Na	ime			Output Voltage (0~10V)		Output Current (0~1500A)		Interface Options			AC Input Options	Accessories Options	
Front Pa Standard Blank From		P/N: - B			pliar	actory installed) nt with Multi-Drop c n Multi-Drop capab		oility)	P/N: - -		AC Input Options: Three Phase 170~ Three Phase 342~ Three Phase 342~	265Vac 460Vac	P/N: 3P208 3P400 3P480
				Isolated Analogue Program/Monitor Interface (5V/10V Pgm/Mon with 600V isolation) Interface Options (Optional)				- P/N:		Accessories Optic Printed User Manua (User Manual & GL	P/N: M		
				IEEE (488.2 & SCI Multi-Drop capabi Modbus-TCP cor EtherCat coming	PI co lity i <i>ming</i>	ompliant with installed) i soon			IEEE MDBS ECAT		Bus Paralleling Cat	,	Ρ

Accessories

Accessories will be sent separatly from the Power Supply packing, according to order.

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

Mode	PC Connector Pc 2 DB-9F BJ		Communication Cable	P/N		
RS-232	DB-9F	RJ-45	Shielded L=2m	GEN/232-9		
RS-485	DB-9F	RJ-45	Shielded L=2m	GEN/485-9		

3. Bus Paralleling cable (included with the power supply)

Connectors	Cables	P/N
2013595-1 (TYCO)	Shielded L=11cm	G/P

3.	User	Manual

Printed User Manual

GSP/M

G∉**NESYS**[™] Specifications

Specifications GENESYS+[™] G (1.7kW)

Output Rating	G	10-170	20-85	30-56	40-42	60-28	80-21	100-17	150-11.2	300-5.6	600-2.8
1. Rated output voltage(*1)	V	10	20	30	40	60	80	100	150	300	600
2. Rated output current (*2)	A	170	85	56	42	28	21	17	11.2	5.6	2.8
3. Rated output power	W	1700	1700	1680	1680	1680	1680	1700	1680	1680	1680
Input Characteristics	V	10	20	30	40	60	80	100	150	300	600
1. Input voltage/freq. (*3)		85~265Va	c, continuous	, 47~63Hz, S	Single Phase						
2. Maximum Input current at 100% load (100/200)	A	20/10									
3. Power Factor (Typ)		0.99 @ 100)Vac 0.98 (@ 200Vac, rat	ted output po	wer.					
4. Efficiency (at 100 Vac/200Vac, rated output)	%	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 50	DA								
Constant Voltage Mode	V	10	20	30	40	60	80	100	150	300	600
1. Max. Line regulation (*6)		0.01% of rat	ted output vol	tage							
2. Max. Load regulation (*7)		0.01% of rat	ted output vol	tage +2mV							
3. Ripple and noise (p-p, 20MHz) (*8)	mV	50	50	50	60	60	75	75	75	120	500
4. Ripple r.m.s. 5Hz~1MHz (*8)	mV	6	6	6	7	7	10	12	8	20	100
5. Temperature coefficient	PPM/°C	50PPM/°C f	rom rated out	tput voltage, fo	ollowing 30 r	ninutes warm-	·up.				
6. Temperature stability		0.01% of rat	ted Vout over	8hrs interval f	following 30	minutes warm	-up. Constan	t line, load & t	emp.		
7. Warm-up drift		Less than 0.	.01% of rated	output voltage	e+2mV over	30 minutes fo	llowing powe	er on.			
8. Remote sense compensation/wire (*10)	V	1	1	1.5	2	2	3	5	5	5	5
9. Up-prog. Response time (*11)	mS	20	20	20	20	20	20	25	50	100	100
10. Down-prog.response time: Full load (*12)	mS	30	30	60	60	60	60	60	120	220	200
No load (*12)	mS	450	700	1000	1200	1500	1700	2600	2900	4600	4600
11. Transient response time	mS								of rated output		1001/
10. Hold up time					ise. Less thar	n 1mS, for mo	dels up to an	a including 10	OV. 2mS, for m	lodels above	100V.
12. Hold-up time	mS		al, rated outpu	· · · · · · · · · · · · · · · · · · ·	40	60	00	100	450	000	600
Constant Current Mode	V	10	20	30	40	60	80	100	150	300	600
1. Max. Line regulation (*6)			ted output cur								
2. Max. Load regulation (*9)			ted output cur	1		50			10		-
3. Ripple r.m.s. @ 10% rated voltage (*13)	mA	400	160	100	60	50	30	30	10	8	5
4. Ripple r.m.s. @ rated voltage. B.W. 5Hz~1MHz.	mA	250	120	70	60	50	25	15	10	8	5
5. Temperature coefficient	PPM/°C	10V~100V 150V~600				nt, following 3 , following 30					
6. Temperature stability								t line, load & t	emperature.		
7. Warm-up drift								es following po	· ·		
		150V~600	V: Less than -	+/-0.15% of r	rated output o	urrent over 30) minutes foll	owing power o	n.		
Analogue Programming and Monitoring (Isolate	ed from th	e Output)									
1. Vout voltage programming		0~100%, 0	~5V or 0~1	OV, user selec	ctable. Accur	acy and linear	ity: +/-0.15%	% of rated Voul	t.		
2. lout voltage programming (*14)		0~100%, 0	~5V or 0~1	OV, user selec	ctable. Accur	acy and linear	ity: +/-0.4%	of rated lout.			
3. Vout resistor programming		0~100%, 0	~5/10Kohm	full scale, use	er selectable.	Accuracy and	l linearity: +/	/-0.5% of rated	l Vout.		
4. lout resistor programming (*14)		0~100%, 0	~5/10Kohm	full scale, use	er selectable.	Accuracy and	l linearity: +/	/-0.5% of rated	l lout.		
5. Output voltage monitor		0~5V or 0-	~10V, user se	electable. Acc	uracy: +/-0.	5%.					
6. Output current monitor (*14)		0~5V or 0-	~10V, user se	electable. Acc	uracy: +/-0.	5%.					
Signals and Controls (Isolated from the Output)											
1. Power supply OK #1 signal		Power supp	ly output mor	nitor. Open col	llector. Outpu	ıt On: On. Outp	out Off: Off. N	1aximum Volta	ge: 30V, Maxin	num Sink Cur	rent: 10mA.
2. CV/CC signal		CV/CC Mon	itor. Open col	llector. CC mo	ode: On. CV r	node: Off. Max	kimum Voltag	e: 30V, Maxim	um Sink Curre	nt: 10mA.	
3. LOCAL/REMOTE Analogue control		Enable/Disa	ble analogue	programming	control by e	lectrical signa	l or dry conta	ct. Remote: 0-	~0.6V or short.	Local: 2~3	OV or open.
4. LOCAL/REMOTE Analogue signal									Voltage: 30V, M		Current: 10m
5. ENABLE/DISABLE signal		Enable/Disa	ble PS output	t by electrical	signal or dry	contact. 0~0	.6V or short,	2~30V or ope	en. User selecta	ble logic.	
6. INTERLOCK (ILC) control									: 2~30V or op		
7. Programmed signals		Two open d	rain programr	nable signals.	. Maximum v	oltage 25V, M	aximum sink	current 100mA	A (Shunted by 2	27V zener)	
8. TRIGGER IN / TRIGGER OUT signals		Maximum Io	ow level input	voltage $= 0.8$	8V,Minimum	high level inp	ut voltage =	2.5V, Maximu	m high level in	,	sitive edge
0 DALSY IN/SO control signal						Min delay betv	veen 2 pulses	s ims.			
9. DAISY_IN/SO control signal		-	•	0.6V/2~30V		JI.					
10. DAISY_OUT/PS_OK #2 signal		4~3V=UK	, uv (suuonm	impedance)=	=rall					-	
Functions and Features		Densit L. Li		Lunder 1. M.		de Def 1 1					
1. Parallel operation						de. Refer to ir	istruction ma	nual.			
2. Series operation				nits. Refer to i							
						synchronize th					
3. Daisy chain			utnut nower to	o a proddramr	med value. Pi	rogramming vi	ia the commu	inication ports	or the front par	nel.	
4. Constant power control			· ·								
4. Constant power control 5. Output resistance control		Emulates se	ries resistanc	e. Resistance	range: 1~1				ation ports or t	he front pane	Ι.
4. Constant power control	 	Emulates se Programma	ries resistanc ble Output ris	e. Resistance	range: 1~1 fall slew rate.	Programming		the communic D1~999.9V/m		he front pane	l

Specifications GENESYS+™ G (1.7kW)

Programming and Readback (USB, LAN, RS-232/ RS-485, Optional IEEE (*16) Interface)	V	10	20	30	40	60	80	100	150	300	600				
1. Vout programming accuracy (*15)		0.05% of ra	ated output vo	ltage											
2. lout programming accuracy (*14)		0.1% of act	tual output cu	rrent +0.2%	of rated output	t 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 (*14)		0.2% of rat	0.2% of rated output current												
7. Vout readback resolution (of rated output voltage)	%	0.011%	0.011% 0.006% 0.004% 0.003% 0.002% 0.002% 0.011% 0.007% 0.004% 0.												
8. lout readback resolution (of rated output current)	%	0.007%	0.002%	0.003%	0.003%	0.005%	0.006%	0.007%	0.010%	0.003%	0.0049				
Protective Functions	V	10	20	30	40	60	80	100	150	300	600				
1. Foldback protection		User preset	table. Reset b	y AC input re	/ changes mod cycle in autost	art mode, by P	ower Switch,	by OUTPUT b	utton, by rear	panel or by c					
2. Over-voltage protection (OVP)		Output shut	t-down. Reset	t by AC input	recycle in auto	start mode, by	OUTPUT but	ton, by rear pa	anel or by cor	mmunication.					
3. Over-voltage programming range	V	0.5~12	1~24	2~36	2~44.1	5~66.15	5~88.2	5~110.25	5~165.3	7 5~330.7	5 5~66				
4. Over-voltage programming accuracy		+/-1% of r	+/-1% of rated output voltage												
5. Output under voltage limit (UVL)		Prevents fro	Prevents from adjusting Vout below limit. Does not apply in analogue programming. Preset by front panel or communication port.												
5. Over temperature protection		Shuts dowr	n the output. A	Auto recovery	by autostart m	iode.									
7. Output under voltage limit (UVL)		Prevents ac	ljustment of V	/out below lin	nit.										
8. Output under voltage protection (UVP)			Prevents adjustment of Vour 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															
		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,RS-232,RS-485,USB or Optional communication interface. Output OV/OFF. Front Panel Lock. Communication Functions - Selection of Baud Rate, Address, IP and communication language. Analogue Control Functions - Selection Voltage/resistive programming, 5V/10V, 5K/10K programming							ace.						
2. Display		Analogue Monitor Functions - Selection of Voltage/Current Monitoring 5V/10V. 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, Cu	irrent, Power,	CV, CC, CP,	External Voltag	ge, External Cu	rrent, Addres	s, LFP, Autosta			,				
Environmental Conditions															
1. Operating temperature		0~50°C, 1	00% load.												
2. Storage temperature		-30~85°C													
3. Operating humidity	%	20~90% F	RH (no condei	nsation).											
4. Storage humidity	%	10~95% F	RH (no condei	nsation).											
5. Altitude		Operating: -	10000ft (3000), output ci	urrent derating	2%/100m or Ta	derating 1°C	/100m above	2000m. Non (operating: 400	00ft (1200				
Mechanical															
1. Cooling		Forced air (cooling by int	ernal fans. Ai	ir flow directior	: from Front pa	anel to power	supply rear							
2. Weight	kg	Less than 5	0,												
3. Dimensions (WxHxD)	mm	W: 423, H: 43.6, D: 441.5 (Without busbars and busbars cover), W: 423, H: 43.6, D: 553.5 (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 2	OG, half sine	, 11mS. Unit	is unpacked.										
Safety/EMC															
1. Applicable standards: Safety		UL60950-1	, CSA22.2 N	o.60950-1, IE	EC60950-1, EN	V60950-1.									
1.1 Interface classification					J4,J5,J6,J7,J8 (sense) are ha					options) are S	ELV				
1.2 Withstand voltage		60V≤ Vout Output - Gr 100 <vout< td=""><td>≤100V Mode ound: 1500V ≤600V Mode</td><td>els: Input - Ou dc 1min, Inpu els: Input - Ou</td><td>ELV): 4242Vdd utput: 4242Vdd ut - Ground: 28 utput: 4242Vdd ut - Ground: 28</td><td>1min, Input - 35Vdc 1min. 1min, Input -</td><td>SELV: 4242V</td><td>dc 1min, Outp</td><td></td><td></td><td></td></vout<>	≤100V Mode ound: 1500V ≤600V Mode	els: Input - Ou dc 1min, Inpu els: Input - Ou	ELV): 4242Vdd utput: 4242Vdd ut - Ground: 28 utput: 4242Vdd ut - Ground: 28	1min, Input - 35Vdc 1min. 1min, Input -	SELV: 4242V	dc 1min, Outp							
1.3 Insulation resistance		100Mohm	at 25°C, 70%	RH.											
0. Or a durate distribution		IEC/EN612	04-3 Industria	al environmer	nt. Annex H tab	le H.1 , FCC P	art 15-A, VCO	CI-A .							
2. Conducted emission															
2. Conducted emission 3. Radiated emission		IEC/EN612	04-3 Industria	al environmer	nt, Annex H tab		, FCC Part 15	5-A, VCCI-A							

*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).

For other models, the ripple is measured at 10% of rated output voltage. B.W 5Hz~1MHz. *14: The Constant Current programming, readance at loss of nace support on age. Ever on a final the warm-up and Load regulation thermal drift. *15: Measured at the sensing point.

*4: Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m.

*16: Maximum ambient temperature for IEEE option is 40°C.

*5: Not including EMI filter innush current, less than 0.2mS.
*6: 85~132/vac or 170~265/vac. Constant load.
*7: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.

*8: For 10V~150V models: Measured with JEITA RC-9131C (1:1) probe. For 300~600V 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% or 90% to 10% of Rated Output Voltage, with rated, resistive load.

*12: From 90% to 10% of Rated Output Voltage.



Specifications GENESYS+ $^{\text{TM}}$ G (5kW)

Output Rating	G	10-500	20-250	30-170	40-125	60-85	80-65	100-50	150-34	300-17	600-8.
1. Rated output voltage(*1)	V	10	20	30	40	60	80	100	150	300	600
2. Rated output current (*2)	A	500 (*3)	250	170	125	85	65	50	34	17	8.5
3. Rated output power	W	5000	5000	5100	5000	5100	5200	5000	5100	5100	5100
Input Characteristics	V	10	20	30	40	60	80	100	150	300	600
1. Input voltage/freq. 3 phase, 3 wire + Ground (*4)				170~265Vac			,				
				342~460Vac							
				342~528Vac		Covers 380/4	00/415/440/4	160/480Vac)			
2. Maximum Input current at 100% load				17.5A @ 200							
				9.2A @ 380V							
				9.2A @ 380V							
3. Power Factor (Typ)		~	· · ·	ted output pov	1						
4. Efficiency (*5)	%	89.5	91	91	91	91	91	91	91	92	92
5. Inrush current (*6)	A	Less than 5	1	00	40	0.0	00	400	450	000	600
Constant Voltage Mode	V	10	20	30	40	60	80	100	150	300	600
1. Max. Line regulation (*7)			ted output vo	*							
2. Max. Load regulation (*8)				ltage +5mV	75	75	0.0	00	100	000	400
3. Ripple and noise (p-p, 20MHz) (*9)	mV	75 8	75	75 12	75 12	75 12	80	90	120	200 60	480
4. Ripple r.m.s. 5Hz~1MHz (*9)	mV PPM/°C		10					15	20	60	100
5. Temperature coefficient				itput voltage, f				t line lead & t	0000		
6. Temperature stability 7. Warm-up drift				l output voltag				t line, load & t er on	emp.		
8. Remote sense compensation/wire (*10)	 V	Less than 0	2	5	5	30 minutes 1	5	5	5	5	5
9. Up-prog. Response time (*11)	mS	30	30	30	30	50	50	50	50	50	100
10. Down-prog.response time: Full load (*11)		50	50	80	80	80	100	100	100	100	200
No load (*12)	mS	300	600	800	900	1000	1200	1900	2000	3000	3000
11. Transient response time	mS							nge 10~90%			0000
								d including 10			100V.
12. Start up delay	Sec	Less than 5	Sec								
Constant Current Mode	V	10	20	30	40	60	80	100	150	300	600
1. Max. Line regulation (*7)		0.05% of ra	ted output cu	irrent.							
2. Max. Load regulation (*13)		0.08% of ra	ted output cu	irrent.							
3. Ripple r.m.s. @ 10% rated voltage (*14)	mA	1200	600	300	150	100	70	45	45	15	8
4. Ripple r.m.s. @ rated voltage. B.W. 5Hz~1MHz.	mA	700	300	150	75	50	35	23	23	7.5	4
5. Temperature coefficient	PPM/°C	10V~100V 150V~600		/°C from rated °C from rated o							
6. Temperature stability								t line, load & t			
7. Warm-up drift								es following po owing power o			
Analogue Programming and Monitoring (Isolat	od from th		V. LESS (11d)	T/-0.13/0 01				uwiliy power o			
1. Vout voltage programming)~5V or 0~	10V user sele	ctable Accur	acy and linea	ritv: +/-0 159	% of rated Voul			
2. lout voltage programming (*15)				10V, user sele							
3. Vout resistor programming						·		/-0.5% of rated	1 Vout		
4. lout resistor programming (*15)								/-0.5% of rated			
5. Output voltage monitor				electable. Acc				siele of faloe			
6. Output current monitor (*15)				electable. Acc							
Signals and Controls (Isolated from the Output			,		, ., o.						
1. Power supply OK #1 signal		Power supp	ly output mor	nitor. Open col	lector. Output	On: On. Outp	ut Off: Off. Max	kimum Voltage:	: 30V, Maximu	m Sink Curren	nt: 10mA.
2. CV/CC signal								je: 30V, Maxim			
3. LOCAL/REMOTE Analogue control		Enable/Disa	ble analogue	programming	control by ele	ctrical signal	or dry contact	. Remote: 0~0).6V or short. L	ocal: 2~30V	or open.
4. LOCAL/REMOTE Analogue signal								Maximum Volta			
5. ENABLE/DISABLE signal		Enable/Disa	ible PS outpu	it by electrical	signal or dry	contact. 0~).6V or short,	2~30V or ope	en. User select	able logic.	
6. INTERLOCK (ILC) control		Enable/Disa	ible PS outpu	it by electrical	signal or dry	contact. Rem	ote: 0~0.6V	or short. Local	: 2~30V or o	pen.	
7. Programmed signals		Two open d	rain program	mable signals	. Maximum v	oltage 25V, N	laximum sink	current 100mA	A (Shunted by	27V zener)	
8. TRIGGER IN / TRIGGER OUT signals				t voltage = 0. ut = 5V positi				2.5V, Tf=1us Maxin	num, Min dela	y between 2 r	oulses 1ms
9. DAISY IN/SO control signal				~0.6V/2~30V			.,				
10. DAISY OUT/PS OK #2 signal				n impedance)							
Functions and Features	1										
1. Parallel operation		Possible. U	p to 4 identic	al units in Ma	ster/Slave mo	de. Refer to i	nstruction ma	nual.			
2. Series operation				units. Refer to							
3. Daisy chain				onnected in D			heir turn-on a	nd turn-off.			
4. Constant power control								inication ports	or the front pa	inel.	
5. Output resistance control								the communic			el.
6. Slew rate control								01~999.9V/m			
		Programmir	ng via the coi	mmunication p	ports or the fre	ont panel.					
7. Arbitrary waveforms		Profiles of u	n to 100 ster	is can be store	d in 1 memor	rells Activa	tion by comm	and via the con	nmunication n	arta ar by tha t	front nanol

Specifications GENESYS+[™] G (5kW)

Programming and Readback (USB, LAN, RS-232/ RS-485, Optional IEEE(*19)(*20) Interface)	V	10	20	30	40	60	80	100	150	300	600			
		0.05% of rat	ed output vol	tage										
2. lout programming accuracy (*15)		0.1% of actu	al output cur	rent+0.2% 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 (*15)		0.2% of rate	d output curr	ent										
7. Vout readback resolution (of rated output voltage)	%	0.011%	0.006%	0.004%	0.003%	0.002%	0.002%	0.011%	0.007%	0.004%	0.002%			
8. lout readback resolution (of rated output current)	%	0.003%	0.005%	0.006%	0.009%	0.002%	0.002%	0.003%	0.004%	0.006%	0.002%			
Protective Functions	V	10	20	30	40	60	80	100	150	300	600			
1. Foldback protection						rom CV or Pow mode, by Pow								
2. Over-voltage protection (OVP)		Output shut-	down. Reset	by AC input re	ecycle in auto	start mode, by	OUTPUT butt	on, by rear par	nel or by comi	munication.				
3. Over-voltage programming range	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.			
4. Over-voltage programming accuracy		+/-1% of ra	ited output vo	ltage										
5. Output under voltage limit (UVL)		Prevents from adjusting Vout below limit. Does not apply in analogue programming. Preset by front panel or communication port.												
6. Over temperature protection		Shuts down	Shuts down the output. Auto recovery by autostart mode.											
				out below limi										
		Prevents adj	ustment of V	out below limi	t. P.S output	turns Off durin panel or by co		e condition. R	leset by AC in	put recycle in	autostart			
Front Panel		, 5, 10		.,										
1. Control functions		Multiple options with 2 Encoders 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,RS-232,RS-485,USB or Optional communication interface. Output ON/OFF. Front Panel Lock. Communication Functions - Selection of Baud Rate, Address, IP and communication language.												
2. Display		Analogue Control Functions - Selection Voltage/resistive programming, 5V/10V, 5K/10K programming Analogue Monitor Functions - Selection of Voltage/Current Monitoring 5V/10V. Vout: 4 digits, accuracy: 0.05% of rated output voltage +/-1 count. Iout: 4 digits, accuracy: 0.2% of rated output current +/-1 count.												
3. Front Panel Buttons Indications						TION, PROTEC	TION. CONFIG	GURATION, SY	STEM. SEQU	ENCER.				
		Voltage, Cur	rent, Power,	CV, CC, CP, E	xternal Voltag	e, External Cu unication, Trig	rrent, Address	, LFP, Autosta						
Environmental Conditions														
1. Operating temperature		0~50°C, 10)0% load.											
2. Storage temperature		-30~85°C												
3. Operating humidity	%	20~90% RI	H (no conden	sation).										
	%		H (no conden	,										
5. Altitude (*17)				,	nt derating 2%	/100m or Ta de	erating 1°C/100	Im above 2000	m Non operati	ing: 40000ft (1	2000m)			
Mechanical		oporating. It	000011	.,, ouput ouno	uoratiny 2 /t	,					20001117.			
1. Cooling		Forced air o	ooling by inte	ernal fans Air f	flow direction	: from Front pa	anel to nower	sunnly rear						
•	kg	Less than 7.	• •	All I				suppry roar						
	mm			.5 (Without bu	ushars and b	ishars cover)								
						ousbars cover),	(Refer to Outl	ine drawing).						
4. Vibration						n Annex C - 2.								
5. Shock		,		11mS. Unit is										
Safety/EMC			,,	210										
1. Applicable standards: Safety		UL60950-1	CSA22.2 No	.60950-1, IEC	C60950-1. FN	60950-1.								
1.1 Interface classification						(sense) and J) (communica	tion options) :	are SELV.					
						ardous, J1,J2,				otions) are SE	LV			
1.2 Withstand voltage		Vout ≤40V I 60V≤ Vout ≤ 0utput - Gro 100 < Vout≤	Models: Input ≤100V Model bund: 1500Vd ;600VModels	: - Output (SEL s: Input - Outp lc 1min, Input	V): 4242Vdc out: 4242Vdc - Ground: 28 ut: 4242Vdc 1	1min, Input - 1min, Input - 35Vdc 1min. min, Input - S	Ground: 2835 SELV: 4242Vd	Vdc 1min. c 1min, Outpu	ıt - SELV: 850	Vdc 1min,				
		100Mohm a	t 25°C, 70%F	RH.										
1.3 Insulation resistance		100Mohm at 25°C, 70%RH.												
1.3 Insulation resistance 2. Conducted emission			4-3 Industria	l environment.	IEC/EN61204-3 Industrial environment, Annex H table H.1 , FCC Part 15-A, VCCI-A .									
		IEC/EN6120				le H.1 , FCC P le H.3 and H4								

*4: For cases where conformance to various safety standards (UL, IEC, etc...) is required, to be described as 190-240Vac (50/60Hz) for 3-Phase 200V models, 380-415Vac (50/60Hz) for 3-Phase 400V models and 380-480Vac (50/60Hz) for 3-Phase models.

*5: 3-Phase 200V models: At 200Vac input voltage, 3-Phase 400/480V: At 380Vac input voltage. With rated output power

*6: Not including EMI filter inrush current, less than 0.2mS.
 *7: 3-Phase 200V models: 170-265Vac, 3-Phase 400V models: 342-460Vac, 3-Phase 480V models: 342-528Vac. Constant load.

*8: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.

*9: For 10V – 150V models: Measured with ETIA RC-9131C (1:1) probe. For 300–600V model: Measured with 100:1 probe.
 *10: The maximum voltage on the power supply terminals must not exceed the rated voltage.
 *11: From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated, resistive load.

- *18: Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m.
- *19: Max. ambient temperature for using IEEE is 40°C.

*17: For 10V model Ta derating 2°C/100m

 * 20: For 10V model only: Max. output current for using IEEE is 400A up to 40 $^{\circ}$ C and 450A up to 30 $^{\circ}$ C.

*15: The Constant Current programming, readback and monitoring accuracy do not include the warr-up and Laad regulation thermal drift. *16: Measured at the sensing point.



Specifications GENESYS+[™] GSP (10kW)

Output Rating	GSP	10-1000	20-500	30-340	40-250	60-170	80-130	100-100	150-68	300-34	600-1
1. Rated output voltage(*1)	V	10	20	30	40	60	80	100	150	300	600
2. Rated output current (*2)	A	1000 (*3)	500	340	250	170	130	100	68	34	17
3. Rated output power	kW	10	10	10.2	10	10.2	10.4	10	10.2	10.2	10.2
Input Characteristics	V	10	20	30	40	60	80	100	150	300	600
1. Input voltage/freq. 3 phase, 3 wire + Ground (*4)		3-Phase, 20	OV models:	170~265Vac,	47~63Hz (C	overs 200/23	OVac)				
		3-Phase, 40	OV models: 3	342~460Vac,	47~63Hz (C	overs 380/40	00/415Vac)				
		3-Phase, 48	OV models: 3	342~528Vac,	47~63Hz (C	overs 380/40	0/415/440/46	60/480Vac)			
2. Maximum Input current at 100% load		3-Phase, 20	OV models: 3	35A @ 200Va	С						
		3-Phase, 40	OV models: *	18.4A @ 380\	/ac						
		3-Phase, 48	OV models: *	18.4A @ 380\	/ac						
3. Power Factor (Typ)		0.94 @ 200)/380Vac, rat	ted output pow	er.						
4. Efficiency (*5)	%	89.5	90	91	91	91	91	91	91	92	92
5. Inrush current (*6)	A	Less than 10	00A								
6. AC line phase imbalance	%	< 5%									
Constant Voltage Mode	V	10	20	30	40	60	80	100	150	300	600
1. Max. Line regulation (*7)		0.01% of rat	ed output vo	ltage							
2. Max. Load regulation (*8)		0.01% of rat	ed output vo	ltage +5mV							
3. Ripple and noise (p-p, 20MHz) (*9)	mV	75	75	75	75	75	80	90	120	200	480
4. Ripple r.m.s. 5Hz~1MHz (*9)	mV	8	10	12	12	12	15	15	20	60	100
5. Temperature coefficient	PPM/°C	50PPM/°C f	rom rated ou	itput voltage, fo	ollowing 30 m	ninutes warm-	up.				
5. Temperature stability		0.01% of rat	ed Vout over	8hrs interval f	ollowing 30 r	ninutes warm	-up. Constant	line, load & te	mp.		
7. Warm-up drift		Less than 0.	05% of rated	l output voltage	e +2mV over	30 minutes fo	llowing powe	r 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	30	30	30	30	50	50	50	50	50	100
10. Down-prog.response time: Full load (*11)	mS	50	50	80	80	80	100	100	100	100	200
No load (*12)	mS	300	600	800	900	1000	1200	1900	2000	3000	3000
11. Transient response time	mS			o recover withi 00%, Local sen							100V.
12. Start up delay	Sec	Less than 7	Sec								
Constant Current Mode											
1. Max. Line regulation (*7)		0.05% of rat	ed output cu	irrent.							
2. Max. Load regulation (*13)		0.08% of rat	ed output cu	irrent.							
3. Ripple r.m.s. @ 10% rated voltage (*14)	mA	1500	1200	600	300	150	100	70	45	15	10
4. Ripple r.m.s. @ rated voltage. B.W. 5Hz~1MHz.	mA	1200	700	300	150	75	50	35	23	7.5	6
5. Temperature coefficient	PPM/°C	10V~100V 100PPM/°C from rated output current, following 30 minutes warm-up. 150V~600V 70PPM/°C from rated output current, following 30 minutes warm-up.									
6. Temperature stability		0.01% of rat	ed lout over	8hrs. interval f	ollowing 30 r	ninutes warm-	up. Constant	line, load & te	mperature.		
7. Warm-up drift				than +/-0.25 +/-0.15% of r							
Analogue Programming and Monitoring (Isolate	d from th	e Output)									
1. Vout voltage programming		0~100%, 0	~5V or 0~1	10V. user seled	stable Accure		tv: +/-0 15%	of rated Vout.			
2. lout voltage programming (*15)		0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.15% of rated Vout. 0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.4% of rated lout.									
2 Vout register programming		0~100%, 0	~5V or 0~1								
a. vout resistor programming		,			ctable. Accura	icy and lineari	ty: +/-0.4% c	of rated lout.	Vout.		
		0~100%, 0	~5/10Kohm	10V, user selec	ctable. Accura er selectable.	acy and lineari Accuracy and	ty: +/-0.4% c linearity: +/-	of rated lout. 0.5% of rated			
3. Vout resistor programming 4. lout resistor programming (*15) 5. Output voltage monitor		0~100%, 0 0~100%, 0	~5/10Kohm ~5/10Kohm	10V, user selec n full scale, use	ctable. Accura er selectable. er selectable.	acy and lineari Accuracy and Accuracy and	ty: +/-0.4% c linearity: +/-	of rated lout. 0.5% of rated			
4. lout resistor programming (*15)		0~100%, 0 0~100%, 0 0~5V or 0~	~5/10Kohm ~5/10Kohm ~10V, user s	10V, user selec n full scale, use n full scale, use	ctable. Accura er selectable. er selectable. uracy: +/-0.5	acy and lineari Accuracy and Accuracy and 5%.	ty: +/-0.4% c linearity: +/-	of rated lout. 0.5% of rated			
4. lout resistor programming (*15) 5. Output voltage monitor	 	0~100%, 0 0~100%, 0 0~5V or 0~	~5/10Kohm ~5/10Kohm ~10V, user s	10V, user selec n full scale, use n full scale, use electable. Acc	ctable. Accura er selectable. er selectable. uracy: +/-0.5	acy and lineari Accuracy and Accuracy and 5%.	ty: +/-0.4% c linearity: +/-	of rated lout. 0.5% of rated			
4. lout resistor programming (*15) 5. Output voltage monitor 6. Output current monitor (*15)	 	0~100%, 0 0~100%, 0 0~5V or 0~ 0~5V or 0~	~5/10Kohm ~5/10Kohm ~10V, user s ~10V, user s	10V, user selec n full scale, use n full scale, use electable. Acc	ctable. Accura er selectable. er selectable. uracy: +/-0. uracy: +/-0.	Accuracy and lineari Accuracy and Accuracy and 5%.	ty: +/-0.4% o linearity: +/- linearity: +/-	of rated lout. 0.5% of rated 0.5% of rated	lout.	m Sink Curren	t: 10mA.
4. lout resistor programming (*15) 5. Output voltage monitor 6. Output current monitor (*15) Signals and Controls (Isolated from the Output) 1. Power supply OK #1 signal	 	0~100%, 0 0~100%, 0 0~5V or 0~ 0~5V or 0~	~5/10Kohm ~5/10Kohm ~10V, user s ~10V, user s y output mon	10V, user select n full scale, use n full scale, use relectable. Acco relectable. Acco	ctable. Accura er selectable. er selectable. uracy: +/-0. uracy: +/-0. ector. Output	Accuracy and Accuracy and Accuracy and 5%. 5%. Dn: On. Output	ty: +/-0.4% c linearity: +/- linearity: +/-	of rated lout. 0.5% of rated 0.5% of rated mum Voltage:	lout. 30V, Maximu		t: 10mA.
4. lout resistor programming (*15) 5. Output voltage monitor 6. Output current monitor (*15) Signals and Controls (Isolated from the Output) 1. Power supply OK #1 signal 2. CV/CC signal		0~100%, 0 0~100%, 0 0~5V or 0~ 0~5V or 0~ Power suppl CV/CC Mon	~-5/10Kohm ~-5/10Kohm ~10V, user s ~10V, user s y output mom itor. Open co	10V, user selec n full scale, use n full scale, use selectable. Acc electable. Acc nitor. Open colli	ctable. Accura er selectable. er selectable. uracy: +/-0.9 uracy: +/-0.9 ector. Output 1 ector. Output 1 ode: On. CV m	Accuracy and Accuracy and Accuracy and 5%. 5%. Dn: On. Output node: Off. Max	ty: +/-0.4% c linearity: +/- linearity: +/- : Off: Off. Maxi imum Voltage	of rated lout. 0.5% of rated 0.5% of rated mum Voltage: : 30V, Maximu	lout. 30V, Maximur um Sink Curre	ent: 10mA.	
4. lout resistor programming (*15) 5. Output voltage monitor 6. Output current monitor (*15) Signals and Controls (Isolated from the Output) 1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analogue control	 	0~100%, 0 0~100%, 0 0~5V or 0~ 0~5V or 0~ Power suppl CV/CC Mon Enable/Disat	~5/10Kohm ~5/10Kohm ~10V, user s ~10V, user s y output mon itor. Open co ole analogue	10V, user select n full scale, use n full scale, use electable. Accc electable. Accc nitor. Open colli	ctable. Accura er selectable. er selectable. uracy: +/-0.3 uracy: +/-0.9 ector. Output (ode: On. CV m control by elector	Accuracy and Accuracy and Accuracy and 5%. 5%. On: On. Output node: Off. Max ctrical signal o	ty: +/-0.4% c linearity: +/- linearity: +/- i Off: Off. Maxi imum Voltage r dry contact.	of rated lout. 0.5% of rated 0.5% of rated mum Voltage: : 30V, Maximu Remote: 0~0.	lout. 30V, Maximur um Sink Curre 6V or short. Li	ent: 10mA. ocal: 2~30V (or open.
4. lout resistor programming (*15) 5. Output voltage monitor 6. Output current monitor (*15) Signals and Controls (Isolated from the Output)	 	0~100%, 0 0~100%, 0 0~5V or 0- 0~5V or 0- Power suppl CV/CC Mon Enable/Disat Analogue pro	~-5/10Kohm ~-5/10Kohm ~10V, user s ~10V, user s y output mon itor. Open co ole analogue gramming co	10V, user select n full scale, use n full scale, use electable. Acc: electable. Acc: nitor. Open colle nitor. CC mc programming of	ctable. Accura er selectable. er selectable. uracy: +/-0.3 uracy: +/-0.3 ector. Output (ode: On. CV m control by elei gnal. Open colle	Accuracy and lineari Accuracy and Accuracy and 5%. 5%. On: On. Output hode: Off. Max ctrical signal c actor. Remote:	ty: +/-0.4% c linearity: +/- linearity: +/- c Off: Off. Maxi imum Voltage r dry contact. Dn. Local: Off. N	of rated lout. 0.5% of rated 0.5% of rated 0.5% of rated mum Voltage: : 30V, Maximu Remote: 0~0. Maximum Voltag	lout. 30V, Maximur JM Sink Curre 6V or short. L Ge: 30V, Maxin	ent: 10mA. ocal: 2~30V (num Sink Curre	or open.
4. lout resistor programming (*15) 5. Output voltage monitor 6. Output current monitor (*15) Signals and Controls (Isolated from the Output) 1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analogue control 4. LOCAL/REMOTE Analogue signal 5. ENABLE/DISABLE signal	 	0~100%, 0 0~100%, 0 0~5V or 0~ 0~5V or 0~ Power suppl CV/CC Mon Enable/Disat Analogue pro Enable/Disat	~-5/10Kohm ~-5/10Kohm -10V, user s -10V, user s y output mon itor. Open co ble analogue gramming co ble PS output	10V, user select n full scale, use n full scale, use n full scale, use n full scale, use nelectable. Acco nelectable. Acco nitor. Open colli- pilector. CC mo programming of ntrol monitor sig nt by electrical	ctable. Accura er selectable. er selectable. uracy: +/-0.3 ector. Output 1 ector. Output 1 ode: On. CV m control by eler gnal. Open colle signal or dry	Accuracy and lineari Accuracy and Accuracy and 5%. 5%. 0n: On. Output node: Off. Max ctrical signal o ector. Remote: contact. 0~0	ty: +/-0.4% c linearity: +/- linearity: +/- c Off: Off. Maxi imum Voltage r dry contact. On. Local: Off. N 6V or short, 2	of rated lout. 0.5% of rated 0.5% of rated 0.5% of rated mum Voltage: : 30V, Maximu Remote: 0~0. Maximum Voltag ~30V or open	lout. 30V, Maximur um Sink Curre 6V or short. L ge: 30V, Maxin 1. User select	ent: 10mA. ocal: 2~30V (num Sink Curre able logic.	or open.
4. lout resistor programming (*15) 5. Output voltage monitor 6. Output vortent monitor (*15) Signals and Controls (Isolated from the Output) 1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analogue control 4. LOCAL/REMOTE Analogue signal 5. ENABLE/DISABLE signal 5. INTERLOCK (ILC) control		0~100%, 0 0~100%, 0 0~5V or 0- 0~5V or 0- Power suppl CV/CC Mon Enable/Disat Analogue pro Enable/Disat Enable/Disa	~5/10Kohm ~5/10Kohm ~10V, user s 10V, user s y output mon itor. Open co ole analogue gramming co ole analogue gramming co to the point output ble PS output	10V, user select n full scale, use n full scale, use n full scale, use n full scale, use nelectable. Acc: nitor. Open collector. CC mo programming of ntrol monitor sig at by electrical t by electrical	ctable. Accura er selectable. er selectable. uracy: +/-0.5 ector. Output 1 ode: On. CV m control by ele gnal. Open coll signal or dry signal or dry	ccy and lineari Accuracy and Accuracy and S%. 5%. On: On. Output node: Off. Max ctrical signal o ector. Remote: contact. 0~0 contact. Remo	ty: +/-0.4% c linearity: +/- linearity: +/- i Off: Off. Maxi imum Voltage r dry contact. On. Local: Off. N 6V or short, 2 te: 0~-0.6V o	of rated lout. 0.5% of rated 0.5% of rated mum Voltage: : 30V, Maximu Remote: 0~0. Maximum Voltag ~30V or oper r short. Local:	lout. 30V, Maximur um Sink Curre 6V or short. L ge: 30V, Maxin 1. User select 2~30V or op	ent: 10mA. ocal: 2~30V (num Sink Curre able logic. pen.	or open.
A. lout resistor programming (*15) Output voltage monitor Output current monitor (*15) Signals and Controls (Isolated from the Output) Power supply OK #1 signal CV/CC signal LOCAL/REMOTE Analogue control LOCAL/REMOTE Analogue signal S. ENABLE/DISABLE signal INTERLOCK (ILC) control Programmed signals		0~100%, 0 0~100%, 0 0~5V or 0- 0~5V or 0- Enable/Disat Analogue pro Enable/Disat Enable/Disat Two open dr Maximum Ic	~5/10Kohm ~5/10Kohm ~10V, user s ~10V, user s y output mon itor. Open co oble analogue gramming cou ble PS outpu ble PS outpu ain program w level inpu	10V, user select n full scale, use n full scale, use n full scale, use n full scale, use nelectable. Acco nelectable. Acco nitor. Open colli- pilector. CC mo programming of ntrol monitor sig nt by electrical	ctable. Accura er selectable. er selectable. uracy: +/-0.5 uracy: +/-0.5 ector. Output i ode: On. CV m control by eler nal. Open colle signal or dry signal or dry Maximum vc BV,Minimum	ccy and lineari Accuracy and Accuracy and Accuracy and 5%. 5%. On: On. Output ode: Off. Max ctrical signal o actor. Remote: contact. 0~0 contact. Remote: locatact. Remote: lo	ty: +/-0.4% c linearity: +/- linearity: +/- linearity: +/- c Off: Off. Maxi imum Voltage r dry contact. On. Local: Off. N 6V or short, 2 te: 0~0.6V o ximum sink c ut voltage = 2	of rated lout. 0.5% of rated 0.5% of rated 0.5% of rated mum Voltage: : 30V, Maximu Remote: 0~0. Maximum Voltag -~30V or oper r short. Local: urrent 100mA 2.5V,	lout. 30V, Maximuu am Sink Curre 6V or short. L De: 30V, Maxin h. User select 2~30V or op (Shunted by	ent: 10mA. ocal: 2~30V d num Sink Curre able logic. pen. 27V zener)	or open. nt: 10mA.
A. lout resistor programming (*15) Output voltage monitor Output current monitor (*15) Signals and Controls (Isolated from the Output) Power supply OK #1 signal CV/CC signal LOCAL/REMOTE Analogue control LOCAL/REMOTE Analogue signal ENABLE/DISABLE signal NITERLOCK (ILC) control Programmed signals RTIGGER IN / TRIGGER OUT signals		0~100%, 0 0~100%, 0 0~5V or 0- 0~5V or 0- Enable/Disat Analogue pro Enable/Disat Enable/Disat Two open dr Maximum Ic Maximum hit	~5/10Kohm ~5/10Kohm ~10V, user s -10V, user s y output mon itor. Open co ole analogue gramming co ole analogue gramming co ole PS outpu ain program w level inpu gh level inpu gh level inpu	10V, user select of full scale, use of full scale, use lelectable. Acc: electable. Acc: intor. Open colli- ollector. CC mo programming of ntrol monitor sig th by electrical the y electrical mable signals. t voltage = 0.0 tt = 5V positiv	ctable. Accura er selectable. er selectable. uracy: +/-0.5 uracy: +/-0.5 ector. Output 1 ode: On. CV m control by eler nal. Open colla signal or dry signal or dry Maximum vo BV,Minimum e edge trigge	ccy and lineari Accuracy and Accuracy and Accuracy and 5%. 5%. 0n: On. Output ode: Off. Max ctrical signal o actor. Remote: contact. 0~0 contact. Remote: locatact. Remote: locatact. 2~0 contact. Remote: locatact. 25V, Ma high level inp r: tw=10us m	ty: +/-0.4% c linearity: +/- linearity: +/- linearity: +/- c Off: Off. Maxi imum Voltage r dry contact. On. Local: Off. N 6V or short, 2 te: 0~0.6V o ximum sink c ut voltage = 2	of rated lout. 0.5% of rated 0.5% of rated 0.5% of rated mum Voltage: : 30V, Maximu Remote: 0~0. Maximum Voltag -~30V or oper r short. Local: urrent 100mA 2.5V,	lout. 30V, Maximuu am Sink Curre 6V or short. L De: 30V, Maxin h. User select 2~30V or op (Shunted by	ent: 10mA. ocal: 2~30V d num Sink Curre able logic. pen. 27V zener)	or open. nt: 10mA.
Iout resistor programming (*15) Output voltage monitor Output voltage monitor Output current monitor (*15) Signals and Controls (Isolated from the Output) Power supply OK #1 signal CV/CC signal LOCAL/REMOTE Analogue control LOCAL/REMOTE Analogue signal INTERLOCK (ILC) control Programmed signals RTRIGGER IN / TRIGGER OUT signal		0~100%, 0 0~100%, 0 0~5V or 0- 0~5V or 0- Power suppl CV/CC Mon Enable/Disat Analogue pro Enable/Disat Enable/Disa Two open dr Maximum hi By electricat	~5/10Kohm ~5/10Kohm ~10V, user s 10V, user s y output mon itor. Open co ole analogue gramming co ole analogue gramming co ole PS outpu ain program w level inpu gh level inpu Voltage: 0~	10V, user select of full scale, use of full scale, use relectable. Acc: electable. Acc: nitor. Open colli- ollector. CC mo programming of ntrol monitor sig they electrical they electrical mable signals. t voltage = 0.6 ut = 5V positiv -0.6V/2~30V	table. Accura er selectable. er selectable. uracy: +/-0.3 ector. Output 1 ode: On. CV m control by eler gnal. Open colli signal or dry signal or dry Maximum vo 8V,Minimum e edge trigge or dry contac	ccy and lineari Accuracy and Accuracy and Accuracy and 5%. 5%. 0n: On. Output ode: Off. Max ctrical signal o actor. Remote: contact. 0~0 contact. Remote: locatact. Remote: locatact. 2~0 contact. Remote: locatact. 25V, Ma high level inp r: tw=10us m	ty: +/-0.4% c linearity: +/- linearity: +/- linearity: +/- c Off: Off. Maxi imum Voltage r dry contact. On. Local: Off. N 6V or short, 2 te: 0~0.6V o ximum sink c ut voltage = 2	of rated lout. 0.5% of rated 0.5% of rated 0.5% of rated mum Voltage: : 30V, Maximu Remote: 0~0. Maximum Voltag -~30V or oper r short. Local: urrent 100mA 2.5V,	lout. 30V, Maximuu am Sink Curre 6V or short. L De: 30V, Maxin h. User select 2~30V or op (Shunted by	ent: 10mA. ocal: 2~30V d num Sink Curre able logic. pen. 27V zener)	or open. nt: 10mA.
A. lout resistor programming (*15) Coutput voltage monitor Output voltage monitor Coutput current monitor (*15) Signals and Controls (Isolated from the Output) Power supply OK #1 signal CV/CC signal LOCAL/REMOTE Analogue control LOCAL/REMOTE Analogue signal LOCAL/REMOTE Analogue signal INTERLOCK (ILC) control Programmed signals INTERLOCK (ILC) control COMISY_IN/SO control signal DAISY_IN/SO control signal DAISY_OUT/PS_OK #2 signal		0~100%, 0 0~100%, 0 0~5V or 0- 0~5V or 0- Power suppl CV/CC Mon Enable/Disat Analogue pro Enable/Disat Enable/Disa Two open dr Maximum hi By electricat	~5/10Kohm ~5/10Kohm ~10V, user s 10V, user s y output mon itor. Open co ole analogue gramming co ole analogue gramming co ole PS outpu ain program w level inpu gh level inpu Voltage: 0~	10V, user select of full scale, use of full scale, use lelectable. Acc: electable. Acc: intor. Open colli- ollector. CC mo programming of ntrol monitor sig th by electrical the y electrical mable signals. t voltage = 0.0 tt = 5V positiv	table. Accura er selectable. er selectable. uracy: +/-0.3 ector. Output 1 ode: On. CV m control by eler gnal. Open colli signal or dry signal or dry Maximum vo 8V,Minimum e edge trigge or dry contac	ccy and lineari Accuracy and Accuracy and Accuracy and 5%. 5%. 0n: On. Output ode: Off. Max ctrical signal o ector. Remote: contact. 0~0 contact. Remote: locatact. Remote: locatact. 2~0 contact. Remote: locatact. 25V, Ma high level inp r: tw=10us m	ty: +/-0.4% c linearity: +/- linearity: +/- linearity: +/- c Off: Off. Maxi imum Voltage r dry contact. On. Local: Off. N 6V or short, 2 te: 0~0.6V o ximum sink c ut voltage = 2	of rated lout. 0.5% of rated 0.5% of rated 0.5% of rated mum Voltage: : 30V, Maximu Remote: 0~0. Maximum Voltag -~30V or oper r short. Local: urrent 100mA 2.5V,	lout. 30V, Maximuu am Sink Curre 6V or short. L De: 30V, Maxin h. User select 2~30V or op (Shunted by	ent: 10mA. ocal: 2~30V d num Sink Curre able logic. pen. 27V zener)	or open. nt: 10mA.
A. lout resistor programming (*15) 5. Output voltage monitor 6. Output current monitor (*15) Signals and Controls (Isolated from the Output) 1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analogue control 4. LOCAL/REMOTE Analogue signal 5. ENABLE/DISABLE signal 6. 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		0~100%, 0 0~100%, 0 0~5V or 0- 0~5V or 0- Power suppl CV/CC Mon Enable/Disat Analogue pro Enable/Disat Enable/Disa Two open dr Maximum hi By electrical 4~5V=0K,	~5/10Kohm ~5/10Kohm ~10V, user s -10V, user s y output mon itor. Open co ole analogue gramming co ole analogue gramming co ble PS outpu ain program w level inpu y level inpu Voltage: 0~ 0V (500ohn	10V, user select of full scale, use of full scale, use relectable. Acc: electable. Acc: nitor. Open colli- ollector. CC mo programming of ntrol monitor sig they electrical they electrical mable signals. t voltage = 0.6 ut = 5V positiv -0.6V/2~30V	table. Accura er selectable. er selectable. uracy: +/-0.3 ector. Output 1 ode: On. CV m control by eler gnal. Open colli signal or dry signal or dry Maximum vo 8V,Minimum e edge trigge or dry contac	ccy and lineari Accuracy and Accuracy and Accuracy and 5%. 5%. 0n: On. Output ode: Off. Max ctrical signal o ector. Remote: contact. 0~0 contact. Remote: locatact. Remote: locatact. 2~0 contact. Remote: locatact. 25V, Ma high level inp r: tw=10us m	ty: +/-0.4% c linearity: +/- linearity: +/- linearity: +/- c Off: Off. Maxi imum Voltage r dry contact. On. Local: Off. N 6V or short, 2 te: 0~0.6V o ximum sink c ut voltage = 2	of rated lout. 0.5% of rated 0.5% of rated 0.5% of rated mum Voltage: : 30V, Maximu Remote: 0~0. Maximum Voltag -~30V or oper r short. Local: urrent 100mA 2.5V,	lout. 30V, Maximuu am Sink Curre 6V or short. L De: 30V, Maxin h. User select 2~30V or op (Shunted by	ent: 10mA. ocal: 2~30V d num Sink Curre able logic. pen. 27V zener)	or open. nt: 10mA.
A. lout resistor programming (*15) Coutput voltage monitor Coutput voltage monitor Coutput current monitor (*15) Signals and Controls (Isolated from the Output) Power supply OK #1 signal CV/CC signal LOCAL/REMOTE Analogue control LOCAL/REMOTE Analogue signal LOCAL/REMOTE Analogue signal INTERLOCK (ILC) control Programmed signals INTERLOCK (ILC) control rignal DAISY_IN/S0 control signal DAISY_IN/S0 control signal DAISY_OUT/PS_OK #2 signal Functions and Features Parallel operation		0~100%, 0 0~100%, 0 0~5V or 0- 0~5V or 0- Power suppl CV/CC Mon Enable/Disat Analogue pro Enable/Disat Enable/Disa Two open dr Maximum hi By electricat 4~5V=0K, Consult with	~5/10Kohm ~5/10Kohm ~10V, user s -10V, user s y output mon itor. Open co ole analogue gramming co ole analogue gramming co ble PS outpu ain program w level inpu y level inpu Voltage: 0~ 0V (500ohn Factory	10V, user select of full scale, use of full scale, use relectable. Acc: electable. Acc: nitor. Open colli- ollector. CC mo programming of ntrol monitor sig they electrical they electrical mable signals. t voltage = 0.6 ut = 5V positiv -0.6V/2~30V	table. Accura er selectable. er selectable. uracy: +/-0.3 ector. Output 1 ode: On. CV m control by eler gnal. Open colli signal or dry signal or dry Maximum vo 8V,Minimum e edge trigge or dry contac	ccy and lineari Accuracy and Accuracy and Accuracy and 5%. 5%. 0n: On. Output ode: Off. Max ctrical signal o ector. Remote: contact. 0~0 contact. Remote: locatact. Remote: locatact. 2~0 contact. Remote: locatact. 25V, Ma high level inp r: tw=10us m	ty: +/-0.4% c linearity: +/- linearity: +/- linearity: +/- c Off: Off. Maxi imum Voltage r dry contact. On. Local: Off. N 6V or short, 2 te: 0~0.6V o ximum sink c ut voltage = 2	of rated lout. 0.5% of rated 0.5% of rated 0.5% of rated mum Voltage: : 30V, Maximu Remote: 0~0. Maximum Voltag -~30V or oper r short. Local: urrent 100mA 2.5V,	lout. 30V, Maximuu am Sink Curre 6V or short. L De: 30V, Maxin h. User select 2~30V or op (Shunted by	ent: 10mA. ocal: 2~30V d num Sink Curre able logic. pen. 27V zener)	or open. nt: 10mA.
4. lout resistor programming (*15) 5. Output voltage monitor 6. Output current monitor (*15) Signals and Controls (Isolated from the Output) 1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analogue control 4. LOCAL/REMOTE Analogue signal 5. ENABLE/DISABLE signal 6. 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 1. Parallel operation 2. Series operation		0~100%, 0 0~100%, 0 0~5V or 0- 0~5V or 0- CV/CC Mon Enable/Disat Analogue pro Enable/Disat Enable/Disa Two open dr Maximum hi By electrical 4~5V=OK, Consult with	~5/10Kohm ~5/10Kohm ~10V, user s -10V, user s y output mon itor. Open co oble analogue gramming co ble PS outpu ble PS outpu ain program w level inpu y level inpu Voltage: 0~ 0V (500ohn I Factory Factory	10V, user select 10V, user select 10II scale, use 10II scale, use 10III scale, use 10III scale, use 10II scale, use 1	ctable. Accura er selectable. er selectable. uracy: +/-0.3 uracy: +/-0.4 ector. Output 1 ector. Output 1 ode: On. CV m control by ele gnal. Open coll signal or dry signal or dry Maximum vc BV, Minimum e edge trigge or dry contac = Fail	ccy and lineari Accuracy and Accuracy and S%. 5%. 0n: On. Output node: Off. Max ctrical signal o ector. Remote: contact. 0~0 contact. Remo ltage 25V, Ma high level inp r: tw=10us m t.	ty: +/-0.4% c linearity: +/- linearity: +/- i Off: Off. Maxi imum Voltage r dry contact. Dn. Local: Off. N 6V or short, 2 ote: 0~0.6V o xximum sink c ut voltage = 2 inimum. Tr,Tf	of rated lout. 0.5% of rated 0.5% of rated mum Voltage: : 30V, Maximu Remote: 0~0. Maximum Voltag :~30V or oper r short. Local: urrent 100MA 2.5V, = 1us Maximu	lout. 30V, Maximuu am Sink Curre 6V or short. L De: 30V, Maxin h. User select 2~30V or op (Shunted by	ent: 10mA. ocal: 2~30V d num Sink Curre able logic. pen. 27V zener)	or open. nt: 10mA.
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Specifications GENESYS+[™] GSP (15kW)

Output Rating	GSP	10-1500	20-750	30-510	40-375	60-255	80-195	100-150	150-102	300-51	600-25.
1. Rated output voltage(*1)	V	10	20	30	40	60	80	100	150	300	600
2. Rated output current (*2)	A	1500 (*3)	750	510	375	255	195	150	102	51	25.5
3. Rated output power	kW	15	15	15.3	15	15.3	15.6	15	15.3	15.3	15.3
Input Characteristics	V	10	20	30	40	60	80	100	150	300	600
1. Input voltage/freq. 3 phase, 3 wire + Gr	ound (*4)	3-Phase, 20	OV models: 17	0~265Vac, 47	~63Hz (Cover	s 200/230Vac)					
		3-Phase, 40	OV models: 34	2~460Vac, 47	~63Hz (Cover	s 380/400/415\	/ac)				
		3-Phase, 48	OV models: 34	2~528Vac, 47	~63Hz (Cover	s 380/400/415/	440/460/480V	ac)			
2. Maximum Input current at 100% load		3-Phase, 20	OV models: 52.	.5A @ 200Vac							
		3-Phase, 40	OV models: 27.	.6A @ 380Vac							
		3-Phase, 48	OV models: 27.	.6A @ 380Vac							
3. Power Factor (Typ)		0.94 @ 200	/380Vac, rated	output power.							
4. Efficiency (*5)	%	89.5	90	91	91	91	91	91	91	92	92
5. Inrush current (*6)	A	Less than 15	ioA								
6. AC line phase imbalance	%	< 5%									
Constant Voltage Mode	V	10	20	30	40	60	80	100	150	300	600
1. Max. Line regulation (*7)		0.01% of rat	ed output volta	ae			1			1	
2. Max. Load regulation (*8)		-	ed output volta	•							
3. Ripple and noise (p-p, 20MHz) (*9)	mV	75	75	75	75	75	80	90	120	200	480
4. Ripple r.m.s. 5Hz~1MHz (*9)	mV	8	10	12	12	12	15	15	20	60	100
5. Temperature coefficient	PPM/°		1 .	ut voltage, follo			1	1.2		1	1.50
6. Temperature stability					-	es warm-up. Co	onstant line. Ina	d & temn.			
7. Warm-up drift					0	inutes following	,				
8. Remote sense compensation/wire (*10)	V	2	2	5	5	5	5	5	5	5	5
9. Up-prog. Response time (*11)	mS	30	30	30	30	50	50	50	50	50	100
	Ill load (*11) mS	50	50	80	80	80	100	100	100	100	200
	o load (*12) mS	300	600	800	900	1000	1200	1900	2000	3000	3000
11. Transient response time	mS	Time for out	put voltage to r	ecover within O	.5% of its rated	output for a loa	id change 10~	90% of rated ou			0000
12. Start up delay	Sec	Less than 7 S		,		<u>,</u>		<u> </u>			
13. Hold-up time											
Constant Current Mode	V	10	20	30	40	60	80	100	150	300	600
1. Max. Line regulation (*7)		0.05% of rat	ed output curre	nt.		1	1	1		1	
2. Max. Load regulation (*13)			ed output curre								
3. Ripple r.m.s. @ 10% rated voltage (*14	1) mA	2000	1200	600	300	180	100	70	45	15	10
4. Ripple r.m.s. @ rated voltage. B.W. 5Hz		1200	700	300	150	90	60	35	23	7.5	6
5. Temperature coefficient	PPM/°	10V~100V	100PPM/°C	from rated out	put current, fol	lowing 30 minute		1.		1	
6. Temperature stability		0.01% of rat	ed lout over 8h	rs. interval follo	wing 30 minut	es warm-up. Co	nstant line, loa	d & temperature	9.		
7. Warm-up drift								na nowor on			
<i>r</i> . wann-up unit						current over 30 i t over 30 minute					
Analogue Programming and Monito		150V~600\									
·		150V~600\ the Output)	: Less than +/	/-0.15% of rate	d output currer		es following po	wer on.			
Analogue Programming and Monito		150V~600\ the Output) 0~100%, 0	/: Less than +/ ~5V or 0~10\	/-0.15% of rated /, user selectab	d output curren Ile. Accuracy a	t over 30 minute	es following po -0.15% of rated	ver on.			
Analogue Programming and Monito	oring (Isolated from	150V~600\ the Output) 0~100%, 0 0~100%, 0	/: Less than +/ ~5V or 0~10\ ~5V or 0~10\	/-0.15% of rate /, user selectab /, user selectab	d output curren Ile. Accuracy a Ile. Accuracy a	t over 30 minute nd linearity: +/-	es following po -0.15% of rated -0.4% of rated l	Vout.			
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Specifications GENESYS+[™] GSP (10/15kW)

Programming and Readback (USB, LAN, RS-232/ RS-485, Optional IEEE(*19)(*20) Interface)	V	10	20	30	40	60	80	100	150	300	600			
1. Vout programming accuracy (*16)		0.05% of rated output voltage												
2. lout programming accuracy (*15)		0.3% of rate	ed output curi	rent										
3. Vout programming resolution		0.002% of r	ated output v	oltage										
4. lout programming resolution		0.002% of r	ated output c	urrent										
5. Vout readback accuracy		0.05% of ra	ated output vo	oltage										
6. lout readback accuracy (*15)		0.2% of rate	ed output curi	rent										
7. Vout readback resolution (of rated output voltage)	%	0.011%	0.006%	0.004%	0.003%	0.002%	0.002%	0.011%	0.007%	0.004%	0.002%			
8. lout readback resolution GSP 10kW	%	0.012%	0.003%	0.004%	0.005%	0.007%	0.009%	0.012%	0.002%	0.003%	0.006%			
(of rated output current) GSP 15kW		0.012%	0.003%	0.003%	0.004%	0.005%	0.006%	0.008%	0.012%	0.003%	0.005%			
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 User presetable. Reset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by commun Output shut-down. Reset by AC input recycle in autostart mode, by OUTPUT button, by rear panel or by communication.												
2. Over-voltage protection (OVP)		Output shut	-down. Reset	by AC input r	recycle in auto	start mode, by	OUTPUT but	ton, by rear pai	nel or by comi	munication.				
3. Over-voltage programming range	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			
4. Over-voltage programming accuracy		+/-1% of r	ated output v	oltage										
5. Output under voltage limit (UVL)		Prevents fro	m adjusting '	Vout below lin	nit. Does not a	apply in analog	ue programm	iing. Preset by	front panel or	communicatio	on port.			
6. Over temperature protection		Shuts down	the output. A	Auto recovery I	by autostart m	iode.								
7. Output under voltage limit (UVL)		Prevents ad	justment of V	out below lim	iit.									
8. Output under voltage protection (UVP)						turns Off durin /er Switch, by (el or by comm	unication.				
Front Panel														
1. Control functions		Multiple options with 2 Encoders • Vout/lout/Power Limit manual adjust • OVP/UVL/UVP manual adjust • Protection Functions: OVP, UVP, Foldback, OCL, ENA, ILC • Communication Functions: Selection of LAN,IEEE,RS-232,RS-485, USB or Optional communication interface • Output ON/OFF, Front Panel Lock • Communication Functions: Selection of Baud Rate, Address, IP and communication language • Analogue Control Functions: Selection Voltage/resistive programming, 5V/10V, 5K/10K programming • Analogue Mor Functions: Selection of Voltage/Current Monitoring 5V/10V									imunicatio iunication			
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	I, ALARM, PF	REVIEW, FINE,	COMMUNIC	ATION, PROTEC	TION,CONFIG	GURATION, SY	STEM, SEQUE	NCER.				
4. Front Panel Display Indications		 Voltage, Current, Power, CV, CC, CP, External Voltage, External Current, Address, LFP, Autostart, Safetstart, Foldba Remote (communication), RS/USB/LAN/IEEE communication, Trigger, Load/Store Cell. 							oldback V/I,					
Environmental Conditions														
1. Operating temperature		0~50°C, 1	00% load.											
2. Storage temperature		-30~85°C												
3. Operating humidity	%	20~90% R	H (no conder	nsation).										
4. Storage humidity	%	10~95% R	0~95% RH (no condensation).											
5. Altitude (*17)		Operating: 1	0000ft (3000r	m), output curre	ent derating 29	5/100m or Ta de	rating 1°C/10	0m above 2000	m. Non operati	na: 40000ft (1	2000m).			
Mechanical		1 1 1 1 1 1		<i>,,</i>	5					3	,			
1. Cooling		Forced air o	ooling by int	ernal fans. Air	flow direction	1: from Front pa	inel to power	supply rear						
2. Weight GSP 10kW	kg	Less than 1		ornar land. 7 m	non unoonoi	n nonn nonn pi		ouppiy rour						
3. Dimensions (WxHxD) GSP 10kW	mm	W: 423, H	: 88, D: 441.	.5 (Without bu (Including bu		sbars cover), bars cover) (Re	efer to Outline	e drawing)						
2. Weight GSP 15kW	ka	Less than 2	,											
3. Dimensions (WxHxD) GSP 15kW	mm	W: 423, H: 132.5, D: 441.5 (Without busbars and busbars cover), W: 423, H: 132.5, D: 640 (Including busbars and busbars cover) (Refer to Outline drawing).												
4. Vibration						n Annex C - 2.		o uruwing).						
5. Shock				, 11mS. Unit is										
Safety/EMC		2000 11011 2	50, nun 31110,		o unpuonou.									
1. Applicable standards: Safety		111 60050.1	CSA22.2 N	o.60950-1, IE	C60950-1 EM	60950-1								
1.1 Interface classification						(sense) and J) (communic	ation options)	are SELV					
		$60 \le Vout \le$	600V Models	: Output, J8 (sense) are ha	ardous, J1,J2,	J3,J4,J5,J6,J	7 and J9 (com		otions) are SE	LV			
1.2 Withstand voltage		Vout ≤40V Models: Input - Output (SELV): 4242Vdc 1min, Input - Ground: 2835Vdc 1min. 60V≤ Vout ≤100V Models: Input - Output: 4242Vdc 1min, Input - SELV: 4242Vdc 1min, Output - SELV: 850Vdc 1min, 0utput - Ground: 1500Vdc 1min, Input - Ground: 2835Vdc 1min. 100 <vout -="" 1275vdc="" 1min,="" 1min,<="" 4242vdc="" input="" models:="" output="" output:="" selv:="" td="" ≤600v=""></vout>												
		Output - Gr	Output - Ground: 2500Vdc 1min, Input - Ground: 2835Vdc 1min.											
1.3 Insulation resistance			25°C, 70%RH											
1.3 Insulation resistance 2. Conducted emission		100MΩ at 2	25°C, 70%RH	l.		le H.1 , FCC P	art 15-A, VCC	CI-A .						
		100MΩ at 2 IEC/EN6120	25°C, 70%RH 04-3 Industria	I. al environment	t, Annex H tab									

* 3: Derate 10A/1°C above 40°C.
 *4: For cases where conformance to various safety standards (UL, IEC, etc...) is required, to be described as 190-240Vac (50/60Hz) for 3-Phase 200V models, 380-415Vac (50/60Hz) for 3-Phase 400V models and 380-480Vac (50/60Hz) for 3-Phase 480V models.

*5: 3-Phase 200V models: At 200Vac input voltage, 3-Phase 400/480V: At 380Vac input voltage. With rated output power.

*6: Not including EMI filter inrush current, less than 0.2mS. *7: 3-Phase 200V models: 170-265Vac, 3-Phase 400V models: 342-460Vac, 3-Phase 480V models: 342-528Vac. Constant load.

*8: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.

*9: For 10V~150V models: Measured with JEITA RC-9131C (1:1) probe. For 300~600V model: Measured with 100:1 probe.

*10: The maximum voltage on the power supply terminals must not exceed the rated voltage. *11: From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated, resistive load.

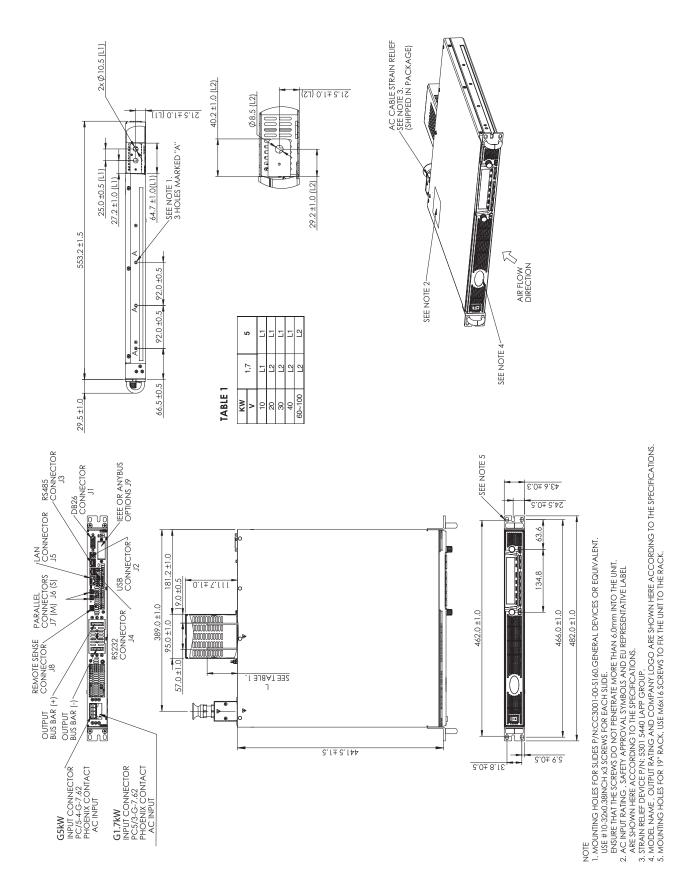
- *14: For 10V model the ripple is measured at 2V and rated output current. For other models, the ripple is measured at 10% of rated output voltage. B.W. 5Hz~1MHz. *15: The Constant Current programming, readback and monitoring accuracy
- do not include the warm-up and Load regulation thermal drift. *16: Measured at the sensing point. *17: For 10V model Ta derating 2°C/100m.

*18: Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m. *19: Max. ambient temperature for using IEEE is 40°C.

*20: For 10V model only: Max. output current for using IEEE is 800A up to 40°C and 900A up to 30°C (GSP10kW); 1200A up to 40°C and 1350A up to 30°C (GSP15kW)

G *E***NESYS**[™] Outline Drawings

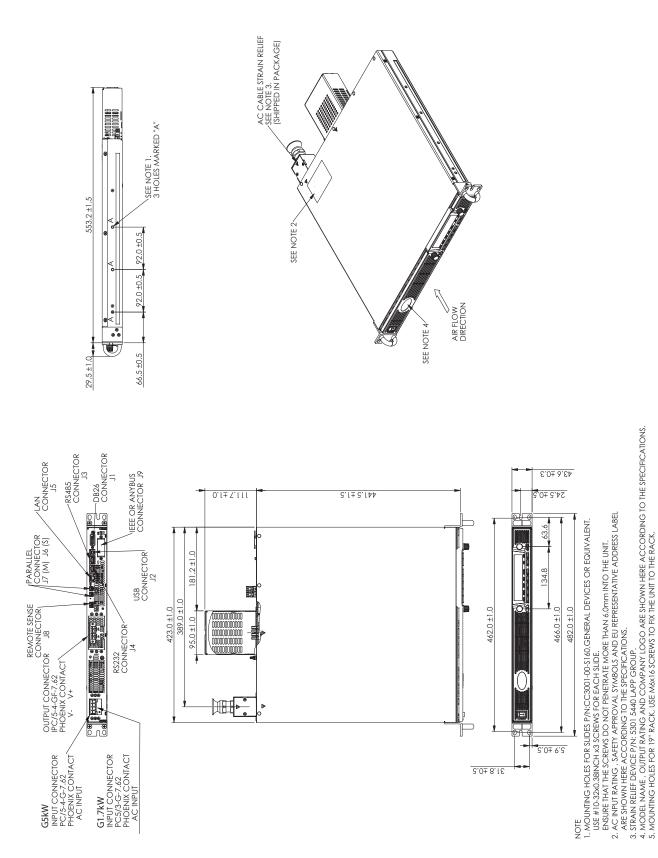
Outline Drawing GENESYS+[™] G (1.7/5kW)



TDK·Lambda

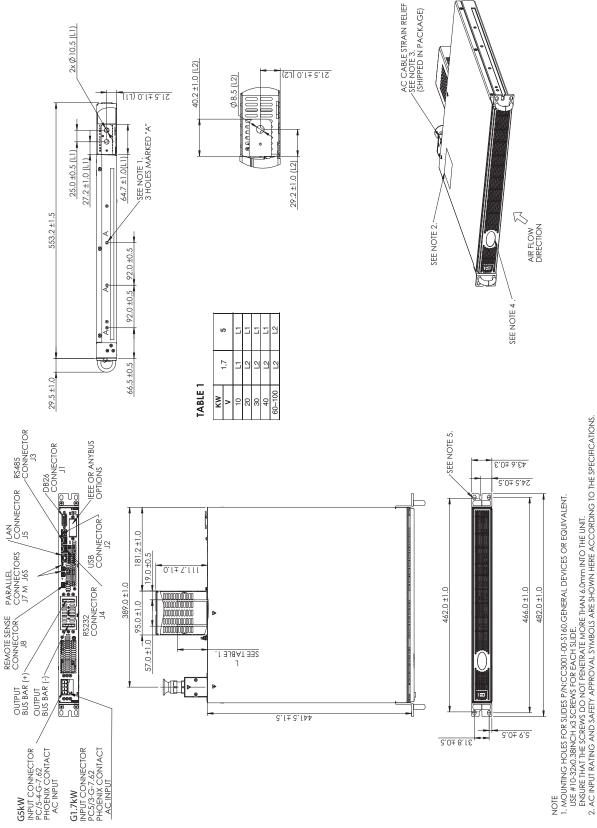
Outline Drawing GENESYS+[™] G (1.7/5kW)

(Models 150V/300V/600V)



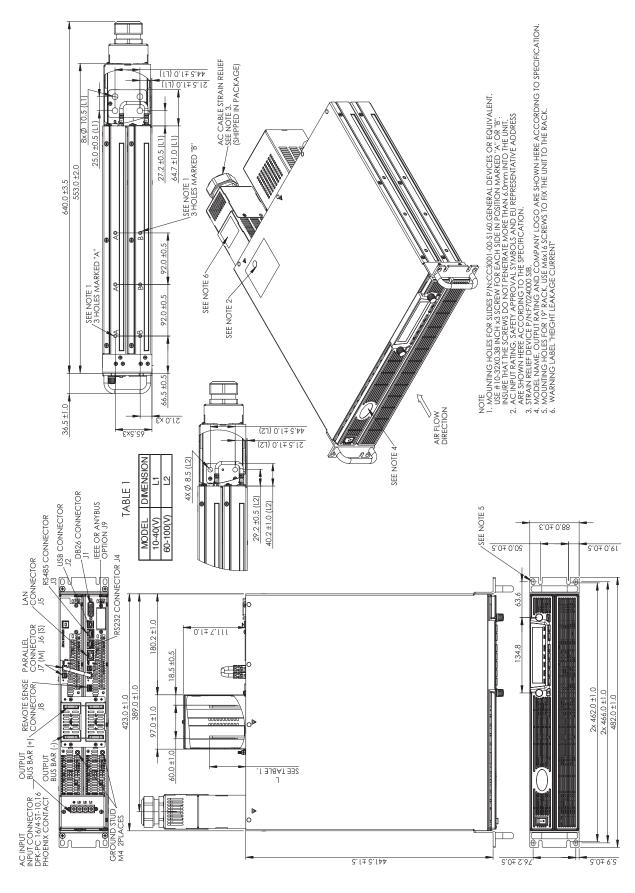
GENESYS"

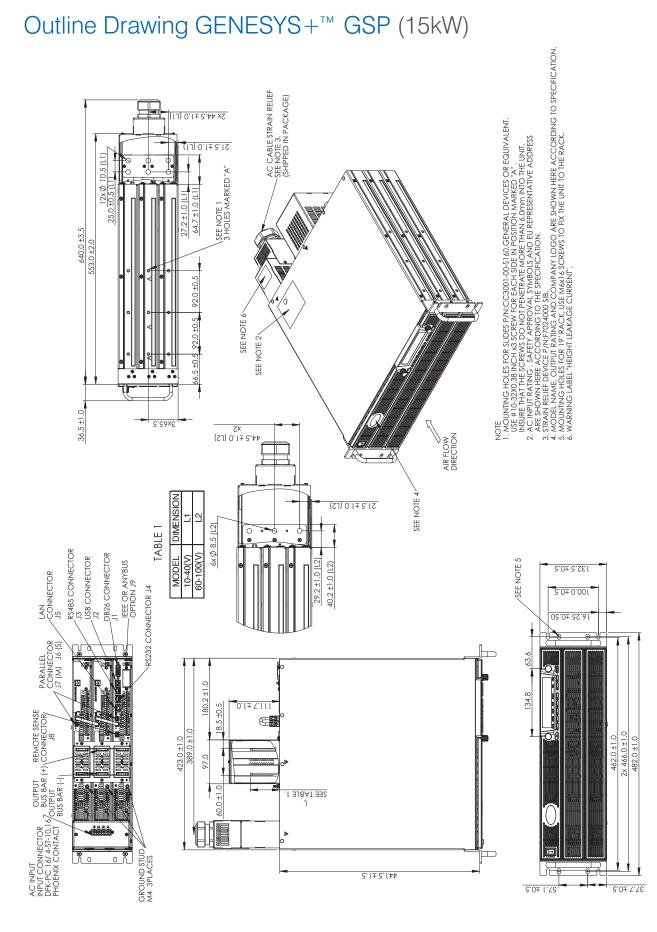
Outline Drawing GENESYS+[™] GB (1.7/5kW)



STRAIN RELIFE DEVICE P/N: 5301 5440 LAPP GROUP.
 MODEL NAME, OUTPUT RATING AND COMPANY LOGO ARE SHOWN HERE ACCORDING TO THE SPECIFICATIONS.
 MOUNTING HOLES FOR 19" RACK, USE M6x16 SCREWS TO FIX THE UNIT TO THE RACK.

Outline Drawing GENESYS+[™] GSP (10kW)



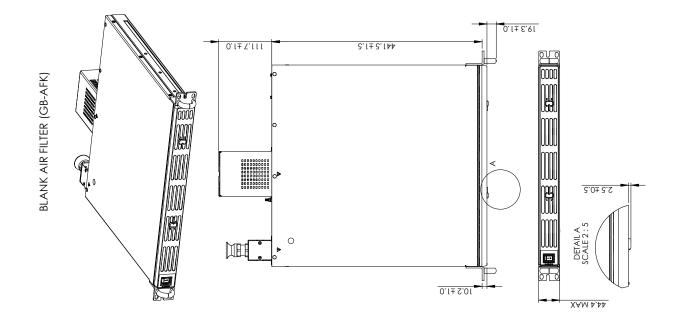


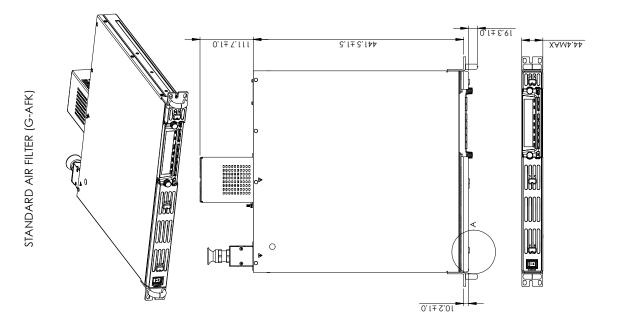
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GENESYS"

Outline Drawing GENESYS+[™] Air Filter Kit





Get in contact to find the best solution to your application.





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