



GENESYS G Series

Programmable DC Power Supplies
Half-Rack 1.5kW in 1U Height
Full-Rack 1.7kW/2.7kW/3.4kW/5kW in 1U Height
GSP 10kW/15kW in 2U/3U Height

# ! Advanced Features Built-In!

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



TDK-Lambda
Innovating Reliable Power



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

**Features include:** The <sup>™</sup> family of programmable power supplies sets a new standard for flexible, reliable, AC/DC power systems in OEM, Industrial and Laboratory applications

### Features include:

- Leading DC Programmable power density (5kW in 1U height, 10kW/15kW in 2U/3U height) in 19" rack-mount
- Light-weight 5kW<7.5 kg, GSP 10kW<15.5 kg, 15kW<23.5 kg
- Wide Range of popular worldwide AC inputs:

G1.7kW: 1ø (85~265VAC)

G2.7kW / G3.4kW: 1ø (170~265VAC), 3ø (208VAC, 400VAC)

G5kW / GSP10kW / 15kW: 3ø (208VAC, 400VAC & 480VAC), Wide-range 3ø 480VAC (342VAC ~ 528VAC)

- Active three-phase PFC (0.94 typical)
- Output Voltage up to 600V, Current up to 1500A
- Built-in LAN (LXI 1.5), USB, RS-232/RS-485 Interface
- Multi-Drop capability (RS-485)
- Multi-functional front panel display
- Last-Setting Memory
- Auto-Start / Safe-Start: user selectable
- High Resolution 16 bit ADCs & DACs
- Arbitrary Waveform Generator with Auto-Trigger Capability
- Store up to 100 steps into four internal memory cells
- High-speed Programming
- Constant Voltage/Constant Current operation modes
- Constant Power (CP) Limit
- Slew-Rate Control (V/I)
- Internal Resistance Programming Simulation
- Local / Remote Sensing software controlled
- Built-In Remote Isolated Analog Program/Monitor and Control Interface
- Protection functions (OVP, UVP, UVL, FOLD (CV/CC), OCL, OTP, AC FAIL)
- Fan speed profile controlled by ambient temperature and load
- Certified LabWindows™/CVI, LabVIEW™, and IVI Drivers
- Optional IEEE Interface
- 19" Rack Mount capability for ATE and OEM application
- Scalable Power Systems of 10kW and 15kW
- Parallel Systems (up to 30kW) with Auto-Configure
- Worldwide Safety Agency approvals
- CE Mark for Low Voltage, EMC and RoHS2 Directives









Five year warranty

# **Applications**

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

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

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

Higher power systems can be configured with up to four 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.

# **G1.7kW-5kW Front Panel Description**



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

# **G1.7kW-5kW Rear Panel Description**



- 1. Isolated Analog Programming, Monitoring and other control connector (DB26 Female)
- 2. USB Interface connector (Type B).
- 3. RS-232/RS-485 IN/OUT Remote Digital Interface (RJ-45 type) for Multi-Drop connection
- 4. LAN (LXI 1.5) Interface connector (RJ-45 type with LAN status indicators).
- 5. Auto paralleling Bus connectors (mini I/O type) for connecting Master unit-to-Slave and slave unit-to-slave unit.
- 6. Remote/Local Output Voltage Sense Connections (spring cage).
- 7. Output Connections: Rugged busbars (shown) for models up to and including 100V Output; Plug connector: PHOENIX CONTACT IPC 5/4-STF-7.62 for models with Outputs >100V.
- 8. G2.7kW / G3.4kW / G5kW Input: 208VAC, 400VAC & 480VAC Three Phase, 50/60 Hz. (Model shown) AC Input Plug Connector: PHOENIX CONTACT Power Combicon PC 5/4-STCL1-7.62 Series with strain relief. G1.7kW / G2.7kW / G3.4kW Input: 85~265VAC, Single Phase, 50/60 Hz. 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).
- 12. Reset button. Set default Power Supply settings.

# **GSP10kW Front Panel Description**



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

# **GSP10kW Rear Panel Description**



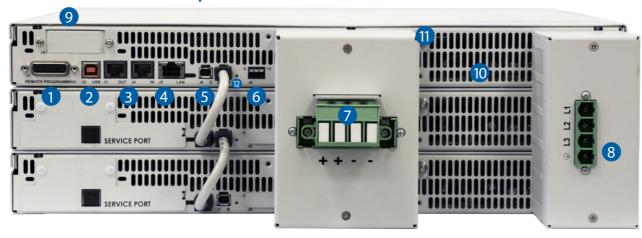
- 1. Isolated Analog Programming, Monitoring and other control connector (DB26 Female)
- 2. USB Interface connector (Type B).
- 3. RS-232/RS-485 IN/OUT Remote Digital Interface (RJ-45 type) for Multi-Drop connection
- 4. LAN (LXI 1.5) Interface connector (RJ-45 type with LAN status indicators).
- 5. Auto paralleling Bus connectors (mini I/O type) for connecting Master unit-to-Slave and slave unit-to-slave unit.
- 6. Remote/Local Output Voltage Sense Connections (spring cage).
- 7. Output Connections: Rugged busbars (shown) for models up to and including 100V Output; Plug connector: PHOENIX CONTACT DFK-IPC 16/4-STF-10.16 for models with Outputs >100V.
- 8. Input: 208VAC, 400VAC & 480VAC Three Phase, 50/60 Hz. 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).
- 12. Reset button. Set default Power Supply settings.

# **GSP15kW Front Panel Description**



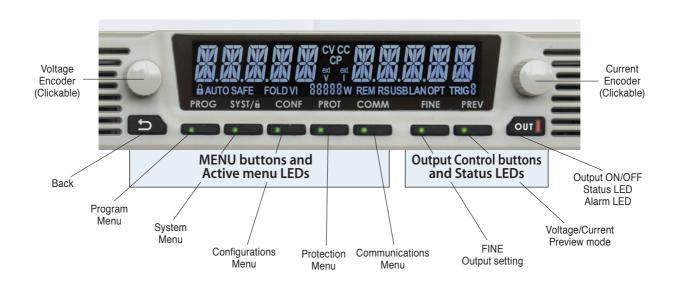
- 1. Input Power ON/OFF Switch
- 2. Air Intake allows zero stacking for maximum system flexibility and power density.
- 3. Reliable Detent Encoders for settings and Menu navigation.
- 4. High Contrast/Brightness display with wide viewing angle, 16 segment LCD
- 5. Function/Status LEDs: Active modes and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

# **GSP15kW Rear Panel Description**

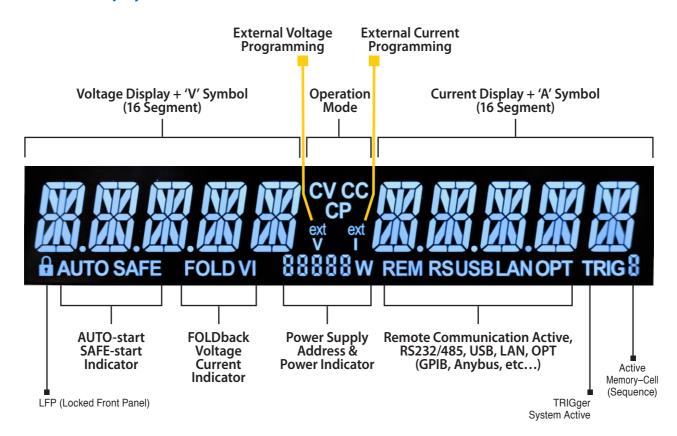


- 1. Isolated Analog Programming, Monitoring and other control connector (DB26 Female)
- 2. USB Interface connector (Type B).
- 3. RS-232/RS-485 IN/OUT Remote Digital Interface (RJ-45 type) for Multi-Drop connection
- 4. LAN (LXI 1.5) Interface connector (RJ-45 type with LAN status indicators).
- 5. Auto paralleling Bus connectors (mini I/O type) for connecting Master unit-to-Slave and slave unit-to-slave unit.
- 6. Remote/Local Output Voltage Sense Connections (spring cage).
- 7. Output Connections: Rugged busbars 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: 208VAC, 400VAC & 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).
- 12. Reset button. Set default Power Supply settings.

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



# **Front Panel Display indicators**



# GENESYS<sup>™</sup> G&GSP Series Blank Front Panel (ATE version) POWER (LED) POWER (LED)

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

The Blank Front Panel option has all the standard product functions and features except the display.

The power supply can be controlled via the rear panel Remote digital interface

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

# **G**ENESYS™ Parallel and Series Configurations

# Parallel operation - Master/Slave:

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

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

Separates Parallel Kit available for 30kW (6 unit) systems allowing easy system setup.

Order P/N: G/P - 6U

# Standard Unit - zero stacked up to 6 units ( 1000\*\* 5000\*\* 5000\*\* ) Standard & Blank - zero stacked up to 6 units ( 1000\*\* 5000\*\* 5000\*\* )

# **Series operation**

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

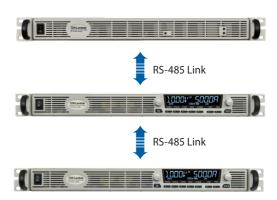
# **Multi-Drop Remote Programming via Communication Interface**

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

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



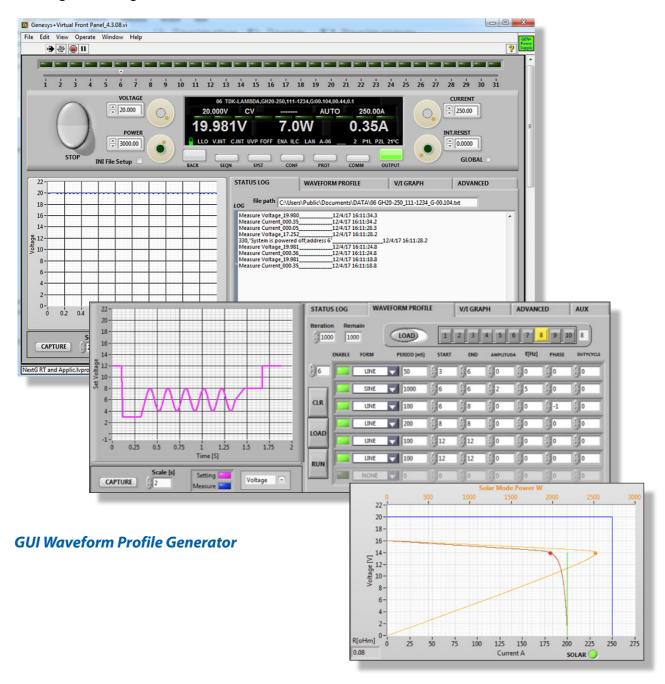




# **Graphical User Interface**

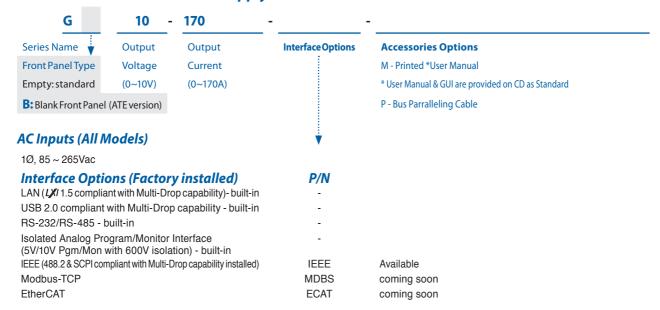
Advanced "Virtual Front Panel" allows programming and monitoring unit(s) with or without front panel display.

- 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



# TDK-Lambda

# How to order G1.7kW - Power Supply Identification / Accessories



# Models 1.7kW

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

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

# 2. Serial link cable (Included with the power supply)

Daisy-chain up to 31 **GENESYS™** power supplies.

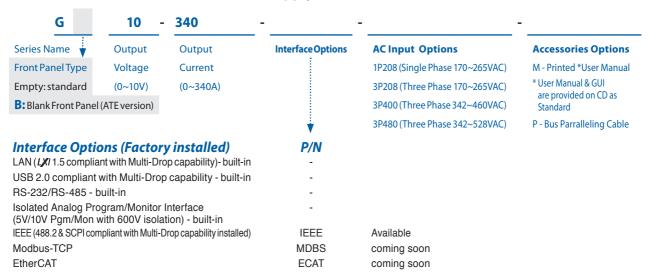
Mode	Power Supply Connector	Communication Cable	P/N
RS-485	RJ-45	Shielded L=50cm	GEN/RJ45

# 3. Bus Paralleling cable

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

Printed User Manual	G/M
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# How to order G2.7kW/3.4kW - Power Supply Identification / Accessories



# Models G2.7kW

Model	Output Voltage VDC	Output Current ( A )	Output Power (W)	Model	Output Voltage VDC	Output Current ( A )	Output Power ( W )
G10-265	0~10V	0~265	2650	G80-34	0~80V	0~34	2720
G20-135	0~20V	0~135	2700	G100-27	0~100V	0~27	2700
G30-90	0~30V	0~90	2700	G150-18	0~150V	0~18	2700
G40-68	0~40V	0~68	2720	G300-9	0~300V	0~9	2700
G60-45	0~60V	0~45	2700	G600-4.5	0~600V	0~4.5	2700

# **Models G3.4kW**

Model	Output Voltage VDC	Output Current ( A )	Output Power (W)	Model	Output Voltage VDC	Output Current ( A )	Output Power ( W )
G10-340	0~10V	0~340	3400	G80-42	0~80V	0~42	3360
G20-170	0~20V	0~170	3400	G100-34	0~100V	0~34	3400
G30-112	0~30V	0~112	3360	G150-22.5	0~150V	0~22.5	3375
G40-85	0~40V	0~85	3400	G300-11.5	0~300V	0~11.5	3450
G60-56	0~60V	0~56	3360	G600-5.6	0~600V	0~5.6	3360

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

# 2. Serial link cable (Included with the power supply)

Daisy-chain up to 31 **GENESYS™** power supplies.

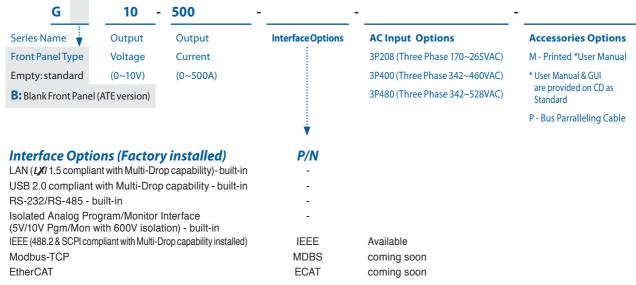
Mode	Power Supply Connector	Communication Cable	P/N
RS-485	RJ-45	Shielded L=50cm	GEN/RJ45

# 3. Bus Paralleling cable

Connectors	Cables	P/N
2013595-1 (TYCO)	Shielded L=11cm	G/P
4. User Manual		
Printed User Manual		G/M

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# How to order G5kW - Power Supply Identification / Accessories



# **Models 5kW**

Model	Output Voltage VDC	Output Current ( A )	Output Power (W)	Model	Output Voltage VDC	Output Current ( A )	Output Power (W)
G10-500	0~10V	0~500	5000	G80-65	0~80V	0~65	5200
G20-250	0~20V	0~250	5000	G100-50	0~100V	0~50	5000
G30-170	0~30V	0~170	5100	G150-34	0~150V	0~34	5100
G40-125	0~40V	0~125	5000	G200-25	0~200V	0~25	5000
G60-85	0~60V	0~85	5100	G300-17	0~300V	0~17	5100
				G600-8.5	0~600V	0~8.5	5100

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

# 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

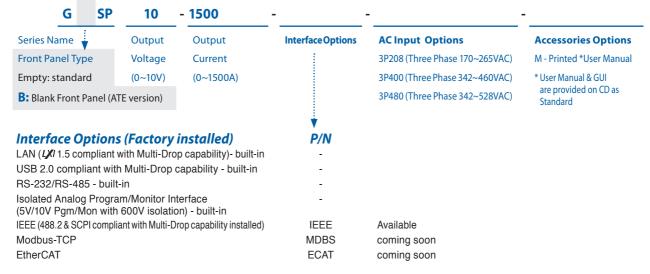
Connectors	onnectors Cables		
2013595-1 (TYCO)	2013595-1 (TYCO) Shielded L=11cm		
4. User Manual		·	
Printed User Manual		G/M	

# 5. Parallel Kit: 20kW/30kW

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

G/P-6U: BusBar Parallel Kit for 30 kW operation (5kW Models where Vout up to 100V)

# How to order GSP10kW-15kW - Power Supply Identification / Accessories



# Models GSP 10kW

Model	Output Voltage VDC	Output Current ( A )	Output Power ( kW )	
GSP10-1000	0~10V	0~1000	10	GS
GSP20-500	0~20V	0~500	10	GS
GSP30-340	0~30V	0~340	10.2	GS
GSP40-250	0~40V	0~250	10	GS
GSP60-170	0~60V	0~170	10.2	GS

Model	Output Voltage VDC	Output Current ( A )	Output Power ( kW )
GSP80-130	0~80V	0~130	10.4
GSP100-100	0~100V	0~100	10
GSP150-68	0~150V	0~68	10.2
GSP200-50	0~200V	0~50	10
GSP300-34	0~300V	0~34	10.2
GSP600-17	0~600V	0~17	10.2

# **Models GSP 15kW**

Model	Output Voltage	Output Current	Output Power
	VDC	( A )	( kW )
GSP10-1500	0~10V	0~1500	15
GSP20-750	0~20V	0~750	15
GSP30-510	0~30V	0~510	15.3
GSP40-375	0~40V	0~375	15
GSP60-255	0~60V	0~255	15.3

Model	Output Voltage VDC	Output Current ( A )	Output Power ( kW )
GSP80-195	0~80V	0~195	15.6
GSP100-150	0~100V	0~150	15
GSP150-102	0~150V	0~102	15.3
GSP200-75	0~200V	0~75	15
GSP300-51	0~300V	0~51	15.3
GSP600-25.5	0~600V	0~25.5	15.3

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

# 2. 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	

# TDK·Lambda

# **G**ENESYS<sup>™</sup> Family Output Voltage and Current

Models Series	G (Std Front Panel Display) GB (Blank Front Panel Display)				GSP (Scala	ble Power)
Rated Power	1.7kW	2.7kW	3.4kW	5kW	10kW	15kW
Voltage Range			Current F	Range (A)		
0-10V	0~170A	0~265A	0~340A	0~500A	0~1000A	0~1500A
0-20V	0~85A	0~135A	0~170A	0~250A	0~500A	0~750A
0-30V	0~56A	0~90A	0~112A	0~170A	0~340A	0~510A
0-40V	0~42A	0~68A	0~85A	0~125A	0~250A	0~375A
0-60V	0~28A	0~45A	0~56A	0~85A	0~170A	0~255A
0-80V	0~21A	0~34A	0~42A	0~65A	0~130A	0~195A
0-100V	0~17A	0~27A	0~34A	0~50A	0~100A	0~150A
0-150V	0~11.2A	0~18A	0~22.5A	0~34A	0~68A	0~102A
0-200V	-	-	0~25A	0~50A	0~75A	
0-300V	0~5.6A	0~9A	0~11.5A	0~17A	0~34A	0~51A
0-600V	0~2.8A	0~4.5A	0~5.6A	0~8.5A	0~17A	0~25.5A
Weight (kg/lb)	5/11	6.25/14.3	6.25/14.3	7.5/16.5	15.5/34.2	23.5/51.8

**AC Input Range** 

Rated Power	1.7kW	2.7kW	3.4kW	5kW	10kW	15kW
1Ø, 85-265Vac	*	N/A	N/A	N/A	N/A	N/A
1Ø, 170-265Vac		*	*	N/A	N/A	N/A
3P208	N/A	*	*	*	*	*
3P400	N/A	*	*	*	*	*
3P480	N/A	*	*	*	*	*

# Also available GH 1.5 kW Series Half-Rack 1.5kW in 1U Height



Models	s Series	GH (Std Front Panel Display) GHB (Blank Front Panel Display)
Model	Rated Power	1.5kW
Model	Voltage Range	Current Range (A)
GH10-150	0-10V	0~150A
GH20-75	0-20V	0~75A
GH30-50	0-30V	0~50A
GH40-38	0-40V	0~38A
GH60-25	0-60V	0~25A
GH80-19	0-80V	0~19A
GH100-15	0-100V	0~15A
GH150-10	0-150V	0~10A
GH300-5	0-300V	0~5.0A
GH600-2.6	0-600V	0~2.6A

# **G**ENESYS<sup>™</sup> 1.7kW SERIES SPECIFICATIONS

DUTPUT 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
.Rated output voltage(*1)	V	10	20	30	40	60	80	100	150	300	600
.Rated output current (*2)	A	170	85	56	42	28	21	17	11.2	5.6	2.8
Rated output power	W	1700	1700	1680	1680	1680	1680	1700	1680	1680	1680
IPUT CHARACTERISTICS	V	10	20	30	40	60	80	100	150	300	600
Input voltage/freq. (*3)		85~265Vac, c	ontinuous, 47	~63Hz,Single	Phase						
Maximum Input current at 100% load (100/200)	A	20/10	,		_						
Power Factor (Typ)			c 0.98 @ 200		1						
Efficiency at 100 Vac/200Vac, rated output (*19)	%	86/88	87/89	87/89	87/89	87/89	87/89	88/90	88/90	88/90	88/90
Inrush current (*5)	A	Less than 50/	1								
ONSTANT VOLTAGE MODE	V	10	20	30	40	60	80	100	150	300	600
Max. Line regulation (*6)		0.01% of rate	d output volta	age							
Max. Load regulation (*7)			d output volta								
Ripple and noise (p-p, 20MHz) (*8)	mV	50	50	50	60	60	75	75	75	120	500
Ripple r.m.s. 5Hz~1MHz (*8)	mV	6	6	6	7	7	10	12	8	20	100
Temperature coefficient					lowing 30 min			12		20	100
•					lowing 30 min			a land 0 tame			
Temperature stability									J.		
Warm-up drift			1		⊦2mV over 30 r						_
Remote sense compensation/wire (*10)	V	1	1	5	5	5	5	5	5	5	5
Up-prog. Response time (*11)	mS	20	20	20	20	20	20	25	50	100	100
D.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
.Transient response time	mS	Time for out	out voltage to	recover within	n 0.5% of its ra	ted output fo	a load chang	e 10~90% of r	ated output o	urrent. Output	t set-point
<u> </u>		10~100%, Lo	car sense. Less	tnan im5, for	models up to				ve 100V.		
2.Hold-up time	mS				16	ns typical, rat	ed output pov	ver			
ONSTANT CURRENT MODE	V	10	20	30	40	60	80	100	150	300	600
Max. Line regulation (*6)		0.01% of rate	d output curre	ent. +2mA							
Max. Load regulation (*9)			d output curre								
Ripple r.m.s. @ rated voltage. B.W 5Hz~1MHz. (*13)	) mA	≤400	≤160	≤100	≤60	≤50	≤30	≤30	≤10	≤8	≤5
•		10V~100V			out current, fo						
Temperature coefficient	PPM/°C				ut current, foll						
Temperature stability					lowing 30 min				perature		
Temperature stability											
147					atad autaut c	irrant aller 20					
.  NALOG PROGRAMMING AND MONITORING (ISOL  Vout voltage programming		150V~600V: I HE OUTPUT) 0~100%, 0~5	ess than +/-0.	15% of rated of	ated output contract output current  Accuracy and	over 30 minu linearity: +/-0	tes following p	oower on.	on.		
.Warm-up drift  NALOG PROGRAMMING AND MONITORING (ISOL .Vout voltage programming .lout voltage programming (*14) .Vout resistor programming .lout resistor programming	ATED FROM T	150V~600V: I HE OUTPUT) 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5	V or 0~10V, us V or 0~10V, us V or 0~10V, us /10Kohm full	er selectable. ser selectable. scale, user sele	Accuracy and Accuracy and Accuracy and ectable. Accur	linearity: +/-0 linearity: +/-0 acy and linear	.15% of rated \(\frac{1}{2}\).4% of rated \(\frac{1}{2}\).4% of rated \(\frac{1}{2}\).4% of rated \(\frac{1}{2}\).5% of	oower on.	n.		
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NALOG PROGRAMMING AND MONITORING (ISOL Yout voltage programming (*14) Vout resistor programming (*14) Vout resistor programming (*14) Output voltage monitor Output current monitor (*14)  GNALS AND CONTROLS (ISOLATED FROM THE OL Power supply OK #1 signal CV/CC signal LOCAL/REMOTE Analog control LOCAL/REMOTE Analog signal INTERLOCK (ILC) control Programmed signals INTERLOCK (ILC) control Programmed signals DAISY_IN/SO control signal D. DAISY_OUT/PS_OK #2 signal UNCTIONS AND FEATURES Parallel operation Series operation Daisy chain Constant power control Output resistance control Slew rate control Slew rate control Arbitrary waveforms ROGGRAMMING AND READBACK (USB, LAN, 5232/485, Optional IEEE (*18) Interfaces) Vout programming accuracy (*15) lout programming accuracy (*15)	ATED FROM T	150V~600V:1  HE OUTPUT) 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 Power supply CV/CC Monit Enable/Disat analog progr Enable/Disat Two open dr. Maximum I edge trigge By electrical 4~5V=OK, 0V Possible. Up Possible. Two Power suppli Limits the ou Emulates ser Programmat communicat Profiles of up  0.05% of rate 0.1% of actual	V or 0~10V, us V or 0~10V, us V or 0~10V, us V or 0~10V, us V 10Kohm full s V, user selecta V,	ser selectable. ser selectable. ser selectable. scale, user sele sable. Accuracy able. Accuracy stor. Open colli- ctor. CC mode gramming coi ol monitor sig oy electrical si able signals. N at voltage = ( ninimum. Tr, T by/2~30V or di pedance) = Fail  units in Master ss. Refer to ins nected in Dais a proggramm Resistance rai and Output file front panel. can be stored  30 age	Accuracy and Accuracy and Accuracy and Accuracy and Accuracy and Accuracy and Ectable. Accuracy and Accuracy	over 30 minu linearity: +/-0 linearity: +/-0 linearity: +/-0 acy and linear acy a	tes following in the fo	Jouer on.  Jout.  Jout.  Jout.  Jout.  Jout.  Journal of the state of	e: 30V, Maxim ink Current: 1 or short. Loca iltage: 30V, Ma er selectable   0V or open. hunted by 27V irimum high . or the front pa ports or the fr. or A/mSec. F. munication pc	omA.  al: 2~30V or op ximum Sink Cu ogic.  V zener) level input =  nel. ront panel. Programming v orts or by the fr	en.  Frent: 10m  5V positive  iia the  ont panel.
NALOG PROGRAMMING AND MONITORING (ISOL Vout voltage programming (*14) Vout resistor programming (*14) Vout resistor programming (*14) Output voltage monitor Output voltage monitor Output current monitor (*14)  GNALS AND CONTROLS (ISOLATED FROM THE OL Power supply OK #1 signal CV/CC signal LOCAL/REMOTE Analog control LOCAL/REMOTE Analog signal ENABLE/DISABLE signal INTERLOCK (ILC) control Programmed signals TRIGGER IN / TRIGGER OUT signals DAISY_IN/SO control signal D. DAISY_OUT/PS_OK #2 signal JNCTIONS AND FEATURES Parallel operation Series operation Daisy chain Constant power control Output resistance control Slew rate control Arbitrary waveforms ROGRAMMING AND READBACK (USB, LAN, S232/485, Optional IEEE (*18) Interfaces) Vout programming accuracy (*14) Vout programming accuracy (*14) Vout programming accuracy (*14)	ATED FROM T	150V~600V:1  HE OUTPUT) 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~5V or 0~10 0~10 0~5V or 0~10 0~10 0~10 0~10 0~10 0~10 0~10 0~10	V or 0~10V, us V output moni or. Open colle- ole analog pro amming contr ole PS output t sain programm ow level inpur: tw=10us m ow level inpur: tw=10us m ow level inpur: tw=10us m ow level inpur: tw=10us or (5000hm imp ow level inpur: tw=10us m ow level inpur ow	ser selectable. ser selectable. scale, user sele scale, u	Accuracy and Accuracy and Accuracy and Accuracy and Accuracy and Accuracy and Ectable. Accuracy and Accuracy	over 30 minu linearity: +/-0 linearity: +/-0 linearity: +/-0 acy and linear acy a	tes following in the fo	Jouer on.  Jout.  Jout.  Jout.  Jout.  Jout.  Journal of the state of	e: 30V, Maxim ink Current: 1 or short. Loca iltage: 30V, Ma er selectable   0V or open. hunted by 27V irimum high . or the front pa ports or the fr. or A/mSec. F. munication pc	omA.  al: 2~30V or op ximum Sink Cu ogic.  V zener) level input =  nel. ront panel. Programming v orts or by the fr	en.  Frent: 10m  5V positive  iia the  ont panel.
NALOG PROGRAMMING AND MONITORING (ISOL Vout voltage programming (*14) Vout voltage programming (*14) Vout resistor programming (*14) Output voltage monitor Output voltage monitor Output current monitor (*14)  IGNALS AND CONTROLS (ISOLATED FROM THE OL Power supply OK #1 signal CV/CC signal LOCAL/REMOTE Analog control LOCAL/REMOTE Analog signal ENABLE/DISABLE signal INTERLOCK (ILC) control Programmed signals	ATED FROM T	150V~600V:1  HE OUTPUT) 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~5V or 0~10 0~10 0~10 0~10 0~10 0~10 0~10 0~10	V or 0~10V, us V output moni or. Open colle- ole analog pro amming contr ole PS output be ain programm ow level inpur: tw=10us m voltage: 0~0.6 V (5000hm imp to 4 identical unit es can be cont tput power to les resistance. lele Output rise on ports or th to 100 steps o d output volta I output curre ed output vole ed output vole ed output vole ed output vole ed output curre	ser selectable. ser selectable. ser selectable. scale, user sele scale, us	Accuracy and Accuracy and Accuracy and Accuracy and Accuracy and Accuracy and Ectable. Accuracy and Accuracy	over 30 minu linearity: +/-0 linearity: +/-0 linearity: +/-0 acy and linear acy a	tes following in the fo	Jouer on.  Jout.  Jout.  Jout.  Jout.  Jout.  Journal of the state of	e: 30V, Maxim ink Current: 1 or short. Loca iltage: 30V, Ma er selectable   0V or open. hunted by 27V irimum high . or the front pa ports or the fr. or A/mSec. F. munication pc	omA.  al: 2~30V or op ximum Sink Cu ogic.  V zener) level input =  nel. ront panel. Programming v orts or by the fr	en. rrent: 10m.  5V positiv  ia the ont panel.
NALOG PROGRAMMING AND MONITORING (ISOL Vout voltage programming (*14) Vout voltage programming (*14) Vout resistor programming (*14) Vout resistor programming (*14) Output voltage monitor Output current monitor (*14)  IGNALS AND CONTROLS (ISOLATED FROM THE OU Power supply OK #1 signal .CV/CC signal .LOCAL/REMOTE Analog control .LOCAL/REMOTE Analog signal .ENABLE/DISABLE signal .INTERLOCK (ILC) control Programmed signals .TRIGGER IN / TRIGGER OUT signals .DAISY_IN/SO control signal 0. DAISY_OUT/PS_OK #2 signal  UNCTIONS AND FEATURES .Parallel operation .Daisy chain .Constant power control .Output resistance control .Slew rate control .Arbitrary waveforms  ROGRAMMING AND READBACK (USB, LAN, \$232/485, Optional IEEE (*18) Interfaces) Vout programming accuracy (*15) Lout programming resolution	ATED FROM T	150V~600V:1  HE OUTPUT) 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~5V or 0~10	V or 0~10V, us V or 0~10V, user selecta V output moni or. Open colle Ole analog pro amming contr ole PS output t Sole PS output	ser selectable. ser selectable. ser selectable. scale, user sele scale, us	Accuracy and Accuracy and Accuracy and Accuracy and Accuracy and Accuracy and Ectable. Accuracy and Accuracy	over 30 minu linearity: +/-0 linearity: +/-0 linearity: +/-0 acy and linear acy a	tes following in the fo	Jouer on.  Jout.  Jout.  Jout.  Jout.  Jout.  Journal of the state of	e: 30V, Maxim ink Current: 1 or short. Loca iltage: 30V, Ma er selectable   0V or open. hunted by 27V irimum high . or the front pa ports or the fr. or A/mSec. F. munication pc	omA.  al: 2~30V or op ximum Sink Cu ogic.  V zener) level input =  nel. ront panel. Programming v orts or by the fr	en. rrent: 10m/ 5V positiv ia the ont panel.
. NALOG PROGRAMMING AND MONITORING (ISOL .Vout voltage programming .lout voltage programming (*14)	ATED FROM T	150V~600V:1  HE OUTPUT) 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~100%, 0~5 0~5V or 0~10	V or 0~10V, us V output moni or. Open colle- ole analog pro amming contr ole PS output be ain programm ow level inpur: tw=10us m voltage: 0~0.6 V (5000hm imp to 4 identical unit es can be cont tput power to les resistance. lele Output rise on ports or th to 100 steps o d output volta I output curre ed output vole ed output vole ed output vole ed output vole ed output curre	ser selectable. ser selectable. ser selectable. scale, user sele scale, us	Accuracy and Accuracy and Accuracy and Accuracy and Accuracy and Accuracy and Ectable. Accuracy and Accuracy	over 30 minu linearity: +/-0 linearity: +/-0 linearity: +/-0 acy and linear acy a	tes following in the fo	Jouer on.  Jout.  Jout.  Jout.  Jout.  Jout.  Journal of the state of	e: 30V, Maxim ink Current: 1 or short. Loca iltage: 30V, Ma er selectable   0V or open. hunted by 27V irimum high . or the front pa ports or the fr. or A/mSec. F. munication pc	omA.  al: 2~30V or op ximum Sink Cu ogic.  V zener) level input =  nel. ront panel. Programming v orts or by the fr	en. rrent: 10m/ 5V positiv ia the ont panel.

# **GENESYS™ 1.7kW SERIES SPECIFICATIONS**

DROTECTIVE FUNCTIONS		V	10	20	20	40	60	90	100	150	200	Τ,	500
PROTECTIVE FUNCTIONS		V	10	20	30	40	60	80	100	150	300		500
1.Foldback protection									CC mode or fro OUTPUT butt			/ mode. nmunica	ation.
2.Over-voltage protection (OVP)									on, by rear par				
<ol><li>Over -voltage programming rar</li></ol>		V	0.5~12	1~24	2~36	2~44.1	5~66.15	5~88.2	5~110.25	5~165.37	5~330.75	5~	661.5
4. Over-voltage programming acc			+/-1% of rate										
5.Output under voltage limit (UVI	L)							programming	j. Preset by fro	nt panel or co	mmunicatio	n port.	
6.Over temperature protection						y autostart mo	de.						
7. Output under voltage limit (UV	L)				ut below limit								
8. Output under voltage protection	on (UVP)		Prevents adju mode, by Pov	stment of Vo ver Switch, by	ut below limit OUTPUT butt	P.S output tu on, by rear pa	rns Off during nel or by com	under voltag munication.	je condition. R	leset by AC inp	out recycle ir	autosta	art
FRONT PANEL													
1.Control functions			Multiple opti	ons with 2 En	coders								
			Vout/Iout/Po										
			OVP/UVL/UVI										
						dback, OCL, Ei							
						LAN,IEEE,RS2	32,RS485,USB	or Optional c	ommunication	n interface.			
			Output ON/O										
						Baud Rate, Ad							
									10K programm	ning			
						Voltage/Curre		g 5V/10V.					
2.Display						utput voltage							
2 F D   D++						put current +/		N CONFICUR	ATIONI CVCTEA	A CEOUENCE			
3.Front Panel Buttons Indications									ATION, SYSTEN				
4. Front Panel Display Indications			Voltage, Curr (communicat	ent, Power, C\ ion), RS/USB/	/, CC, CP, Exter LAN/IEEE com	nal Voltage, E munication, Ti	xternal Currer rigger, Load/S	nt, Address, Ll Store Cell.	P, Autostart, S	Safetstart, Fold	dback V/I, Re	mote	
ENVIRONMENTAL CONDITIONS													
1.Operating temperature			0~50°C, 100%	load.									
2.Storage temperature			-30~85°C										
3.Operating humidity		%	20~90% RH (r	no condensat	ion).								
4.Storage humidity		%	10~95% RH (r										
5.Altitude (*16)						ant derating 20	%/100m or Ta	derating 1°C/	100m above 20	000m Non on	erating: 400	nnf+ (120	)()(m)
			Toperating. 10	100011 (300011	i, output curre	ent derating 2	70/1001110111	derating i c/	TOOTH ADOVE 21		erating. 400	7011 (120	700111).
MECHANICAL			E 1.	P. 1. 2. 4	16 4: 0	1: .: .		T.					
1.Cooling					nai tans. Air tic	w direction: fi	rom Front par	nei to power s	uppiy rear				
2.Weight		kg	Less than 5kg										
3.Dimensions (WxHxD)		mm	W: 423, H: 4 W: 423, H: 4	3.6, D: 441.5 3.6, D: 553.5	ร์ (Without bu ร์ (Including b	ısbars and bu ousbars and b	usbars cover ousbars cove	), er) (Refer to (	Outline drawi	ing).			
4.Vibration			MIL-810G, me	thod 514.6, P	rocedure I, tes	t condition Ar	nex C - 2.1.3.1	1					
5.Shock			Less than 200	i, half sine, 11	mSec. Unit is ι	ınpacked.							
SAFETY/EMC													
1. Applicable standards:	Safety		UL60950-1, C	SA22.2 No.60	950-1, IEC6095	0-1, EN60950	-1.						
1.1. Interface classification			Vout ≤40V Me 60≤ Vout≤ 6	odels: Output 00V Models: 0	, J1,J2,J3,J4,J5 Output, J8 (ser	,J6,J7,J8 (sensense) are hazaro	e) and ,J9 (con lous, J1,J2,J3,	nmunication of	options) are SE d J9 (communi	ELV. ication option	s) are SELV		
			Vout < 40V M	ladale: Incut	- Output (SE	I \/\· 4242\/D/	1min Innut	- Ground: 2	B35VDC 1min				
1.2 Withstand voltage			60V≤Vout≤1	00V Models:	Input - Outpu		1min, Input -	SELV: 4242\	/DC 1min, Ou		850VDC 1n	nin,	
					, ,				VDC 1min, Ou	utput - SELV:	1500VDC 1	min,	
1.3 Insulation resistance	1		100Mohm at										
2.Conducted emmision				-	nvironment. A	nnex H table I	H.1 , FCC Part	15-A, VCCI-A .					
3.Radiated emission						nnex H table I			VCCI-A				
4. EMC compliance	EMC(*17)				-3 Industrial er		unu 117, F	ceruit IJ-A,					
4. LIVIC COMPHANCE	LIVIC("17)		According to	ILC/ENDIZU4	inuustriai et	ivironinent							

# **G**ENESYS™ 2.7kW SERIES SPECIFICATIONS

OUTPUT RATING		G	10-265	20-135	30-90	40-68	60-45	80-34	100-27	150-18	300-9	600-4.5
1.Rated output voltage(*1)		V	10	20	30	40	60	80	100	150	300	600
2.Rated output current (*2)		A	265	135	90	68	45	34	27	18	9	4.5
3.Rated output power		W	2650	2700	2700	2720	2700	2720	2700	2700	2700	2700
INPUT CHARACTERISTICS		V	10	20	30	40	60	80	100	150	300	600
1.Input voltage/freq. 3 phase, 3 wire	e + Ground (*4)		3-Phase, 400 3-Phase, 480	V models: 342 V models: 342	2~460Vac, 47~ 2~528Vac, 47~	63Hz (Covers	200/230Vac) 380/400/415\ 380/400/415/4 200/208/230/	140/460/480V	/ac)			
2. Maximum Input current at 100% load 3	Phase, 200V models: -Phase, 400V models: -Phase, 480V models: -Phase, 200V models:		10A @ 200Va 5.5A @ 380Va 5.5A @ 380Va 16A @ 200Va	IC IC								
	Thuse, 2007 models.				30Vac, rated o	utput power.						
3.Power Factor (Typ) —					c, rated outpu					_	,	
4.Efficiency (Typ) (*5) (*22)		%	88	89	89.5	90	90	90.5	90.5	90.5	90.5	90.5
5.Inrush current (*6)		A	Less than 50/									
CONSTANT VOLTAGE MODE		V	10	20	30	40	60	80	100	150	300	600
1.Max. Line regulation (*7)				d output volt	-							
2.Max. Load regulation (*8)	W			d output volt	1	75	00	00	100	120	200	400
3.Ripple and noise (p-p, 20MHz) (*9	")	mV mV	75 8	75 10	75 10	75 12	80	80 15	100	120 20	200 60	480 100
4.Ripple r.m.s. 5Hz~1MHz (*9) 5.Temperature coefficient		PPM/°C			1		nutes warm-u		15	20	60	100
									ine, load & ten	an.		
6.Temperature stability 7. Warm-up drift							minutes follo					-
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
F	ull load (*11)	mS	50	50	80	80	80	100	100	100	100	200
10 Down-prog recoonce time:	o load (*12)	mS	450	600	800	900	1100	1300	2100	2000	3000	3000
11.Transient response time		mS	Time for outp 10~100%, Lo	out voltage to cal sense. Les	recover with	in 0.5% of its r	ated output fo	or a load char		f rated output	current. Outp	ut set-point:
12.Start up delay		Sec	Less than 6 Se	ec								
CONSTANT CURRENT MODE		V	10	20	30	40	60	80	100	150	300	600
1.Max. Line regulation (*7)			0.05% of rate	d output curr	rent.							
2.Max. Load regulation (*13)				d output curr	rent.							
3.Ripple r.m.s. @ rated voltage. 3-Ph		mA	≤800	≤450	≤300	≤150	≤100	≤70	≤45	≤30	≤12	≤5
4.Ripple r.m.s. @ rated voltage. 1-Ph	ase (*14)	mA	≤1200	≤600	≤300	≤300	≤200	≤100	≤60	≤40	≤12	≤8
5.Temperature coefficient		PPM/°C	150V~600V	70PPM/°C fro	om rated outp	ut current, fol	ollowing 30 m llowing 30 mir	nutes warm-u	ıp.			
6.Temperature stability									ine, load & ten	-		
7. Warm-up drift									lowing power	on.		
			150V~600V: I	_ess than +/-0	).15% of rated	output currer	nt over 30 min	utes followin	g power on.			
ANALOG PROGRAMMING AND MO	NITORING (ISOLATED	FROM '										
1.Vout voltage programming							d linearity: +/-		_			
2.lout voltage programming (*15)							d linearity: +/-					
3.Vout resistor programming 4.lout resistor programming (*15)									of rated Vout.			
5.Output voltage monitor					able. Accurac		racy and linea	ITILY: +/-0.5%	orrated lout.			
6.Output current monitor (*15)					able. Accurac	,				-		-
			0 34 01 0 10	v, user sereet	.ubic. / iccurac	y. 17 0.570.						
SIGNALS AND CONTROLS (ISOLATI	ED FROM THE OUTPU		In .		. 0 1			. 0(( 0(( )4		201/14 :	C: 1 C	. 10 1
1. Power supply OK #1 signal					· · ·						num Sink Curr	ent: 10mA.
CV/CC signal     LOCAL/REMOTE Analog control									80V, Maximum		cal: 2~30V or o	nen
4. LOCAL/REMOTE Analog control											ximum Sink Cu	
5. ENABLE/DISABLE signal			31 3						30V or open. U			cnc rollin.
6. INTERLOCK (ILC) control						• •			short. Local: 2		. 5	
7. Programmed signals						, ,			rrent 100mA	<u>-</u>	7V zener)	
8. TRIGGER IN / TRIGGER OUT signal	ς.										level input =	= 5V positive
-	-						mum, Min de	lay betwee	n 2 pulses 1n	ns.		-
9. DAISY_IN/SO control signal			-		6V/2~30V or d	•						
10. DAISY_OUT/PS_OK #2 signal			4~5V=OK, 0\	(500ohm im	pedance)=Fai	l						
FUNCTIONS AND FEATURES												
1. Parallel operation			<del></del>				. Refer to instr	uction manu	al.			
2. Series operation						struction man						
3. Daisy chain						, ,	nchronize the		_			
4. Constant power control									nication ports			
5. Output resistance control									ommunicatio		front panel. Programming	
Slew rate control     Arbitrary waveforms			communicat	ion ports or th	he front panel						orts or by the	
<u> </u>	K (LICD LASS		up	.5 .00 3(cp3	I Se stored			, comina	The tric con			Jiic pulici.
PROGRAMMING AND READBAC RS232/485, Optional IEEE(*19)(*	k (USB, LAN, 20) Interfaces)	٧	10	20	30	40	60	80	100	150	300	600
1.Vout programming accuracy (*16)			0.05% of rate	d output volt	age							
2.lout programming accuracy (*15)					-	ated output cu	urrent					
				ed output vo								
5.vout programming resolution				ed output cu								
			0.002% 01 141	ca output cu	Hent							
3.Vout programming resolution     4.lout programming resolution     5.Vout readback accuracy				ed output vol								
4.lout programming resolution		-	0.05% of rate		tage							
4.lout programming resolution 5.Vout readback accuracy			0.05% of rate	ed output vol	tage	0.003%	0.002%	0.002%	0.011%	0.007%	0.004%	0.002%

# **G**ENESYS™ 3.4kW SERIES SPECIFICATIONS

OUTPUT RATING		G	10-340	20-170	30-112	40-85	60-56	80-42	100-34	150-22.5	300-11.5	600-5.6
1.Rated output voltage(*1)		٧	10	20	30	40	60	80	100	150	300	600
2.Rated output current (*2)		A W	340 (*3)	170	112	85	56	42	34	22.5	11.5	5.6
3.Rated output power			3400	3400	3360	3400	3360	3360	3400	3375	3450	3360
1.Input voltage/freq. 3 phase, 3 wire + G	Ground (*4)		3-Phase, 400' 3-Phase, 480'	V models: 342 V models: 342	30 2~265Vac, 47~1 2~460Vac, 47~1 2~528Vac, 47~1 ~265Vac, 47~1	63Hz (Covers 63Hz (Covers	380/400/415\ 380/400/415/	140/460/480V	100 ac)	150	300	600
2. Maximum Input current at 100% load 3-Pha	ase, 200V models: ase, 400V models: ase, 480V models: ase, 200V models:		12.5A @ 200V 6.5A @ 380Va 6.5A @ 380Va 21A @ 200Va	'ac ic ic			200, 200, 230,					
3.Power Factor (Typ)					30Vac, rated output							
4.Efficiency (Typ) (*5) (*22)		%	88	89 @ 200Vac	89.5	90	90	90.5	90.5	90.5	90.5	90.5
5.Inrush current (*6)		A	Less than 50A					1	1	1 200		
CONSTANT VOLTAGE MODE		٧	10	20	30	40	60	80	100	150	300	600
1.Max. Line regulation (*7)			0.01% of rate	d output volt	age			'				,
2.Max. Load regulation (*8)			0.01% of rate	d output volt	age +5mV							
3.Ripple and noise (p-p, 20MHz) (*9)		mV	75	75	75	75	80	80	100	120	200	480
4.Ripple r.m.s. 5Hz~1MHz (*9)		mV	8	10	10	12	12	15	15	20	60	100
5.Temperature coefficient 6.Temperature stability					ut voltage, fol			ıp. ıp. Constant liı	ne load & ten	nn.		
7. Warm-up drift								wing power o		ip.	-	
8.Remote sense compensation/wire (*1	0)	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:	oad (*11)	mS	50	50	80	80	80	100	100	100	100	200
No lo	ad (*12)	mS	450	600	800	900	1100	1300	2100	2000	3000	3000
11.Transient response time		mS	Time for outp	out voltage to	recover withi	n 0.5% of its r	ated output fo	or a load chaning 100V. 2mS, f	ge 10~90% of	frated output	current. Outp	ut set-point:
12.Start up delay		Sec	Less than 6 Se		5 (11811 11113, 10	i illoueis up ti	o and includii	ig 100v. 21113, 1	ioi illoueis ab	ove 100v.		
CONSTANT CURRENT MODE					20	40	- 60	00	100	150	200	600
1.Max. Line regulation (*7)		V	10 0.05% of rate	20 d output curr	30 ent	40	60	80	100	150	300	600
2.Max. Load regulation (*13)				d output curr								
3.Ripple r.m.s. @ rated voltage. 3-Phase	(*14)	mA	≤800	≤450	≤300	≤150	≤100	≤70	≤45	≤30	≤12	≤5
4.Ripple r.m.s. @ rated voltage. 1-Phase		mA	≤1200	≤600	≤300	≤300	≤200	≤100	≤60	≤40	≤12	≤8
5.Temperature coefficient		PPM/°C						inutes warm-u	•			
6.Temperature stability								ıp. Constant lii		nperature.		
7. Warm-up drift			10V~100V mo	odel: Less tha	n +/-0.25% of	rated output	current over 3	0 minutes foll utes following	owing power			
ANALOG PROGRAMMING AND MONIT	ODING (ICOL ATER	CDOM 3			11370 01 14104	output curren		ates ronoving	, power on			
1.Vout voltage programming	ORING (ISOLATEL			V or 0~10V us	ser selectable	Accuracy and	d linearity: +/-	0.15% of rated	l Vout			
2.lout voltage programming (*15)								0.4% of rated				
3.Vout resistor programming								arity: +/-0.5% o				
4.lout resistor programming (*15)			0~100%, 0~5	/10Kohm full	scale, user sel	ectable. Accu	racy and linea	arity: +/-0.5% c	of rated lout.			
5.Output voltage monitor					able. Accuracy							
6.Output current monitor (*15)			0~5V or 0~10	V, user select	able. Accuracy	y: +/-0.5%.						
SIGNALS AND CONTROLS (ISOLATED F	ROM THE OUTPU	T)										
1. Power supply OK #1 signal			,							-	num Sink Curr	ent: 10mA.
2. CV/CC signal								um Voltage: 30				
3. LOCAL/REMOTE Analog control											cal: 2~30V or o	
4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal								on. Local: Off. or short, 2~3			ximum Sink Cu Ioaic.	irent. IVINA.
6. INTERLOCK (ILC) control								e: 0~0.6V or sh			3	
7. Programmed signals			Two open dra	ain programm	nable signals. I	Maximum vol	tage 25V, Max	rimum sink cu	rrent 100mA (	Shunted by 27		
8. TRIGGER IN / TRIGGER OUT signals			Maximum lo	ow level inpu	ut voltage =	0.8V,Minimu	ım high leve	l input voltac	ge = 2.5V, Ma	aximum high	level input =	= 5V positive
9. DAISY_IN/SO control signal					ninimum. 1r, 6V/2~30V or d		mam, Min de	elay between	ı z puises Im	15.		
10. DAISY_OUT/PS_OK #2 signal			,		pedance)=Fail					-		
FUNCTIONS AND FEATURES			,		,							
1. Parallel operation				. 4:14:1		(C) I						
2. Series operation			Possible Unit	O 4 Identical	units in Maste	r/Slave mode	. Refer to instr	uction maniia	II.			
			Possible. Up to Possible. Two		units in Maste ts. Refer to ins			uction manua	11.			
3. Daisy chain			Possible. Two	identical uni	ts. Refer to ins	truction man	ual.	ir turn-on and				
Daisy chain     Constant power control			Possible. Two Power suppli Limits the ou	identical uni es can be con tput power to	ts. Refer to ins nected in Dai: o a proggramr	truction man sy chain to sy ned value. Pro	ual. nchronize the ogramming vi	ir turn-on and a the commur	turn-off. nication ports			
3. Daisy chain			Possible. Two Power suppli Limits the ou Emulates seri	identical uni es can be con tput power to es resistance.	ts. Refer to ins nected in Dai: o a proggramn . Resistance ra	truction man sy chain to sy ned value. Pro nge: 1~1000r	ual. nchronize the ogramming vi mΩ. Programr	ir turn-on and a the commur ning via the co	turn-off. nication ports ommunication	n ports or the	front panel.	
Daisy chain     Constant power control     Output resistance control     Slew rate control			Possible. Two Power suppli Limits the ou Emulates seri Programmab communicati	es can be con tput power to es resistance. le Output rise on ports or th	ts. Refer to ins nected in Dai: o a proggramr . Resistance ra e and Output f ne front panel	truction man sy chain to syn ned value. Pro nge: 1~1000r iall slew rate. F	ual. nchronize the ogramming vi mΩ. Programr Programming	ir turn-on and a the commur ning via the co range: 0.0001	turn-off. nication ports ommunication ~999.9 V/mSe	n ports or the ec. or A/mSec.	front panel. Programming	
Daisy chain     Constant power control     Output resistance control			Possible. Two Power suppli Limits the ou Emulates seri Programmab communicati	es can be con tput power to es resistance. le Output rise on ports or th	ts. Refer to ins nected in Dai: o a proggramr . Resistance ra e and Output f ne front panel	truction man sy chain to syn ned value. Pro nge: 1~1000r iall slew rate. F	ual. nchronize the ogramming vi mΩ. Programr Programming	ir turn-on and a the commur ning via the co range: 0.0001	turn-off. nication ports ommunication ~999.9 V/mSe	n ports or the ec. or A/mSec.	front panel.	
Daisy chain     Constant power control     Output resistance control     Slew rate control	JSB, LAN, Interfaces)	  	Possible. Two Power suppli Limits the ou Emulates seri Programmab communicati	es can be con tput power to es resistance. le Output rise on ports or th	ts. Refer to ins nected in Dai: o a proggramr . Resistance ra e and Output f ne front panel	truction man sy chain to syn ned value. Pro nge: 1~1000r iall slew rate. F	ual. nchronize the ogramming vi mΩ. Programr Programming	ir turn-on and a the commur ning via the co range: 0.0001	turn-off. nication ports ommunication ~999.9 V/mSe	n ports or the ec. or A/mSec.	front panel. Programming	
3. Daisy chain 4. Constant power control 5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms PROGRAMMING AND READBACK (URS232/485, Optional IEEE(*19)(*20) 1. Vout programming accuracy (*16)	ISB, LAN, Interfaces)	V	Possible. Two Power suppli Limits the ou Emulates seri Programmab communicati Profiles of up  10 0.05% of rate	es can be con tput power to es resistance. le Output rise on ports or th to 100 steps	ts. Refer to insinected in Dai: o a proggram Resistance rae and Output for front panel can be stored 30 age	truction man sy chain to syi ned value. Pro nge: 1~1000r iall slew rate. I in 4 memory	ual. nchronize the ogramming vi mΩ. Programm Programming cells. Activatio	ir turn-on and a the commur ming via the co range: 0.0001 on by commar	turn-off. nication ports mmunication ~999.9 V/mSe nd via the com	n ports or the ec. or A/mSec. nmunication p	front panel. Programming orts or by the	front panel.
3. Daisy chain 4. Constant power control 5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms  PROGRAMMING AND READBACK (UR5232/485, Optional IEEE(*19)(*20) 1. Vout programming accuracy (*16) 2. lout programming accuracy (*15)	ISB, LAN, Interfaces)		Possible. Two Power suppli Limits the ou Emulates seri Programmab communicati Profiles of up  10 0.05% of rate 0.1% of actua	identical uni es can be con tput power to es resistance. le Output rise on ports or th to 100 steps  20 d output volt l output curre	ts. Refer to insinected in Dair of a proggram. Resistance rate and Output for front panel can be stored  30  age ent+0.2% of ra	truction man sy chain to syi ned value. Pro nge: 1~1000r iall slew rate. I in 4 memory	ual. nchronize the ogramming vi mΩ. Programm Programming cells. Activatio	ir turn-on and a the commur ming via the co range: 0.0001 on by commar	turn-off. nication ports mmunication ~999.9 V/mSe nd via the com	n ports or the ec. or A/mSec. nmunication p	front panel. Programming orts or by the	front panel.
3. Daisy chain 4. Constant power control 5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms PROGRAMMING AND READBACK (U. RS232/485, Optional IEEE(*19)(*20) 1. Vout programming accuracy (*16) 2. lout programming accuracy (*15) 3. Vout programming resolution	ISB, LAN, Interfaces)	V	Possible. Two Power suppli Limits the ou Emulates seri Programmab communicati Profiles of up  10  0.05% of rate 0.1% of actua	identical uni es can be con tput power to es resistance. le Output rise on ports or th to 100 steps  20 d output volt l output curre ed output vole	ts. Refer to insinected in Dai: a proggramr. Resistance rae and Output f ne front panel can be stored  30 age ent+0.2% of ra ltage	truction man sy chain to syi ned value. Pro nge: 1~1000r iall slew rate. I in 4 memory	ual. nchronize the ogramming vi mΩ. Programm Programming cells. Activatio	ir turn-on and a the commur ming via the co range: 0.0001 on by commar	turn-off. nication ports mmunication ~999.9 V/mSe nd via the com	n ports or the ec. or A/mSec. nmunication p	front panel. Programming orts or by the	front panel.
3. Daisy chain 4. Constant power control 5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms  PROGRAMMING AND READBACK (UR5232/485, Optional IEEE(*19)(*20) 1. Vout programming accuracy (*16) 2. lout programming accuracy (*15) 3. Vout programming resolution 4. lout programming resolution	ISB, LAN, Interfaces)		Possible. Two Power suppli Limits the ou Emulates seri Programmab communicati Profiles of up  10  0.05% of rate 0.1% of actua 0.002% of rat	identical uni es can be con tput power to es resistance. le Output rise on ports or th to 100 steps  20 d output volt l output curre ed output vole ed output cure	ts. Refer to insinected in Dai: a proggramr. Resistance rae and Output f ne front panel can be stored  30 age ent+0.2% of rae ltage	truction man sy chain to syi ned value. Pro nge: 1~1000r iall slew rate. I in 4 memory	ual. nchronize the ogramming vi mΩ. Programm Programming cells. Activatio	ir turn-on and a the commur ming via the co range: 0.0001 on by commar	turn-off. nication ports mmunication ~999.9 V/mSe nd via the com	n ports or the ec. or A/mSec. nmunication p	front panel. Programming orts or by the	front panel.
3. Daisy chain 4. Constant power control 5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms  PROGRAMMING AND READBACK (UR5232/485, Optional IEEE(*19)(*20) 1. Vout programming accuracy (*16) 2. lout programming resolution 4. lout programming resolution 5. Vout readback accuracy	ISB, LAN, Interfaces)	V	Possible. Two Power suppli Limits the ou Emulates seri Programmab communicati Profiles of up  10 0.05% of rate 0.002% of rat 0.002% of rat 0.005% of rate	eidentical uni es can be con tput power to es resistance. ele Output rise on ports or th to 100 steps  20 d output volt I output curre ed output vole d output vole d output vole ed output cur	ts. Refer to inside the control of t	truction man sy chain to syi ned value. Pro nge: 1~1000r iall slew rate. I in 4 memory	ual. nchronize the ogramming vi mΩ. Programm Programming cells. Activatio	ir turn-on and a the commur ming via the co range: 0.0001 on by commar	turn-off. nication ports mmunication ~999.9 V/mSe nd via the com	n ports or the ec. or A/mSec. nmunication p	front panel. Programming orts or by the	front panel.
3. Daisy chain 4. Constant power control 5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms  PROGRAMMING AND READBACK (UR5232/485, Optional IEEE(*19)(*20) 1. Vout programming accuracy (*16) 2. lout programming accuracy (*15) 3. Vout programming resolution 4. lout programming resolution	Interfaces)		Possible. Two Power suppli Limits the ou Emulates seri Programmab communicati Profiles of up  10 0.05% of rate 0.002% of rat 0.002% of rat 0.005% of rate	identical uni es can be con tput power to es resistance. le Output rise on ports or th to 100 steps  20 d output volt l output curre ed output vole ed output cure	ts. Refer to inside the control of t	truction man sy chain to syi ned value. Pro nge: 1~1000r iall slew rate. I in 4 memory	ual. nchronize the ogramming vi mΩ. Programm Programming cells. Activatio	ir turn-on and a the commur ming via the co range: 0.0001 on by commar	turn-off. nication ports mmunication ~999.9 V/mSe nd via the com	n ports or the ec. or A/mSec. nmunication p	front panel. Programming orts or by the	front panel.

# **G**ENESYS<sup>™</sup> 5kW SERIES SPECIFICATIONS

OUTPUT RATING		G	10-500	20-250	30-170	40-125	60-85	80-65	100-50	150-34	200-25	300-17	600-8.5
1.Rated output voltage(*1)		V	10	20 230	30	40	60	80	100 30	150	200	300	600
2.Rated output current (*2)		A	500 (*3)	250	170	125	85	65	50	34	25	17	8.5
3.Rated output power		W	5000	5000	5100	5000	5100	5200	5000	5100	5000	5100	5100
INPUT CHARACTERISTICS		V	10	20	30	40	60	80	100	150	200	300	600
						47~63Hz (Co							
1.Input voltage/freq. 3 phase, 3 w			3-Phase, 48	0V models: 3		47~63Hz (Co 47~63Hz (Co			0/480Vac)				
2. Maximum Input current at	3-Phase, 200V models:		17.5A @ 200										
100% load	3-Phase, 400V models:		9.2A @ 380\										
3.Power Factor (Typ)	3-Phase, 480V models:		9.2A @ 380\		d output po								
4.Efficiency (Typ) (*5) (*22)		%	89 (*21)	91	91	91	91	91	91	91	91	92	92
5.Inrush current (*6)	_	A	Less than 50		21	21			) )	21		72	72
										450			100
CONSTANT VOLTAGE MODE		V	10	20	30	40	60	80	100	150	200	300	600
1.Max. Line regulation (*7)				ed output vo									
2.Max. Load regulation (*8)			0.01% of rat	ed output vo	oltage +5mV								
3.Ripple and noise (p-p, 20MHz)	(*9)	mV	75	75	75	75	75	80	90	120	200	200	480
4.Ripple r.m.s. 5Hz~1MHz (*9)		mV	8	10	12	12	12	15	15	20	60	60	100
5.Temperature coefficient		PPM/°C	50PPM/°C fi	om rated ou	utput voltage	e, following 3	0 minutes w	arm-up.					
6.Temperature stability			0.01% of rat	ed Vout ove	r 8hrs interva	al following 3	0 minutes w	arm-up. Con	stant line, lo	ad & temp.			
7. Warm-up drift			Less than 0.	05% of rated	d output volt	age+2mV ov	er 30 minute	s following p	ower on.				
8.Remote sense compensation/w	rire (*10)	٧	2	2	5	5	5	5	5	5	5	5	5
9.Up-prog. Response time (*11)		mS	30	30	30	30	50	50	50	50	50	50	100
	Full load (*11)	mS	50	50	80	80	80	100	100	100	100	100	200
10.Down-prog.response time:	No load (*12)	mS	300	600	800	900	1000	1200	1900	2000	2500	3000	3000
11.Transient response time	140 load ( 12)	mS	Time for ou	tput voltage	to recover v	vithin 0.5% o	f its rated ou	tput for a loa	d change 10	~90% of rate	ed output cu		
12.Start up delay		Sec	10~100%, L Less than 5 5		ess than 1m!	S, for models	up to and in	cluding 100\	/. 2mS, for m	odels above	100V.		
CONSTANT CURRENT MODE		V	10	20	30	40	60	80	100	150	200	300	600
1.Max. Line regulation (*7)			0.05% of rat	ed output ci	urrent.								
2.Max. Load regulation (*13)			0.08% of rat	ed output c	urrent.								
3.Ripple r.m.s. @ rated voltage. B.	W 5Hz~1MHz (*14)	mA	≤1200	≤600	≤300	≤150	≤100	≤70	≤45	≤45	≤45	≤15	≤8
5.Temperature coefficient		PPM/°C	10V~100V			output curre							
6.Temperature stability						utput currer al following 3				ad & temper	ature		
						6 of rated out					ature.		
7. Warm-up drift			150V~600V:	Less than +,	/-0.15% of ra	ted output c	urrent over 3	0 minutes fo	llowing pow	er on.			
ANALOG PROGRAMMING AND N	MONITORING (ISOI ATED	FROM T	HE OUTPUT	)									
1.Vout voltage programming					user selecta	ble. Accurac	v and lineari	tv: +/-0 15%	of rated Vous				
			0 10070,0	3 4 01 0 104									
12 Jour voltage programming (*15	3)		0~100% 0~	5V or 0~10V	user selecta		-	-	f rated lout				
2.lout voltage programming (*15	i)					ble. Accurac	y and lineari	ty: +/-0.4% o					
3.Vout resistor programming			0~100%, 0~	5/10Kohm f	ull scale, use	able. Accurac r selectable.	y and lineari Accuracy and	ty: +/-0.4% o d linearity: +/	/-0.5% of rate	ed Vout.			
3. Vout resistor programming 4. lout resistor programming (*15			0~100%, 0~ 0~100%, 0~	5/10Kohm fi 5/10Kohm fi	ull scale, use ull scale, use	able. Accurac r selectable. r selectable.	y and lineari Accuracy and Accuracy and	ty: +/-0.4% o d linearity: +/ d linearity: +/	/-0.5% of rate	ed Vout.			
3.Vout resistor programming     4.lout resistor programming (*15     5.Output voltage monitor			0~100%, 0~ 0~100%, 0~ 0~5V or 0~1	5/10Kohm fu 5/10Kohm fu 0V, user sele	ull scale, use ull scale, use ectable. Accu	able. Accurac r selectable. r selectable. ıracy: +/-0.59	y and lineari Accuracy and Accuracy and 6 of rated Vo	ty: +/-0.4% o d linearity: +/ d linearity: +/ ut.	/-0.5% of rate	ed Vout.			
3. Vout resistor programming 4. lout resistor programming (*15			0~100%, 0~ 0~100%, 0~ 0~5V or 0~1	5/10Kohm fu 5/10Kohm fu 0V, user sele	ull scale, use ull scale, use ectable. Accu	able. Accurac r selectable. r selectable.	y and lineari Accuracy and Accuracy and 6 of rated Vo	ty: +/-0.4% o d linearity: +/ d linearity: +/ ut.	/-0.5% of rate	ed Vout.			
3.Vout resistor programming     4.lout resistor programming (*15     5.Output voltage monitor	)		0~100%, 0~ 0~100%, 0~ 0~5V or 0~1	5/10Kohm fu 5/10Kohm fu 0V, user sele	ull scale, use ull scale, use ectable. Accu	able. Accurac r selectable. r selectable. ıracy: +/-0.59	y and lineari Accuracy and Accuracy and 6 of rated Vo	ty: +/-0.4% o d linearity: +/ d linearity: +/ ut.	/-0.5% of rate	ed Vout.			
3.Vout resistor programming 4.lout resistor programming (*15 5.Output voltage monitor 6.Output current monitor (*15)	)		0~100%, 0~ 0~100%, 0~ 0~5V or 0~1 0~5V or 0~1	5/10Kohm fu 5/10Kohm fu 0V, user sele 0V, user sele	ull scale, use ull scale, use ectable. Accu ectable. Accu	able. Accurac r selectable. r selectable. Iracy: +/-0.59 Iracy: +/-0.59	y and lineari Accuracy and Accuracy and 6 of rated Vo 6 of rated lou	ty: +/-0.4% od d linearity: +/ d linearity: +/ ut. ut.	7-0.5% of rate 7-0.5% of rate	ed Vout. ed lout.	30V, Maximu	m Sink Curre	ent: 10mA.
3.Vout resistor programming 4.lout resistor programming (*15 5.Output voltage monitor 6.Output current monitor (*15) SIGNALS AND CONTROLS (ISOLA	)	  	0~100%, 0~ 0~100%, 0~ 0~5V or 0~1 0~5V or 0~1	5/10Kohm fo 5/10Kohm fo 0V, user sele 0V, user sele ly output mo	ull scale, use ull scale, use ectable. Accu ectable. Accu onitor. Open	able. Accurac r selectable. r selectable. iracy: +/-0.59 iracy: +/-0.59	y and lineari Accuracy and Accuracy and 6 of rated Vo 6 of rated lou utput On: On	ty: +/-0.4% odd linearity: +/ d linearity: +/ ut. ut.	7-0.5% of rate 7-0.5% of rate 8: Off. Maximu	ed Vout. ed lout. um Voltage:	30V, Maximul c Current: 10r		ent: 10mA.
3.Vout resistor programming 4.lout resistor programming (*15 5.Output voltage monitor 6.Output current monitor (*15)  SIGNALS AND CONTROLS (ISOL/ 1. Power supply OK #1 signal	) ATED FROM THE OUTPUT	   r)	0~100%, 0~ 0~100%, 0~ 0~5V or 0~1 0~5V or 0~1 Power supp CV/CC Moni	5/10Kohm fi 5/10Kohm fi 0V, user sele 0V, user sele ly output me tor. Open co	ull scale, use ull scale, use ectable. Accu ectable. Accu onitor. Open ollector. CC m	able. Accurac r selectable. r selectable. uracy: +/-0.5% uracy: +/-0.5% collector. Ou	y and lineari Accuracy and Accuracy and 6 of rated Vo 6 of rated lou utput On: On mode: Off. N	ty: +/-0.4% o d linearity: +/ d linearity: +/ ut. ut Output Off:	7-0.5% of rate 7-0.5% of rate 1-0.5% of rate	ed Vout. ed lout. um Voltage: : aximum Sinl		mA.	
3.Vout resistor programming 4.lout resistor programming (*15 5.Output voltage monitor 6.Output current monitor (*15)  SIGNALS AND CONTROLS (ISOL/ 1. Power supply OK #1 signal 2. CV/CC signal	) ATED FROM THE OUTPUT	   	0~100%, 0~ 0~100%, 0~ 0~5V or 0~1 0~5V or 0~1 Power supp CV/CC Moni Enable/Disa	5/10Kohm fu 5/10Kohm fu 0V, user sele 0V, user sele ly output mo tor. Open co ible analog p	ull scale, use ull scale, use ectable. Accu ectable. Accu onitor. Open ollector. CC m	able. Accuracy r selectable. r selectable. iracy: +/-0.59 iracy: +/-0.59 collector. On node: On. CV g control by	y and lineari Accuracy and Accuracy and 6 of rated Vo 6 of rated lou utput On: On mode: Off. Melectrical sig	ty: +/-0.4% o d linearity: +/ d linearity: +/ ut.  t.  Output Off. faximum Vol nal or dry co	7-0.5% of rate 7-0.5% of rate 1-0.5% of Maximu 1-0.5% off. Maximu 1-0.5% off. Maximu 1-0.5% of rate	ed Vout. ed lout. um Voltage: aximum Sink	k Current: 10r	nA. 2∼30V or op	oen.
3.Vout resistor programming 4.lout resistor programming (*15 5.Output voltage monitor 6.Output current monitor (*15)  SIGNALS AND CONTROLS (ISOL/ 1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog contro	) ATED FROM THE OUTPUT	   r) 	0~100%, 0~ 0~100%, 0~ 0~5V or 0~1 0~5V or 0~1 Power supp CV/CC Moni Enable/Disa analog prog	5/10Kohm fu 5/10Kohm fu 0V, user sele 0V, user sele ly output mo tor. Open co ible analog p ramming co	ull scale, use ull scale, use ectable. Accu ectable. Accu onitor. Open ollector. CC m programmin ntrol monito	able. Accuracy relectable. relectable. relectable. relectable. racy: +/-0.5% racy: +/-0.5% collector. Or node: On. CV g control by r signal. Oper	y and lineari Accuracy and Accuracy and 6 of rated Vo 6 of rated lou utput On: On mode: Off. Melectrical sig o collector. Re	ty: +/-0.4% od linearity: +/ d linearity: +/ d linearity: +/ ut. . Output Off. Maximum Vol nal or dry co	7-0.5% of rate 7-0.5% of rate 1-0.5%	ed Vout. ed lout.  um Voltage: aximum Sink te: 0~0.6V or imum Voltag	Current: 10r short. Local:	mA. 2~30V or op num Sink Cui	oen.
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3.Vout resistor programming 4.lout resistor programming (*15 5.Output voltage monitor 6.Output current monitor (*15)  SIGNALS AND CONTROLS (ISOL/ 1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog contro 4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal 6. INTERLOCK (ILC) control	) ATED FROM THE OUTPUT	   r)	0~100%, 0~ 0~100%, 0~ 0~5V or 0~1 0~5V or 0~1 CV/CC Moni Enable/Disa analog prog Enable/Disa Enable/Disa	5/10Kohm fit 5/10Kohm fit 0V, user sele 0V, user sele ly output me tor. Open coable analog pramming coable PS outpuble PS outp	ull scale, use ull scale, use ectable. Accu ectable. Accu onitor. Open ollector. CC m orogrammin ntrol monito ut by electric ut by electric	able. Accuracy selectable. In selectable selectable selectable selectable selectable. In selectable sele	y and lineari Accuracy and Accuracy and 6 of rated Vo 6 of rated lou atput On: On mode: Off. Melectrical sig o collector. Re lry contact. C	ty: +/-0.4% od linearity: +/- d linearity: +/- ut.  . Output Off- flaximum Vol nal or dry co emote: On. Lc 0~0.6V or sho	7-0.5% of rate 7-0.5% of rate 7-0.5% of rate 8-0.5% of rate 10-0.5% of rate 10	ed Vout. ed lout.  um Voltage: : aximum Sink te: 0~0.6V or imum Voltag open. User s Local: 2~30V	c Current: 10r short. Local: e: 30V, Maxim selectable loc or open.	mA. 2~30V or op num Sink Cui gic.	oen.
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# GENESYS™ 2.7kW/3.4kW/5kW SERIES SPECIFICATIONS

PROTECTIVE FUNCTIONS		٧	10	20	30	40	60	80	100	150	200	300	600
1. Foldback protection			Output shu User preset	t-down whe able. Reset b	n power supp by AC input re	oly changes r cycle in auto	mode from C start mode, l	V or Power L by Power Sw	imit to CC mo itch, by OUTI	ode or from ( PUT button,	CC or Power by rear pane	Limit to CV me I or by comm	ode. unication.
2.Over-voltage protection (OVP)			Output shu	t-down. Rese	et by AC inpu	t recycle in a	utostart mod	le, by OUTPl	JT button, by	rear panel c	r by commu	nication.	
<ol><li>Over -voltage programming rar</li></ol>	nge	V	0.5~12	1~24	2~36	2~44.1	5~66.15	5~88.2	5~110.25	5~165.37	5~220.5	5~330.75	5~661.5
4. Over-voltage programming ac			+/-1% of rat										
5.Output under voltage limit (UV	L)							nalog progra	ımming. Pres	et by front p	anel or com	munication p	ort.
6.Over temperature protection					Auto recover		rt mode.						
7. Output under voltage limit (UV	L)		Prevents ad	justment of	Vout below li	mit.							
8. Output under voltage protecti	on (UVP)				Vout below li by OUTPUT I					dition. Rese	t by AC input	recycle in au	tostart
FRONT PANEL													
1.Control functions			Multiple op										
					manual adjus	t							
			OVP/UVL/U										
					VP, UVL,UVP,								
					ons - Selectio	n of LAN,IEE	RS232,RS48	5,USB or Op	tional comm	unication int	terface.		
			Output ON/										
					ons - Selectio								
					ns - Selection					rogramming			
2.0:					ns - Selection				OV.			_	
2.Display					0.05% of rate								
2 F					0.2% of rated				IFICUDATION	L CVCTEM CE	CUIENCED		
3.Front Panel Buttons Indications					REVIEW, FINE,							_	
4. Front Panel Display Indications			Voltage, Cu (communic	rrent, Power ation), RS/US	, CV, CC, CP, E B/LAN/IEEE o	xternal Volta communicati	ige, External ion, Trigger, L	Current, Add .oad/Store C	dress, LFP, Au ell.	tostart, Safe	tstart, Foldb	ack V/I, Remo	te
ENVIRONMENTAL CONDITIONS			_										
1.Operating temperature			0~50°C, 100	% load.									
2.Storage temperature			-30~85°C										
3.Operating humidity		%	20~90% RH	(no conden	sation).								
4.Storage humidity		%	10~95% RH	(no conden	sation).								
5.Altitude (*17)						urrent derat	ing 2%/100m	or Ta derati	ng 1°C/100m	above 2000	m Non oper	ating: 40000f1	(12000m)
MECHANICAL			1-4		,,,-								(
1.Cooling		T	Forced six c	a a lin a bu int	ternal fans. Ai	ir flaur diract	ion, from Fro	nt nanal ta n	Saurar aummbu				
,						ir flow direct	ion: irom Fro			rear			
2.Weight		kg	2.7kW/3.4k\					5kW - Less 1	than 7.5kg.				
3.Dimensions (WxHxD)		mm			1.5 (Withou 3.5 (Includir				fer to Outlir	ne drawing)	).		
4.Vibration			MIL-810G, n	nethod 514.6	, Procedure I	, test conditi	on Annex C -	2.1.3.1					
5.Shock			Less than 20	G, half sine,	11mSec. Unit	t is unpacked	i.						
SAFETY/EMC													
1.Applicable standards:	Safety		UL60950-1.	CSA22.2 No.	.60950-1, IEC6	50950-1. EN6	0950-1.						
1.1. Interface classification			Vout ≤40V N	Models: Out	out, J1,J2,J3,J ls: Output, J8	4,J5,J6,J7,J8	(sense) and ,J	9 (communi	cation option	ns) are SELV.	on ontions):	ara SELV	
					out - Output	-				-	on options)	AI C JLLV	
1.2 Withstand voltage			60V≤Vout≤	100V Mode		utput: 4242\	/DC 1min, Ir	nput - SELV			it - SELV: 85	60VDC 1min,	
					,				: 4242VDC	1min, Outpu	ıt - SELV: 15	600VDC 1mir	1,
1.3 Insulation resistance	1			t 25°C, 70%l									
2.Conducted emmision					al environme	nt. Annex H t	able H.1 , FCC	Part 15-A. \	/CCI-A.				
3.Radiated emission					l environme					Δ			
4. EMC compliance	EMC(*18)				04-3 Industria			i i i f, i CC Fai	. 13-A, VCCI-				
4. LIVIC COMPHANCE	LIVIC("10)		Inccording t	U ILC/ENOIZ	u4-5 muustri	ai elivironme	iii						

Unless otherwise noted, specifications are warranted over the ambient temperature range of  $0^\circ$  to  $50^\circ$  C.

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

  NOTES:

  \* 1: Minimum voltage is guaranteed to maximum 0.1% of rated output voltage.
  \* 2: Minimum current is guaranteed to maximum 0.2% of rated output current.
  \* 3: Derate 5A/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
  \* 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 0.2mSec.
  \* 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 JETIA RC-913TC (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.
  \* 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.
  \* 13: For load voltage change, equal to the unit voltage rating, constant input voltage.
  \* 14: For 10V model, the ripple is measured at 20~100% of rated output voltage and rated output current. For other models, the ripple is measured at 10~100% of rated output voltage and rated output current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift.
  \* 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 40°C.
  \* 21: For 10V model only: Max. output curr

# **G**ENESYS<sup>™</sup> **GSP10kW SERIES SPECIFICATIONS**

OUTPUT RATING		GSP	10-1000	20-500	30-340	40-250	60-170	80-130	100-100	150-68	200-50	300-34	600-17
1.Rated output voltage(*1)		V	10	20	30	40	60	80	100	150	200	300	600
2.Rated output current (*2)		Α	1000 (*3)	500	340	250	170	130	100	68	50	34	17
3.Rated output power		kW	10	10	10.2	10	10.2	10.4	10	10.2	10	10.2	10.2
INPUT CHARACTERISTICS		٧	10	20	30	40	60	80	100	150	200	300	600
			3-Phase, 20	0V models: 1	70~265Vac, 4	17~63Hz (Cov	vers 200/230\	/ac)					
1.Input voltage/freq. 3 phase, 3 w	vire + Ground (*4)						vers 380/400						
	I				42~528Vac, 4	47~63Hz (Co	vers 380/400/	415/440/460	)/480Vac)				
2. Maximum Input current at	3-Phase, 200V models:	-	35A @ 200V										
100% load	3-Phase, 400V models:		18.4A @ 380										
3.Power Factor (Typ)	3-Phase, 480V models:		18.4A @ 380		d output pow								
4.Efficiency (Typ) (*5) (*22)		%	89 (*21)	91	91	91	91	91	91	91	91	92	92
5.Inrush current (*6)		Α	Less than 10	00A									
6.AC line phase imbalance		%	< 5%										
CONSTANT VOLTAGE MODE		٧	10	20	30	40	60	80	100	150	200	300	600
1.Max. Line regulation (*7)				ed output vo	oltage								
2.Max. Load regulation (*8)			0.01% of rat	ed output vo	oltage +5mV								
3.Ripple and noise (p-p, 20MHz)	(*9)	mV	75	75	75	75	75	80	90	120	200	200	480
4.Ripple r.m.s. 5Hz~1MHz (*9)		mV	8	10	12	12	12	15	15	20	45	60	100
5.Temperature coefficient							0 minutes wa						
6.Temperature stability									stant line, loa	d & temp.			
7. Warm-up drift 8.Remote sense compensation/w	rivo (*10)	 V	Less than 0.	2	output voita	age+2mv ove	er 30 minutes 5	5 tollowing pe	ower on.	5	5	5	5
9.Up-prog. Response time (*11)	vire (~10)	mS	30	30	30	30	50	50	50	50	50	50	100
	Full load (*11)	mS	50	50	80	80	80	100	100	100	100	100	200
10.Down-prog.response time:	No load (*12)	mS	300	600	800	900	1000	1200	1900	2000	2500	3000	3000
11.Transient response time		mS	Time for ou	tput voltage	to recover wi	rithin 0.5% of	fits rated out	put for a load	d change 10~	90% of rated	d output curr		
					ess than 1mS	, for models	up to and inc	luding 100V	. 2mS, for mo	dels above 1	00V.		
12.Start up delay		Sec	Less than 7	sec									
CONSTANT CURRENT MODE													
1.Max. Line regulation (*7)			0.05% of rat	ted output cu	ırrent.								
2.Max. Load regulation (*13)				ted output cu									т
3.Ripple r.m.s. @ 10% rated voltage		mA	1500	1200	600	300	150	100	70	45	45	15	10
4.Ripple r.m.s. @ 100% rated voltage	e. B.W 5Hz~1MHz. (TA25°C)	mA	1200	700	300	150	75	50	35	23	23	7.5	6
5.Temperature coefficient		PPM/°C	10V~100V 150V~600V				nt, following t, following 3						
6.Temperature stability									stant line, loa	d & tempera	ture.		
								<u> </u>	tes following				
7. Warm-up drift			150V~600V	: Less than +/	/-0.15% of rat	ed output cu	urrent over 30	minutes fol	llowing powe	r on.			
ANALOG PROGRAMMING AND M	MONITORING (ISOLATED	FROM T	HE OUTPUT	)									
1.Vout voltage programming	(				, user selecta	ble. Accurac	y and linearity	y: +/-0.15% c	of rated Vout.				
2.lout voltage programming (*15	5)						y and linearity	,				-	
3.Vout resistor programming			0~100%, 0~	5/10Kohm fu	ıll scale, user	selectable. A	Accuracy and	linearity: +/-	-0.5% of rated	d Vout.			
4.lout resistor programming (*15	5)					_			-0.5% of rated	d lout.			
5.Output voltage monitor							6. Of rated Vo						
6.Output current monitor (*15)			0~5V or 0~1	0V, user sele	ctable. Accur	racy: +/-0.5%	6. Of rated lou	ıt.					
SIGNALS AND CONTROLS (ISOLA	ATED FROM THE OUTPUT	Γ)											
1. Power supply OK #1 signal									Off. Maximur				t: 10mA.
2. CV/CC signal	-					-			tage: 30V, Ma				
3. LOCAL/REMOTE Analog contro	ol .								ntact. Remote				
4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal									ocal: Off. Maxi ort, 2~30V or o				ent: IUmA.
6. INTERLOCK (ILC) control									6V or short. Lo			٠.	
7. Programmed signals									sink current 1			ener)	
8. TRIGGER IN / TRIGGER OUT sign	nale								voltage = 2. tween 2 pul				V positive
	1013							in delay be	tween 2 pul	ses 1ms.			-
9. DAISY_IN/SO control signal			-		0.6V/2~30V c		t.						
10. DAISY_OUT/PS_OK #2 signal			4~5V=OK, 0	/V (500ohm ii	mpedance)=	Fail							
FUNCTIONS AND FEATURES													
1. Parallel operation					For more po	wer please co	onsult with Fa	actory.					
2. Series operation			Consult witl			Deier I :		- 44 - 1 - 1					
3. Daisy chain									on and turn-o		- 6		
Constant power control     Output resistance control									ommunication a the commu				
									0.0001~999.9				a the
6. Slew rate control			communica	ition ports or	r the front pa	inel.							
7. Arbitrary waveforms			Profiles of u	p to 100 step	os can be stor	red in 4 mem	ory cells. Act	ivation by co	ommand via t	he commun	ication ports	or by the fro	nt panel.
PROGRAMMING AND READBAC		٧	10	20	30	40	60	80	100	150	200	300	600
RS232/485, Optional IEEE (*19)(													
1.Vout programming accuracy (*1 2.lout programming accuracy (**)				ted output vo ed output cur									
3.Vout programming resolution	,			ated output v									
4.lout programming resolution				ated output o									
5.Vout readback accuracy				ted output v									
6.lout readback accuracy (*15)			(										
onoutreadbackaccaracy ( 15)			0.2% of rate	ea output cui	rrent				-				-
7.Vout readback resolution (of ra 8.lout readback resolution (of rat		% %	0.2% of rate 0.011% 0.012%	0.006% 0.003%	0.004% 0.004%	0.003%	0.002%	0.002%	0.011%	0.007%	0.005%	0.004%	0.002%

# **G**ENESYS<sup>™</sup> **GSP15kW SERIES SPECIFICATIONS**

OUTPUT RATING		GSP	10-1500	20-750	30-510	40-375	60-255	80-195	100-150	150-102	200-75	300-51	600-25.5
1.Rated output voltage(*1) 2.Rated output current (*2)		V A	10 1500 (*3)	20 750	30 510	40 375	60 255	80 195	100 150	150 102	200 75	300 51	25.5
3.Rated output power		kW	1500 (*3)	15	15.3	15	15.3	15.6	150	15.3	15	15.3	15.3
INPUT CHARACTERISTICS		V	10	20	30	40	60	80	100	150	200	300	600
1.Input voltage/freq. 3 phase, 3 wire	e + Ground (*4)		3-Phase, 40	0V models: 3	170~265Vac, 4 142~460Vac, 4 142~528Vac, 4	47~63Hz (Co	vers 380/400	)/415Vac)	)/480Vac)				
2. Maximum Input current at	3-Phase, 200V models: 3-Phase, 400V models: 3-Phase, 480V models:		52.5A @ 200 27.6A @ 380 27.6A @ 380	)Vac									
3.Power Factor (Typ)					d output pov					1			
4.Efficiency (Typ) (*5) (*22) 5.Inrush current (*6)		% A	89 (*21) Less than 1	90	91	91	91	91	91	91	91	92	92
6.AC line phase imbalance		%	< 5%	JUN	-								
CONSTANT VOLTAGE MODE		V	10	20	30	40	60	80	100	150	200	300	600
1.Max. Line regulation (*7)			0.01% of rat	ed output vo	oltage								
2.Max. Load regulation (*8)				ed output vo						,			
3.Ripple and noise (p-p, 20MHz) (*9	9)	mV	75	75	75	75	75	80	90	120	200	200	480
4.Ripple r.m.s. 5Hz~1MHz (*9)		mV	8	10	12	12	12	15	15	20	45	60	100
5.Temperature coefficient		PPM/°C			tput voltage					1 0 +			
6.Temperature stability 7. Warm-up drift					r 8hrs interva I output volta		-			ad & temp.			
8.Remote sense compensation/wir	o (*10)	V	2	2	5	5	5	5 Tollowing p	5	5	5	5	5
9.Up-prog. Response time (*11)	e ( 10)	mS	30	30	30	30	50	50	50	50	50	50	100
	Full load (*11)	mS	50	50	80	80	80	100	100	100	100	100	200
10.Down-prog.response time:	No load (*12)	mS	300	600	800	900	1000	1200	1900	2000	2500	3000	3000
11.Transient response time		mS	Time for ou	tput voltage	to recover w	ithin 0.5% of	its rated out	put for a load	d change 10	~90% of rate	d output cur	rent. Output	set-point:
12Start up delay		Sec	Less than 7			7101111000015	up to una me		. 2.113, 101 1110	Jucis above .			
13.Hold-up time													
CONSTANT CURRENT MODE		V	10	20	30	40	60	80	100	150	200	300	600
1.Max. Line regulation (*7)				ted output ci		40	00	60	100	130	200	300	000
2.Max. Load regulation (*13)				ted output c									
3.Ripple r.m.s. @ 10% rated voltage	B.W 5Hz~1MHz. (*14)	mA	2000	1200	600	300	180	100	70	45	45	15	10
4.Ripple r.m.s. @ 100% rated voltage. E		mA	1200	700	300	150	90	60	35	23	23	7.5	6
5.Temperature coefficient		PPM/°C	10V~100V		C from rated of								
6.Temperature stability										ad & tempera	ture.		
7. Warm-up drift					han +/-0.25% /-0.15% of rat								
ANALOG PROGRAMMING AND MO	ONITORING (ISOI ATED	FROMT											
1.Vout voltage programming	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				, user selecta	ble. Accuracy	and linearit	v: +/-0.15% c	of rated Vout				
2.lout voltage programming (*15)					, user selecta								
3.Vout resistor programming			0~100%, 0~	5/10Kohm fi	ull scale, user	selectable. A	Accuracy and	linearity: +/-	-0.5% of rate	d Vout.			
4.lout resistor programming (*15)			0~100%, 0~	-5/10Kohm fi	ull scale, user	selectable. A	Accuracy and	linearity: +/-	-0.5% of rate	d lout.			
5.Output voltage monitor (*23)					ectable. Accu								
6.Output current monitor (*15) (*23	3)		0~5V or 0~	10V, user sele	ectable. Accu	racy: +/-0.5%	o. of rated lou	ıt.					
SIGNALS AND CONTROLS (ISOLAT	ED FROM THE OUTPU	T)											
1. Power supply OK signal			Power supp	ly output me	onitor. Open	collector. Ou	tput On: On.	Output Off:	Off. Maximu	m Voltage: 30	OV, Maximur	n Sink Currer	nt: 10mA.
2. CV/CC signal										aximum Sink			
3. LOCAL/REMOTE Analog control										e: 0~0.6V or s			
4. LOCAL/REMOTE Analog signal										imum Voltag			rent: 10mA.
5. ENABLE/DISABLE Signal 6. INTERLOCK (ILC) control										open. User se .ocal: 2~30V o		JIC.	
7. Programmed signals										100mA (Shun		rener)	
8. TRIGGER IN / TRIGGER OUT signal	ls		Maximum I	ow level inpu	ut voltage = 0	).8V,Minimun	n high level i	nput voltage		imum high le			dge trigger:
FUNCTIONS AND FEATURES			iw=10us m	ınımum. Ir,Tf	f=1us Maximu	un, Min delay	y petween 2	puises ims.					
1. Parallel operation			Two identic	al GSP units	For more po	wer nlease co	onsult with F	actory					
2. Series operation			Consult wit		i oi more po	vici piease C	onsuit WILLIE	actory.					
3. Daisy chain					onnected in	Daisy chain t	o synchroniz	e their turn-	on and turn-	off			
4. Constant power control										on ports or th	e front pane	el.	
5. Output resistance control										inication por			
6. Slew rate control							ate. Program	ming range:	0.0001~999.	9 V/mSec. or	A/mSec. Pro	gramming v	ia the
7. Arbitrary waveforms					r the front pa os can be sto		ory cells. Act	tivation by co	ommand via	the commun	ication port	s or by the fr	ont panel.
PROGRAMMING AND READBACK	TISR I AN												
RS232/485, Optional IEEE (*19)(*2	20) Interfaces)	V	10	20	30	40	60	80	100	150	200	300	600
1.Vout programming accuracy (*16)			0.05% of ra	ted output v	oltage								
2.lout programming accuracy (*15)			0.3% of rate	ed output cu	rrent								
3.Vout programming resolution			0.002% of r	ated output	voltage								
4.lout programming resolution	·		0.002% of r	ated output	current								
5.Vout readback accuracy			0.050/ 6	tod output v	oltago								· · · · ·
			0.05% of ra										
6.lout readback accuracy (*15)			0.2% of rate	d output cu	rrent								
6.lout readback accuracy (*15) 7.Vout readback resolution (of rate 8.lout readback resolution (of rate)						0.003%	0.002%	0.002%	0.011%	0.007%	0.005%	0.004%	0.002%

# GENESYS™ GSP10kW/15kW SERIES SPECIFICATIONS

									1				
PROTECTIVE FUNCTIONS		V	10	20	30	40	60	80	100	150	200	300	600
1.Foldback protection			Output shu User preset	t-down whe able. Reset b	n power supp y AC input re	oly changes r cycle in auto	node from C' start mode, l	V or Power L by Power Sw	imit to CC m	node or from FPUT button,	CC or Power by rear pane	Limit to CV m el or by comm	ode. iunication.
2.Over-voltage protection (OV	'P)		Output shu	t-down. Rese	t by AC inpu	t recycle in a	utostart mod	de, by OUTPl	JT button, b	y rear panel o	or by commu	nication.	
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	5~220.5	5~330.75	5~661.5
4. Over-voltage programming				ed output vo									
5.Output under voltage limit (								nalog progra	amming. Pre	set by front p	oanel or com	munication p	ort.
6.Over temperature protectio					Auto recover		rt mode.						
7. Output under voltage limit (	(UVL)				Vout below li								
8. Output under voltage prote	ection (UVP)		Prevents ac mode, by P	ljustment of ower Switch,	Vout below li by OUTPUT b	imit. P.S outp button, by re	ut turns Off o ar panel or b	during unde y communic	r voltage co ation.	ndition. Rese	et by AC inpu	t recycle in au	itostart
FRONT PANEL								-					
1.Control functions			Multiple on	tions with 2	Encoders								
					nanual adjust	t							
			OVP/UVL/U	VP manual a	djust								
			Protection	Functions - C	VP, UVL,UVP,	Foldback, O	CL, ENA, ILC						
					ns - Selectio			5,USB or Op	tional comn	nunication in	terface.		
				OFF. Front P									
					ns - Selectio								
					ns - Selection					orogramming	g		
					ns - Selectior				0V.				
2.Display					0.05% of rate								
					0.2% of rated								
3. Front Panel Buttons Indicati	ons		OUTPUT OF	N, ALARM, PR	EVIEW, FINE,	COMMUNIC	ATION, PROT	ECTION,CON	NFIGURATIO	N, SYSTEM, S	EQUENCER.		
4. Front Panel Display Indication	ons		Voltage, Cu (communic	rrent, Power, ation), RS/US	CV, CC, CP, E B/LAN/IEEE o	xternal Volta communicati	ge, External on, Trigger, L	Current, Add Load/Store C	dress, LFP, Ai Iell.	utostart, Safe	etstart, Foldb	ack V/I, Remo	te
ENVIRONMENTAL CONDITIO	NS												
1.Operating temperature			0~50°C, 100	0% load									
2.Storage temperature			-30~85°C	7010441		-				-	-		
3.Operating humidity		%		(no conden									
4.Storage humidity		%		(no condens									
5.Altitude (*17)			Operating:	10000ft (300	0m), output c	urrent derat	ing 2%/100m	or Ta derati	ng 1°C/100n	n above 2000	m. Non oper	ating: 40000f	t (12000m).
MECHANICAL													
1.Cooling			Forced air c	ooling by int	ernal fans. Ai	ir flow direct	ion: from Fro	nt panel to p	oower suppl	y rear			
2.Weight	GSP 10kW	kg	Less than 15	5.5kg.									
3.Dimensions (WxHxD)	GSP 10kW	mm			Vithout busba			strain relief)	(Refer to Out	line drawing)	).		
2.Weight	GSP 15kW	kg	Less than 2	3.5kg.									
3.Dimensions (WxHxD)	GSP 15kW	mm	W: 423, H: W: 423, H:	132.5, D: 441 132.5, D: 640	.5 (Without b (Including b	ousbars and b ousbars and b	ousbars cove	r), r, and strain r	elief) (Refer	to Outline dr	awing).		
4.Vibration			MIL-810G, r	nethod 514.6	, Procedure I	, test conditi	on Annex C -	2.1.3.1					
5.Shock			Less than 2	OG, half sine,	11mSec. Unit	t is unpacked	l.						
SAFETY/EMC													
1. Applicable standards:	Safety		UL60950-1,	CSA22.2 No.	60950-1, IEC6	50950-1, EN6	0950-1.						
1.1. Interface classification			Vout ≤40V I 60≤ Vout≤	Models: Outp 600V Model	out, J1,J2,J3,J4 s: Output, J8	4,J5,J6,J7,J8 ( (sense) are h	(sense) and ,J azardous, J1,	19 (communi ,J2,J3,J4,J5,J	ication optic 6,J7 and J9 (	ons) are SELV. communicat	ion options)	are SELV	
1.2 Withstand voltage			60V≤Vout≤ Output - G 100 <vout≤< td=""><td>100V Mode round: 1500</td><td>VDC 1min, I</td><td>utput: 4242\ nput - Grou utput: 4242\</td><td>/DC 1min, Ir nd: 2835VD /DC 1min, Ir</td><td>nput - SELV C 1min. nput - SELV</td><td>: 4242VDC</td><td>1min, Outpu</td><td></td><td>50VDC 1min</td><td></td></vout≤<>	100V Mode round: 1500	VDC 1min, I	utput: 4242\ nput - Grou utput: 4242\	/DC 1min, Ir nd: 2835VD /DC 1min, Ir	nput - SELV C 1min. nput - SELV	: 4242VDC	1min, Outpu		50VDC 1min	
1.3 Insulation resistance			-		25°C, 70%RH.			т	90 Mohm at	25°C, 70%RH	4		
							abla U.1. 500			23 C, / U70NF	1.		
2.Conducted emmision					l environmer	nt, Annex H t	abie H.I , FCC						
2 Dadies de autories						- A	-1-1-110						
Radiated emission     EMC compliance	EMC(*18)				l environmer 04-3 Industria		able H.3 and	H4, FCC Par	rt 15-A, VCCI	-A			

Unless otherwise noted, specifications are warranted over the ambient temperature range of  $0^\circ$  to  $50^\circ$  C.

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

  \*NOTES:

  \*1: Minimum voltage is guaranteed to maximum 0.1% of rated output voltage.

  \*2: Minimum current is guaranteed to maximum 0.2% of rated output current.

  \*3: Derate 15A/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 \*5: 3-Phase 200V models: At 200Vac input voltage, 3-Phase 400V480V: At 380Vac input voltage, With rated output power.

  \*6: Not including EMI filter inrush current, Iess than 0.2mSec.

  \*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 300-60V models: 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.

  \*12: From 90% to 10% of Rated Output Voltage, with rated, resistive load.

  \*13: For load voltage change, equal to the unit voltage rating, constant input voltage.

  \*14: For 10W 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.

  \*16: Measured at the sensing point.

  \*17: For 10W 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.

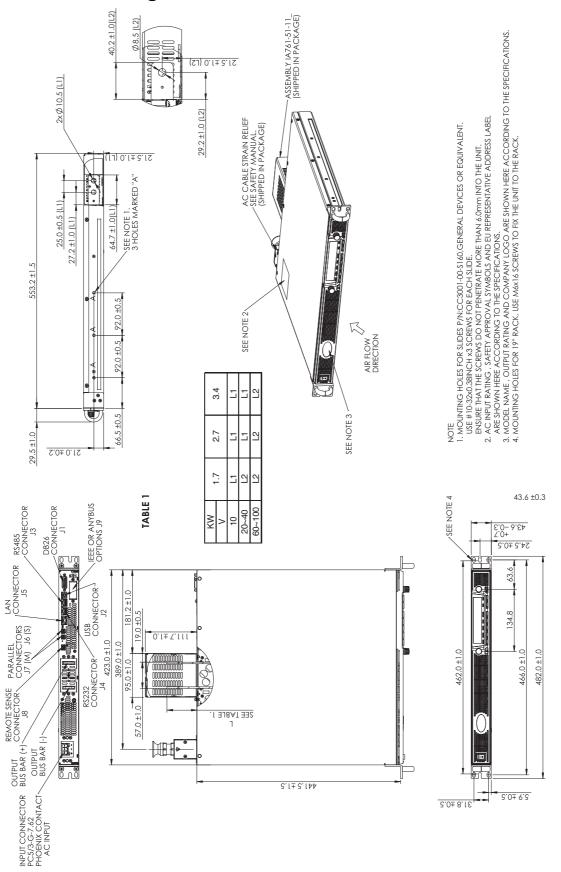
  \*20: GSP10kW For 10V model only: Max. output current for using IEEE is 1200A up to 40°C and 900A up to 30°C.

  \*21: For 10V model only: For 3-Phase 200V efficiency is 88.5%

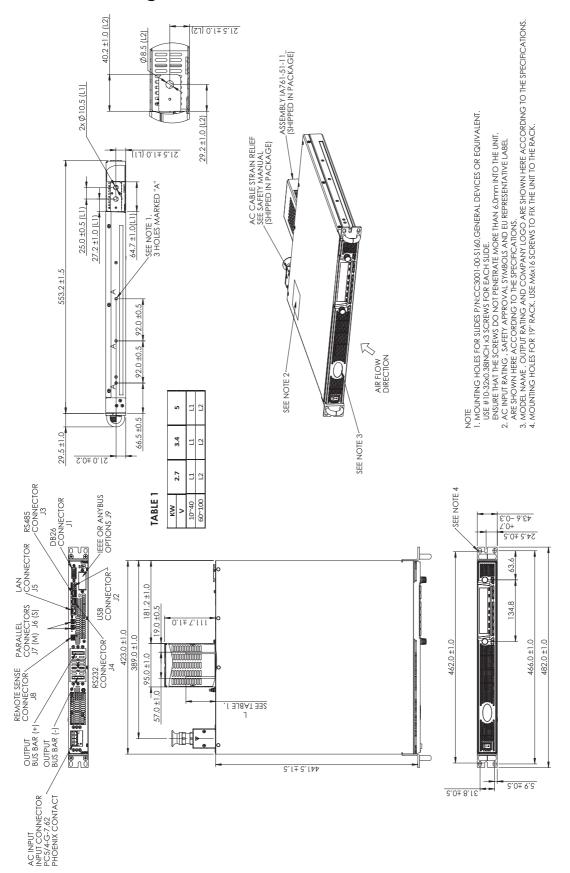
  \*22: Typ, at Ta=25°C, rated output power.

  \*23: For steady state only.

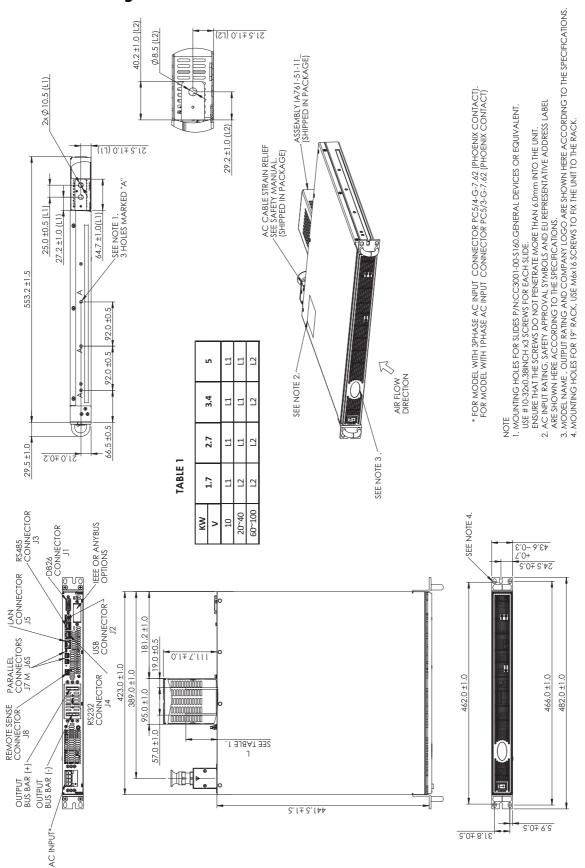
# Outline Drawing GENESYS™ G1.7kW/2.7kW/3.4kW - 1-Phase



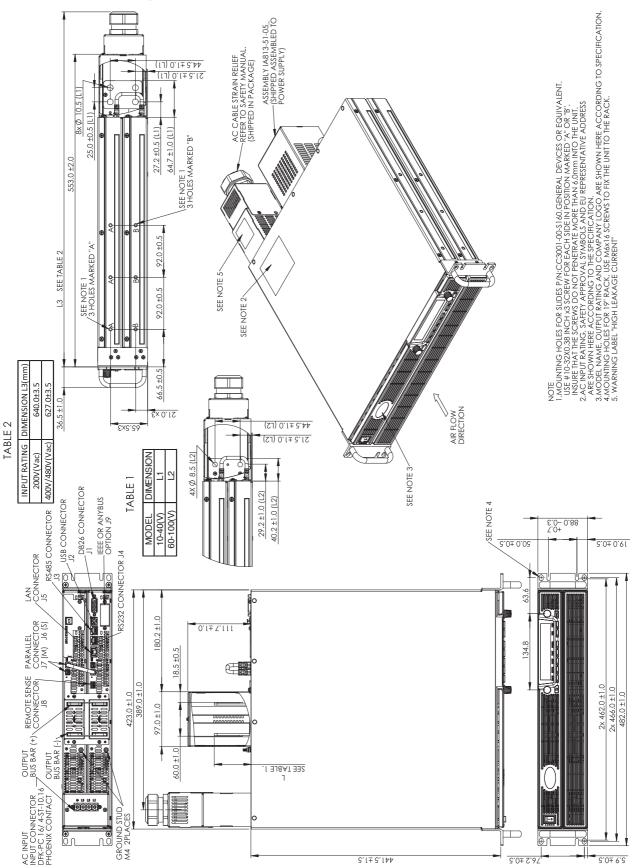
# Outline Drawing GENESYS<sup>™</sup> G2.7kW/G3.4kW/G5kW - 3-Phase



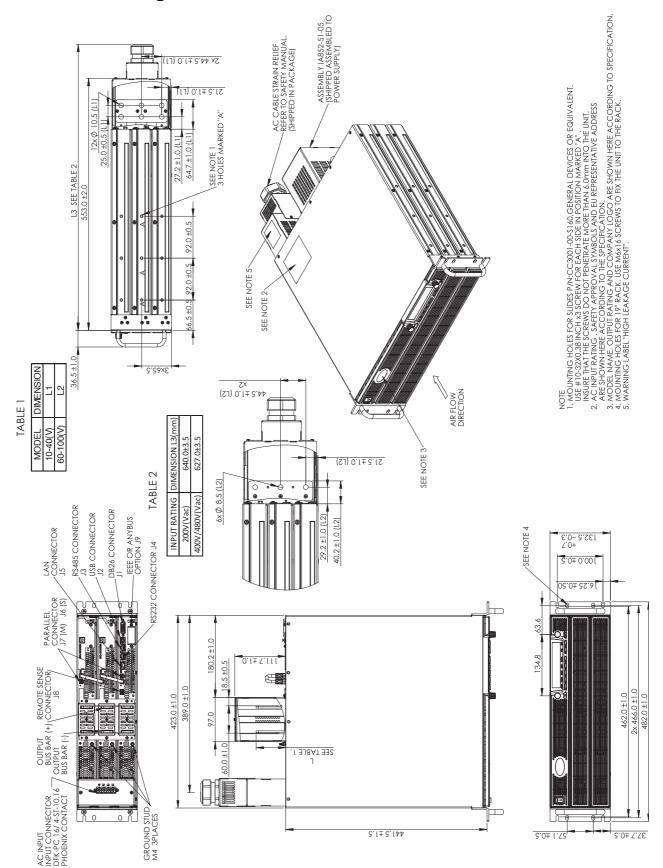
# Outline Drawing GENESYS™ GB1.7kW/GB2.7kW/GB3.4kW/GB5kW - ATE Version



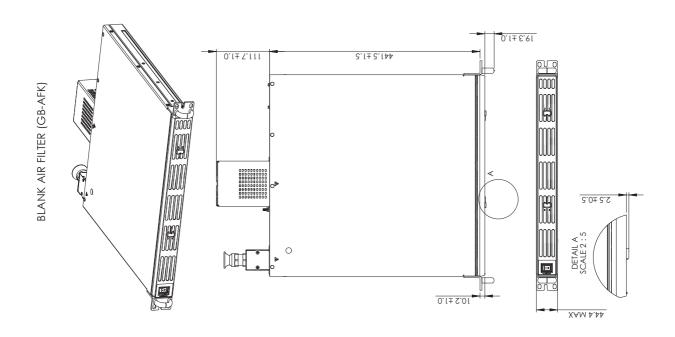
# Outline Drawing GENESYS™ GSP10kW

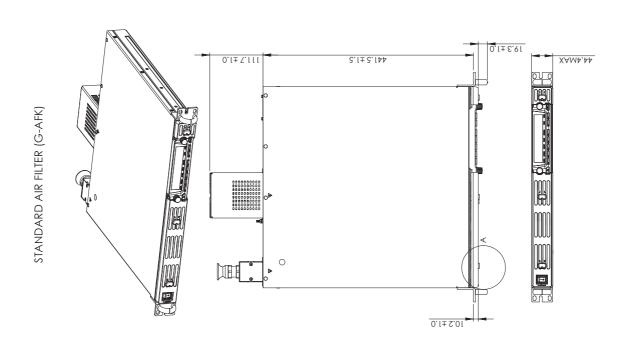


# Outline Drawing GENESYS™ GSP15kW



# Outline Drawing **G**ENESYS<sup>™</sup> Air Filter Kit





# Front Panel Air Filter Assembly

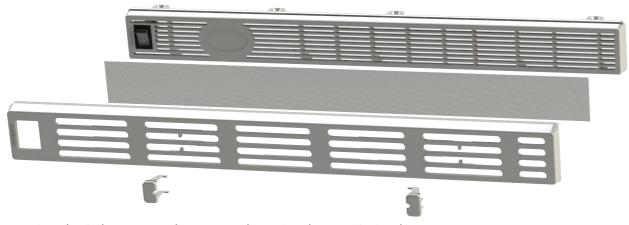
Front panel dust cover is available for dusty air environment applications

Dust cover is removable snap-in filter (for easy maintenance)

• Part Number (for standard unit) : G-AFK



• Part Number (for unit with blank front panel): GB-AFK



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

### Accessories

1. Front Panel dust filter / Field installation kit:

# Technical Specifications: Unit with Air Filter Assembly Installed

- · Derating (environmental):
- 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 models (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)

# **Filter Foam Technical Specifications**

- · Material: reticulated polyurethane foam
- Thickness: 4.0mm
- · Porosity: 30ppi
- Operating Temperature Range: 0°C to +60°C
- Storage Temperature Range: -40°C to +85°C
- · Humidity: 95% RH

### 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)

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

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

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