

Programmable Power Supplies



Programmable Power Supplies

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Applications

- ATE Systems
- · Battery simulation
- · Component burn-in
- · Plating and etching

Features

- Output voltage up to 1500V, output current up to 1000A, power range from 200W to 15000W
- Constant voltage or constant current operation with automatic crossover
- Last setting memory stores latest settings when power supply is switched off
- Analogue programming and monitoring for output voltage and current with 0-5V or 0-10V scale
- Integrated RS232/RS485 (and USB for Z+) communication interface as standard
- IEEE, LAN and isolated analogue optional interfaces
- Comprehensive parameter setting menus via front panel or digital interface
- Parallel operation with active current share and advanced parallel mode
- Arbitrary function generation and storage on Z+
- Suitable for benchtop use or 19" rack integration







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 [™] 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

GENESYS[™] power supplies have been designed to meet the demands of a wide variety of applications.

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

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

Higher power systems can be configured with up to four 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.
- 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 AC 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 AC Input 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).
- 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.



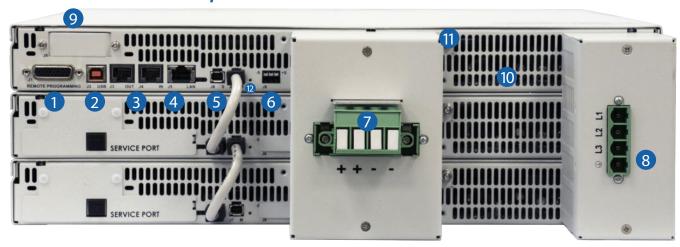
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GSP15kW Front Panel Description



- 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

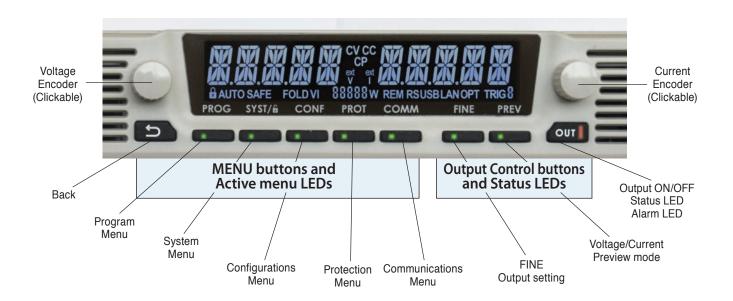
GSP15kW Rear Panel Description



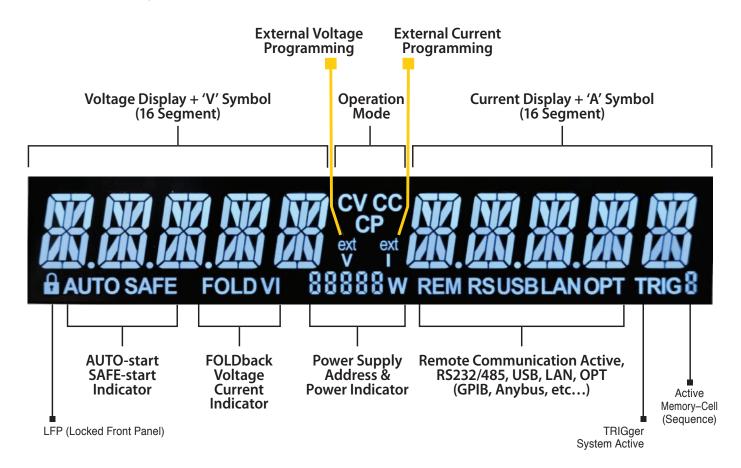
- 1. Isolated Analog Programming, Monitoring and other control connector (DB26 Female)
- 2. USB Interface connector (Type B).
- 3. RS-232/RS-485 IN/OUT Remote Digital Interface (RJ-45 type) for Multi-Drop connection
- 4. LAN (LXI 1.5) Interface connector (RJ-45 type with LAN status indicators).
- 5.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





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

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

The power supply can be controlled via the rear panel Remote digital interface (LAN, USB, RS-232/RS-485) or via the remote Isolated Analog interface.

GENESYS™ Parallel and Series Configurations

Parallel operation - Master/Slave:

Auto paralleling Scalable Master-Slave Operation. Active current sharing allows up to 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

Series operation

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

Multi-Drop Remote Programming via Communication Interface

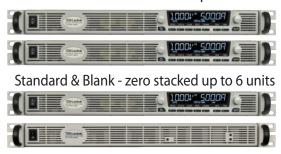
Standard Built-in LAN, USB, RS-232 & RS-485 allows "Multi-Drop" daisy-chain control of up to 31 Power supplies on the same communication bus. Can be Daisy chained via built-in RS-485 Interface.

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



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

Standard Unit - zero stacked up to 6 units



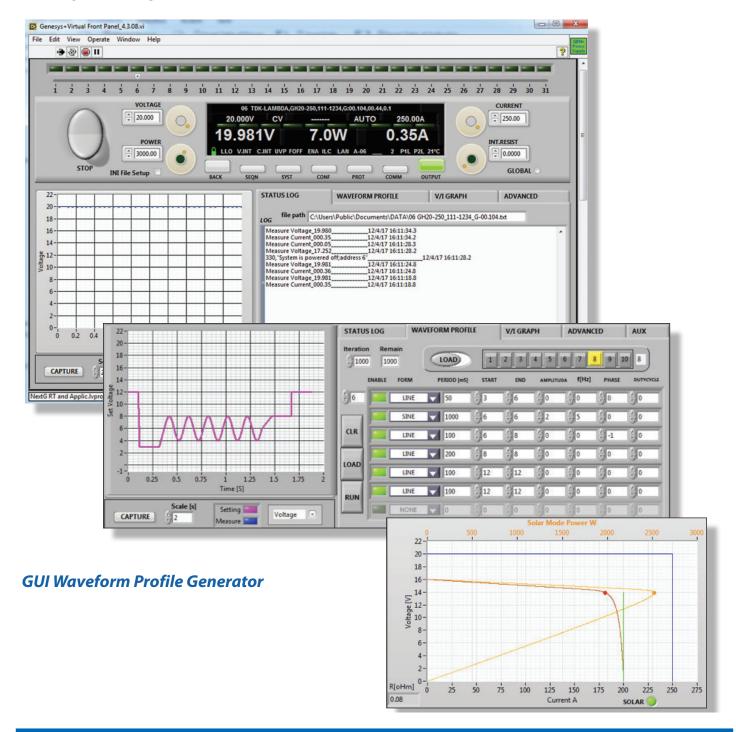




Graphical User Interface

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

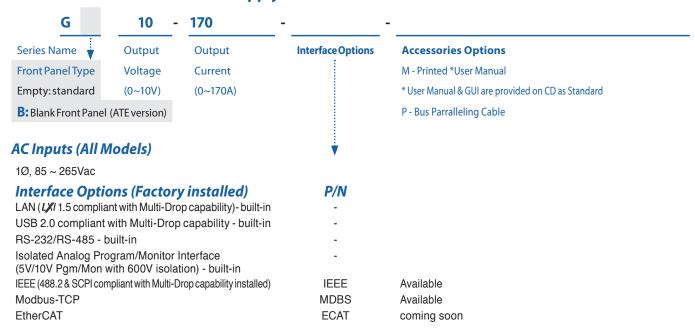
- 1. Control and monitor up-to 31 units with "Address" bar
- 2. Front panel set-up menu control (PROGram, SYSTem, CONFiguration, PROTection and COMMnication)
- 3. Informative "Parameters" status bar
- 4. Individual unit and Global command control
- 5. Data logging including errors, events and recovery
- 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





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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 **G**ENESYS[™] power supplies.

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

3. Bus Paralleling cable

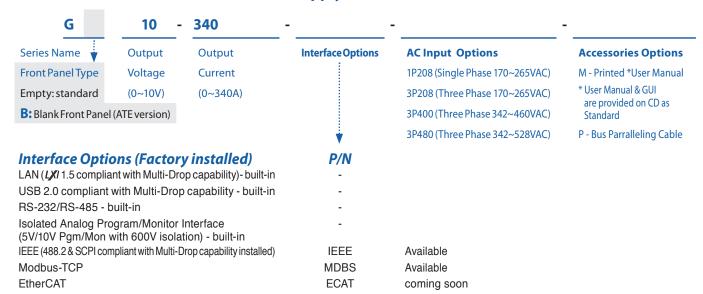
Connectors	Cables	P/N
2013595-1 (TYCO)	Shielded L=11cm	G/P

4. User Manual

Printed User Manual	G/M



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

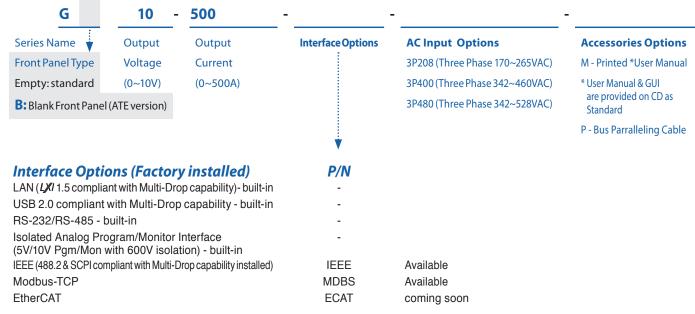
3. Bus Paralleling cable

Connectors	Cables	P/N	
2013595-1 (TYCO)	Shielded L=11cm	G/P	
4 11 84 1			

4. User Manual	
Printed User Manual	G/M



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



Output Power

(kW)

10.4

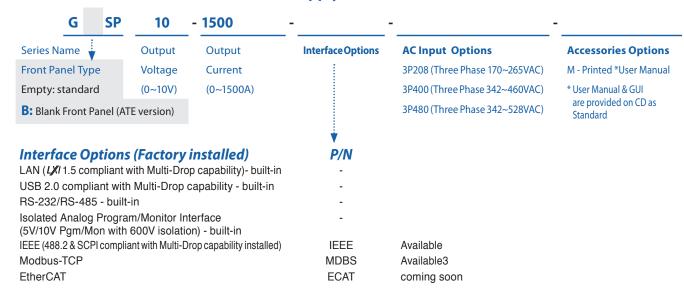
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10.2

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10.2 10.2

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



Models GSP 10kW

Model	Output Voltage VDC	Output Current (A)	Output Power (kW)	Model	Output Voltage VDC	Output Current (A)
GSP10-1000	0~10V	0~1000	10	GSP80-130	0~80V	0~130
GSP20-500	0~20V	0~500	10	GSP100-100	0~100V	0~100
GSP30-340	0~30V	0~340	10.2	GSP150-68	0~150V	0~68
GSP40-250	0~40V	0~250	10	GSP200-50	0~200V	0~50
GSP60-170	0~60V	0~170	10.2	GSP300-34	0~300V	0~34
				GSP600-17	0~600V	0~17

Models GSP 15kW

Мс	odel	Output Voltage VDC	Output Current (A)	Output Power (kW)	Mod
GSP10	-1500	0~10V	0~1500	15	GSP80-
GSP20	-750	0~20V	0~750	15	GSP100
GSP30	-510	0~30V	0~510	15.3	GSP150
GSP40	-375	0~40V	0~375	15	GSP200
GSP60	-255	0~60V	0~255	15.3	GSP300

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	G/M	



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GENESYS[™] 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	1.7kW 2.7kW 3.4kW 5kW				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



GENESYS™ 1.7kW SERIES SPECIFICATIONS

				1					1			
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)		Α	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)			-		~63Hz,Single		- 00		1.00	1.50	300	
2. Maximum Input current at 100°	% load (100/200)	Α	20/10									
3.Power Factor (Typ)	701044 (100/200)			c 0.98 @ 200	Vac, rated out	put power.						
4.Efficiency at 100 Vac/200Vac, rat	ted output (*19)	%	86/88	87/89	87/89	87/89	87/89	87/89	88/90	88/90	88/90	88/90
5.Inrush current (*5)	,	A	Less than 50A									1 22,72
				1	20	10			400	450	200	500
CONSTANT VOLTAGE MODE		V	10	20	30	40	60	80	100	150	300	600
1.Max. Line regulation (*6)				d output volta								
2.Max. Load regulation (*7)	,		0.01% of rate	d output volta	age +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 fro	m rated outp	ut voltage, fol	lowing 30 min	utes warm-up	D.				
6.Temperature stability			0.01% of rate	d Vout over 8h	nrs interval fol	lowing 30 min	utes warm-u	o. Constant lin	ie, load & temp	0.		
7. Warm-up drift					itput voltage-							
8.Remote sense compensation/w	ire (*10)	V	1	1	5	5	5	5	5	5	5	5
9.Up-prog. Response time (*11)	110 (10)	mS	20	20	20	20	20	20	25	50	100	100
9.0p-prog. kesponse time (*11)	F. III I (¥12)								+	+		_
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							ge 10~90% of r		urrent. Outpu	t set-point:
			10~100%, LO	cai sense. Less	unan 1M5, f01				or models abo	ve 100V.		
12.Hold-up time		mS				16	ms typical, rat	ed output po	wer			
CONSTANT CURRENT MODE		V	10	20	30	40	60	80	100	150	300	600
1.Max. Line regulation (*6)				d output curre								
2.Max. Load regulation (*9)				d output curr								
3.Ripple r.m.s. @ rated voltage. B.\	M EU - 1MU - (*12)		≤400	· ·	1	≤60	~50	-20	-30	-10	-0	≤5
3.Rippie r.m.s. @ rated voitage. B.V	/V 5HZ~1IVIHZ. ("13)	mA		≤160	≤100		≤50	≤30	≤30	≤10	≤8	
5.Temperature coefficient		PPM/°C			om rated outp							
					m rated outpu							
6.Temperature stability			0.01% of rate	d lout over 8h	rs. interval fol	lowing 30 min	utes warm-u	o. Constant lin	e, load & temp	perature.		
7. Warm-up drift			10V~100V mo	odel: Less thar	n +/-0.25% of r	ated output c	urrent over 30) minutes follo	owing power o	n.		
7. Wariii-up urii t			150V~600V: L	ess than +/-0	.15% of rated o	output current	t over 30 minu	ites following	power on.			
ANALOG PROGRAMMING AND M	IONITODING (ICOLATED		THE CHIEDHEN									
ANALOG PROGRAMMING AND N	IONITORING (ISOLATED	1										
1.Vout voltage programming					er selectable.							
2.lout voltage programming (*14))		0~100%, 0~5	V or 0~10V, us	er selectable.	Accuracy and	linearity: +/-0	0.4% of rated le	out.			
3.Vout resistor programming			0~100%, 0~5	/10Kohm full :	scale, user sele	ectable. Accur	acy and linear	rity: +/-0.5% o	f rated Vout.			
4.lout resistor programming (*14))		0~100%, 0~5	/10Kohm full :	scale, user sele	ectable. Accur	acy and linear	rity: +/-0.5% o	f rated lout.			
5.Output voltage monitor			0~5V or 0~10	V. user selecta	able. Accuracy	r: +/-0.5%.						
6.Output current monitor (*14)					able. Accuracy							
			0 37 0.0 10	T, user sereett	abierricearde)	, 0.5 / 0.						
SIGNALS AND CONTROLS (ISOLA	TED FROM THE OUTPUT	Τ)										
1. Power supply OK #1 signal			Power supply	output moni	tor. Open coll	ector. Output	On: On. Outp	ut Off: Off. Ma	ximum Voltag	e: 30V, Maxim	um Sink Curre	nt: 10mA.
2. CV/CC signal			CV/CC Monito	or. Open colle	ctor. CC mode	: On. CV mode	e: Off. Maximu	m Voltage: 30	V, Maximum S	ink Current: 10	DmA.	
3. LOCAL/REMOTE Analog control			Enable/Disab	ole analog pro	gramming co	ntrol by electr	ical signal or o	dry contact. Re	emote: 0~0.6V	or short. Loca	l: 2~30V or op	en.
4. LOCAL/REMOTE Analog signal			analog progra	amming contr	ol monitor sia	nal. Open colle	ector. Remote:	On. Local: Off	. Maximum Vo	Itage: 30V. Max	kimum Sink Cu	rrent: 10mA.
5. ENABLE/DISABLE signal									V or open. Use			
6. INTERLOCK (ILC) control									ort. Local: 2~3		3,00	
7. Programmed signals									rent 100mA (SI		/zener)	
3 3			<u> </u>									E\/ ncsiti
8. TRIGGER IN / TRIGGER OUT sign	als		edge trigge	ow ievel inpl r: tw=10iis m	ut voitage = (ninimum Tr 1	J.øv,IVIINIMUI f=1115 Maxim	n nign level	input voitag	e = 2.5V, Max 2 pulses 1ms	kırnum high l :	evei input =	ov positive
9. DAISY IN/SO control signal					5V/2~30V or di		, wiiii dei	ay between	- paises 11113			
			-			y contact.						
10. DAISY_OUT/PS_OK #2 signal			4~5V=OK, 0V	/ (500ohm imp	pedance)=Fail							
FUNCTIONS AND FEATURES												
1. Parallel operation			Possible. Un t	to 4 identical i	units in Master	/Slave mode	Refer to instru	iction manual				
2. Series operation					ts. Refer to ins					-		
3. Daisy chain					nected in Dais			rturn-on and	turn-off			
											1	
4. Constant power control				<u> </u>	1 33				ication ports o			
5. Output resistance control									mmunication			
6. Slew rate control							rogramming ı	range: 0.0001	~999.9 V/mSec	. or A/mSec. P	rogramming v	ria the
		-			e front panel.		alla Alan in		al . de al.			
7. Arbitrary waveforms			Profiles of up	to 100 steps	can be stored	in 4 memory c	eiis. Activatio	n by comman	d via the comr	nunication po	rts or by the fr	ont panel.
PROGRAMMING AND READBA	CK (USB, LAN,	W	10	20	20	40	60	00	100	150	300	600
RS232/485, Optional IEEE (*18) Interfaces)	V	10	20	30	40	60	80	100	150	300	600
1.Vout programming accuracy (*1	5)		0.05% of rate	d output volta	age							
2.lout programming accuracy (*1	4)		0.1% of actua	l output curre	nt+0.2% of ra	ted output cu	rrent					
3.Vout programming resolution				ed output vol								
4.lout programming resolution				ed output cur								
5.Vout readback accuracy				ed output cur								
6.lout readback accuracy (*14)				output curre	T							
7.Vout readback resolution (of rat		%	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 rate	ed output current))	%	0.007%	0.002%	0.003%	0.003%	0.005%	0.006%	0.007%	0.010%	0.003%	0.004`%



GENESYS™ 1.7kW SERIES SPECIFICATIONS

PROTECTIVE FUNCTIONS		V	10	20	30	40	60	80	100	150	300	600
1. Foldback protection			Output shut-	down when pole. Reset by A	ower supply o	:hanges mode le in autostart	from CV or Po mode, by Pov	ower Limit to (ver Switch, by	CC mode or fro	om CC or Powe	er Limit to CV nel or by com	mode. munication.
2.Over-voltage protection (OVP)			Output shut-	down. Reset b	y AC input re	cycle in autost	art mode, by	OUTPUT butto	n, by rear par	nel or by comn	nunication.	
3.Over -voltage programming rar	nge	V	0.5~12	1~24	2~36	2~44.1	5~66.15	5~88.2	5~110.25	5~165.37	5~330.75	5~661.5
4. Over-voltage programming acc	curacy		+/-1% of rated	d output volta	ige							
5.Output under voltage limit (UV	L)		Prevents from	n adjusting Vo	ut below limi	t. Does not ap	ply in analog	programming	. Preset by fro	nt panel or co	mmunication	port.
6.Over temperature protection			Shuts down t	he output. Au	to recovery b	y autostart mo	ode.					
7. Output under voltage limit (UV	L)		Prevents adju	stment of Vol	ut below limit							
8. Output under voltage protection	on (UVP)		Prevents adjumode, by Pov	stment of Vou 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.	e condition. R	eset by AC inp	out recycle in a	utostart
FRONT PANEL												
1.Control functions			Multiple opti	ons with 2 End	oders							
			Vout/Iout/Po						-			-
			OVP/UVL/UVI							-		
						dback, OCL, E	NA.II.C					
						LAN, IEEE, RS2		or Ontional co	nmunicatio	n interface		
			Output ON/O			LAIN,ILLL,INSZ	32,113-103,030	or optional co	Jiiiiiaiiicatio	militeriace.		
						Baud Rate, Ac	ldress IP and	communication	n language			
						tage/resistive				nina		
						Voltage/Curre			ion prograilli	mig		
2.Display						utput voltage		y 5 v/ 10 v.				
Z.Dispidy												
25 10 10 11 11 11						put current +		N CONFICUR	TION SYSTEM	4 CEOUENICES		
3.Front Panel Buttons Indications										И, SEQUENCER		-
4. Front Panel Display Indications			Voltage, Curro (communicat	ent, Power, C\ ion), RS/USB/I	/, CC, CP, Exter LAN/IEEE com	nal Voltage, E munication, T	xternal Curre rigger, Load/S	nt, Address, LF Store Cell.	P, Autostart, S	Safetstart, Folc	lback V/I, Rem	ote
ENVIRONMENTAL CONDITIONS												
1.Operating temperature			0~50°C, 100%	load.								
2.Storage temperature			-30~85°C									
3.Operating humidity		%	20~90% RH (r	no condensati	ion)				-	-		-
4.Storage humidity		%	10~95% RH (r									
5.Altitude (*16)						ent derating 2	%/100m or Ta	derating 1°C/1	100m ahove 2	000m. Non op	erating: 40000	Oft (12000m)
MECHANICAL			1-1		,,						g	
1.Cooling			Forced air cod	oling by interr	nal fans. Air flo	w direction: f	rom Front par	nel to power si	upply rear			
2.Weight		kg	Less than 5kg									
3.Dimensions (WxHxD)		mm				usbars and bu ousbars and b			outline draw	ing).		
4.Vibration			MIL-810G, me	thod 514.6, Pi	rocedure I, tes	t condition Ar	nnex C - 2.1.3.					
5.Shock			Less than 200	i, half sine, 11r	mSec. Unit is ι	ınpacked.						
SAFETY/EMC												
1. Applicable standards:	Safety		UL60950-1, C	SA22.2 No.609	950-1, IEC6095	50-1, EN60950	-1.					
1.1. Interface classification			Vout ≤40V Mo 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 (cor dous, J1,J2,J3,	nmunication o	pptions) are SE I J9 (communi	ELV. ication options	s) are SELV	
			Vout <40V M	lodels: Innut	- Output (SF	LV): 4242VD	C 1min Innut	- Ground: 28	35VDC 1mir	1.		
1.2 Withstand voltage			60V≤Vout≤1	00V Models:	Input - Outpu	,	1min, Input -	SELV: 4242V		utput - SELV:	850VDC 1mi	n,
			100 <vout≤6< td=""><td>00V Models:</td><td>Input - Outpu</td><td></td><td>1min. Input -</td><td>SELV: 4242\</td><td>/DC 1min, O</td><td>utput - SELV:</td><td>1500VDC 1m</td><td>nin,</td></vout≤6<>	00V Models:	Input - Outpu		1min. Input -	SELV: 4242\	/DC 1min, O	utput - SELV:	1500VDC 1m	nin,
1.3 Insulation resistance	1		100Mohm at	25°C, 70%RH.	<u> </u>							
2.Conducted emmision					nvironment A	nnex H table	H 1 . FCC Part	15-A. VCCI-A				
3.Radiated emission						Innex H table			/CCI-A			
4. EMC compliance	EMC(*17)		According to				11.5 ana 114,1	cci ait is A,	rcci n			
4. LIVIC COITIPITATICE	LIVIC(1/)		According to	ILC/EINDIZU4-	o muustridi el	ivironinent						

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.

- **I: Minimum voltage is guaranteed to maximum 0.1% of rated output voltage.
 **2: Minimum current is guaranteed to maximum 0.2% of rated output current.
 **3: For cases where conformance to various safety standards (UL, IEC, etc...) is required, to be described as 100-240Vac (50/60Hz).
 **4: Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m.
 **5: Not including EMI filter inrush current, less than 0.2mSec.
 **6: 85-132Vac or 170-265Vac. Constant load.
 **7: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.
 **8: For 10V-300V models: Measured with JETA RC-913TC (1:1) probe. For 400-600V model: Measured with 100:1 probe.
 **9: For load voltage change, equal to the unit voltage rating, constant input voltage.
 **10: The maximum voltage on the power supply terminals must not exceed the rated voltage.
 **11: From 10% to 90% of Rated Output Voltage, with rated, resistive load.
 **12: From 90% to 10% of Rated Output Voltage.
 **13: For 10V model, the ripple is measured at 20~100% of rated output voltage and rated output current. For other models, the ripple is measured at 10~100% of rated output voltage and rated output current Bus 51z-71MHz.
 **14: The Constant Current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift.
 **15: Measured at the sensing point.
 **16: For 10V model Ta derating 2°C/100m.
 **17: Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m.
 **18: Max. ambient temperature for using IEEE is 40°C.
 **19: Ta=25°C, rated output power.



GENESYS[™] 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) 2.Rated output current (*2)		V	10 265	20 135	30 90	40 68	60 45	80 34	100 27	150 18	300	600
3.Rated output current (*2)		A W	2650	2700	2700	2720	2700	2720	2700	2700	2700	4.5 2700
								_		-	1	
INPUT CHARACTERISTICS		V	10 3-Phase 200\	20 / models: 170	30 1~265\/ac_47~	63Hz (Covers	200/230\/ac\	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 63Hz (Covers 63Hz (Covers	380/400/415 ¹ 380/400/415/	440/460/480V	ac)			
2. Maximum Input current at 100% load 3	-Phase, 200V models: -Phase, 400V models: -Phase, 480V models:		10A @ 200Va 5.5A @ 380Va 5.5A @ 380Va	ic ic								
1-	-Phase, 200V models:		16A @ 200Va		201/							
3.Power Factor (Typ) —			For 3-Phase: (For 1-Phase: (
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 50A		05.5	, ,,		70.5	70.5	70.5	70.5	70.5
CONSTANT VOLTAGE MODE		V	10	20	30	40	60	80	100	150	300	600
1.Max. Line regulation (*7)			0.01% of rate						100	150	500	000
2.Max. Load regulation (*8)			0.01% of rate									
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		PPM/°C	50PPM/°C fro	m rated outp	ut voltage, fo	llowing 30 mi	nutes warm-u	ıp.		1	Į.	
6.Temperature stability			0.01% of rate	d Vout over 8	hrs interval fo	llowing 30 mi	nutes warm-ı	ıp. Constant li	ne, load & ter	mp.		
7. Warm-up drift						+2mV over 30						
8.Remote sense compensation/wire	e (*10)	٧	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 progressions	ull load (*11)	mS	50	50	80	80	80	100	100	100	100	200
10.Down-prog.response time:	lo 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 s than 1mS, fo	in 0.5% of its roor models up to	ated output for and including	or a load chan ng 100V. 2mS,	ge 10~90% o for models al	of rated output bove 100V.	t current. Outp	ut set-point
12.Start up delay		Sec	Less than 6 Se	ec								
CONSTANT CURRENT MODE		٧	10	20	30	40	60	80	100	150	300	600
1.Max. Line regulation (*7)			0.05% of rate		ent.							
2.Max. Load regulation (*13)			0.08% of rate	d output curr	ent.							
3.Ripple r.m.s. @ rated voltage. 3-Ph	nase (*14)	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				put current, fo			•			
6.Temperature stability						llowing 30 mi				mperature.	-	
7. Warm-up drift			10V~100V mo	odel: Less tha	n +/-0.25% of	rated output output curren	current over 3	0 minutes foll	owing powe			
				.ess than +/-0	.15% Of Taleu	output curren	it over 30 mm	utes following	power on.			
ANALOG PROGRAMMING AND MO	NITORING (ISOLATED	FROM		V 0 10V		A	I Itaa aasta aa d	0.150/ -6	I.Vt			
1.Vout voltage programming						. Accuracy and						
2.lout voltage programming (*15) 3.Vout resistor programming						. Accuracy and lectable. Accu						
4.lout resistor programming (*15)						lectable. Accu						
5.Output voltage monitor			0~5V or 0~10				racy and mice	inty. 17 0.570 0	or rated lout.			
6.Output current monitor (*15)												
separ content monitor (15)	l l			IV. USPP SPIPCT	able, Accurac							
				v, user select	able. Accurac							
	ED FROM THE OUTPU	T)				y: +/-0.5%.	.00			201111		
5. SIGNALS AND CONTROLS (ISOLATI 1. Power supply OK #1 signal	ED FROM THE OUTPU	T)	Power supply	output mon	itor. Open col	y: +/-0.5%. lector. Output					mum Sink Curr	rent: 10mA.
1. Power supply OK #1 signal 2. CV/CC signal	ED FROM THE OUTPU	T)	Power supply	output mon	itor. Open col	y: +/-0.5%. lector. Output e: On. CV mod	e: Off. Maxim	um Voltage: 3	0V, Maximum	n Sink Current:	10mA.	
Power supply OK #1 signal CV/CC signal LOCAL/REMOTE Analog control	ED FROM THE OUTPU	T)	Power supply CV/CC Monito Enable/Disab	output monor. Open colle	itor. Open colector. CC mode	y: +/-0.5%. lector. Output e: On. CV mod ontrol by elect	e: Off. Maxim rical signal or	um Voltage: 3 dry contact. R	0V, Maximum emote: 0~0.6	n Sink Current: 6V or short. Lo	10mA. cal: 2~30V or o	pen.
Power supply OK #1 signal CV/CC signal LOCAL/REMOTE Analog control LOCAL/REMOTE Analog signal	ED FROM THE OUTPU	T)	Power supply CV/CC Monito Enable/Disab analog progra	output mon or. Open colle ole analog pro amming contr	itor. Open col ector. CC mod ogramming co ol monitor sig	y: +/-0.5%. lector. Output e: On. CV mod ontrol by elect inal. Open colle	e: Off. Maxim rical signal or ector. Remote	um Voltage: 3 dry contact. R : On. Local: Off	0V, Maximum emote: 0~0.0 . Maximum V	n Sink Current: 6V or short. Lo oltage: 30V, Ma	10mA. cal: 2~30V or o aximum Sink Cu	pen.
1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog control 4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal	ED FROM THE OUTPU	T)	Power supply CV/CC Monito Enable/Disab analog progra Enable/Disab	output mon or. Open colle ole analog pro amming contr ole PS output	itor. Open col ector. CC mode ogramming cc ol monitor sig by electrical s	y: +/-0.5%. lector. Output e: On. CV mod ontrol by elect inal. Open colle ignal or dry co	e: Off. Maxim rical signal or ector. Remote ontact. 0~0.6\	um Voltage: 30 dry contact. R : On. Local: Off / or short, 2~3	OV, Maximum emote: 0~0.6 . Maximum Vo OV or open. L	n Sink Current: 6V or short. Lo oltage: 30V, Ma Jser selectable	10mA. cal: 2~30V or o eximum Sink Cu e logic.	pen.
1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog control 4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal 6. INTERLOCK (ILC) control	ED FROM THE OUTPU	T)	Power supply CV/CC Monitor Enable/Disab analog progra Enable/Disab Enable/Disab	or output mon or. Open colle ole analog pro amming contr ole PS output	itor. Open col ector. CC mod- ogramming co ool monitor sig by electrical s by electrical s	y: +/-0.5%. lector. Output e: On. CV mod ontrol by elect inal. Open colle ignal or dry co	e: Off. Maxim rical signal or ector. Remote ontact. 0~0.6\ ontact. Remot	um Voltage: 30 dry contact. R : On. Local: Off / or short, 2~3 de: 0~0.6V or sl	0V, Maximum lemote: 0~0.6 . Maximum V 0V or open. U nort. Local: 2	n Sink Current: 6V or short. Lo oltage: 30V, Ma Jser selectable ~30V or open.	: 10mA. cal: 2~30V or o aximum Sink Cu e logic.	pen.
1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog control 4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal 6. INTERLOCK (ILC) control 7. Programmed signals		T)	Power supply CV/CC Monito Enable/Disab analog progra Enable/Disab Enable/Disab Two open dra	or Open colle or. Open colle ole analog pro amming contr ole PS output olie PS output	itor. Open col ector. CC mod- ogramming co ol monitor sig by electrical s by electrical s nable signals.	y: +/-0.5%. lector. Output e: On. CV mod ontrol by elect inal. Open colle ignal or dry co ignal or dry co Maximum vol	e: Off. Maxim rical signal or ector. Remote ontact. 0~0.6\ ontact. Remot tage 25V, Max	um Voltage: 30 dry contact. R : On. Local: Off / or short, 2~3 de: 0~0.6V or sl kimum sink cu	0V, Maximum lemote: 0~0.6 . Maximum V 0V or open. L nort. Local: 2 rrent 100mA	n Sink Current: 6V or short. Lo oltage: 30V, Ma Jser selectable ~30V or open. (Shunted by 2	10mA. cal: 2~30V or o eximum Sink Cu e logic. 7V zener)	pen. Irrent: 10mA
1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog control 4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal 6. INTERLOCK (ILC) control		T)	Power supply CV/CC Monito Enable/Disab analog progra Enable/Disab Enable/Disab Two open dra Maximum Io	output mon or. Open colle ole analog pro amming contr ole PS output ole PS output ain programm	itor. Open col ector. CC mode ogramming co ol monitor sig by electrical s by electrical s able signals. ut voltage =	y: +/-0.5%. lector. Output e: On. CV mod ontrol by elect inal. Open colle ignal or dry co ignal or dry co Maximum vol	e: Off. Maxim rical signal or ector. Remote ontact. 0~0.6\ ontact. Remot tage 25V, Maxim high leve	um Voltage: 30 dry contact. R : On. Local: Off / or short, 2~3 de: 0~0.6V or sl kimum sink cu I input voltage	0V, Maximum lemote: 0~0.6 . Maximum Vo 0V or open. Unort. Local: 2 rrent 100mA ge = 2.5V, M	n Sink Current: 6V or short. Lo oltage: 30V, Ma Jser selectable ~30V or open. (Shunted by 2 laximum higl	: 10mA. cal: 2~30V or o aximum Sink Cu e logic.	pen. Irrent: 10mA
1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog control 4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal 6. INTERLOCK (ILC) control 7. Programmed signals		T)	Power supply CV/CC Monito Enable/Disab analog progra Enable/Disab Enable/Disab Two open dra Maximum Io	output mon or. Open colle ole analog pro amming contr ole PS output ole PS output ain programm ow level inpur: tw=10us n	itor. Open col ector. CC mod- ogramming co- ol monitor sig by electrical s by electrical s nable signals. ut voltage = ninimum. Tr,	y: +/-0.5%. lector. Output e: On. CV mod orntrol by elect inal. Open colli ignal or dry cc ignal or dry cc Maximum vol 0.8V,Minimu Tf=1us Maxir	e: Off. Maxim rical signal or ector. Remote ontact. 0~0.6\ ontact. Remot tage 25V, Maxim high leve	um Voltage: 30 dry contact. R : On. Local: Off / or short, 2~3 de: 0~0.6V or sl kimum sink cu I input voltage	0V, Maximum lemote: 0~0.6 . Maximum Vo 0V or open. Unort. Local: 2 rrent 100mA ge = 2.5V, M	n Sink Current: 6V or short. Lo oltage: 30V, Ma Jser selectable ~30V or open. (Shunted by 2 laximum higl	10mA. cal: 2~30V or o eximum Sink Cu e logic. 7V zener)	pen. Irrent: 10mA.
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1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog control 4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal 6. INTERLOCK (ILC) control 7. Programmed signals 8. TRIGGER IN / TRIGGER OUT signal 9. DAISY_IN/SO control signal 10. DAISY_OUT/PS_OK #2 signal FUNCTIONS AND FEATURES		T)	Power supply CV/CC Monite Enable/Disab analog progra Enable/Disab Two open dra Maximum Ic edge trigge By electrical \(4~5V=OK, 0V \)	y output mon or. Open colle ble analog pro amming contr ble PS output l ain programm ow level inpur r: tw=10us n Voltage: 0~0.6	itor. Open col ector. CC mod- ogramming co- ol monitor sig by electrical s by electrical s hable signals. ut voltage = ninimum. Tr, 6V/2~30V or d pedance)=Fai	y: +/-0.5%. lector. Output e: On. CV mod ontrol by elect inal. Open colle ignal or dry cc ignal or dry cc Maximum vol Tf=1us Maxir lry contact.	e: Off. Maxim rical signal or ector. Remote ontact. 0~0.6\ ontact. Remot tage 25V, Maxim high leve mum, Min de	um Voltage: 3: dry contact. R : On. Local: Off / or short, 2~3 :e: 0~0.6V or sl ctimum sink cu I input voltagelay between	ov, Maximum demote: 0~0.4 . Maximum V ov or open. U nort. Local: 2: rrent 100mA ge = 2.5V, M n 2 pulses 1r	n Sink Current: 6V or short. Lo oltage: 30V, Ma Jser selectable ~30V or open. (Shunted by 2 laximum higl	10mA. cal: 2~30V or o eximum Sink Cu e logic. 7V zener)	pen. ırrent: 10mA
1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog control 4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal 6. INTERLOCK (ILC) control 7. Programmed signals 8. TRIGGER IN / TRIGGER OUT signal 9. DAISY_IN/SO control signal 10. DAISY_OUT/PS_OK #2 signal FUNCTIONS AND FEATURES 1. Parallel operation		T)	Power supply CV/CC Monite Enable/Disab analog progra Enable/Disab Two open dra Maximum day Maximum day edge tringe By electrical v 4~5V=OK, 0V	or output mon or. Open colle ole analog pro amming controle PS output lain programm ow level input r. tw=10us n voltage: 0~0.4 identical	itor. Open col ector. CC mod- ogramming co- ol monitor sig by electrical s by electrical s nable signals. ut voltage = ninimum. Tr, 6V/2~30V or d pedance)=Fai units in Maste	y: +/-0.5%. lector. Output e: On. CV mod ontrol by elect inal. Open colle ignal or dry cc ignal or dry cc Maximum vol 0.8V,Minimu Tf=1us Maxir Iry contact.	e: Off. Maxim rical signal or ector. Remote ontact. 0~0.6V ontact. Remot tage 25V, Maxim high leve mum, Min de	um Voltage: 3: dry contact. R : On. Local: Off / or short, 2~3 :e: 0~0.6V or sl ctimum sink cu I input voltagelay between	ov, Maximum demote: 0~0.4 . Maximum V ov or open. U nort. Local: 2: rrent 100mA ge = 2.5V, M n 2 pulses 1r	n Sink Current: 6V or short. Lo oltage: 30V, Ma Jser selectable ~30V or open. (Shunted by 2 laximum higl	10mA. cal: 2~30V or o eximum Sink Cu e logic. 7V zener)	pen. ırrent: 10mA
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1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog control 4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal 6. INTERLOCK (ILC) control 7. Programmed signals 8. TRIGGER IN / TRIGGER OUT signal 9. DAISY_IN/SO control signal 10. DAISY_OUT/PS_OK #2 signal FUNCTIONS AND FEATURES 1. Parallel operation 2. Series operation 3. Daisy chain 4. Constant power control		T)	Power supply CV/CC Monitu Enable/Disab analog progra Enable/Disab Enable/Disab Two open dra Maximum Id. edge trigge By electrical V 4~5V=OK, 0V Possible. Up t Possible. Two Power suppli Limits the ou	or output mon or. Open colle ple analog pro amming controlle PS output ple PS output p	itor. Open col ector. CC mode gramming co ol monitor sig by electrical s by electrical s anable signals. ut voltage = ininimum. Tr, 6V/2~30V or d pedance)=Fai units in Maste ts. Refer to in: nected in Dai o a proggrami	y: +/-0.5%. lector. Output e: On. CV mod ontrol by elect inal. Open colle ignal or dry co dignal or dry co Maximum vol 0.8V, Minimu fr=1us Maxir lry contact. I er/Slave mode. struction man isy chain to syr med value. Pro	e: Off. Maxim rical signal or ector. Remote ontact. 0~0.6\ ontact. Remot tage 25V, Maxim high leve mum, Min de Refer to instrual. nchronize the ogramming vi	um Voltage: 3: dry contact. R: On. Local: Off / or short, 2~3 e: 0~0.6V or sl kimum sink cu I input voltagelay between ruction manua ir turn-on and a the communi	ov, Maximum viemote: 0~0.4. Maximum Vieword: 0.00 or open. Lenort. Local: 2. Frent 100mA ge = 2.5V, M n 2 pulses 1r lt. turn-off. nication port:	n Sink Current: 6V or short. Lo oltage: 30V, Ma Jser selectable ~30V or open. (Shunted by 2 laximum high	: 10mA. cal: 2~30V or o eximum Sink Cu e logic. 7V zener) h level input :	pen. ırrent: 10mA
1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog control 4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal 6. INTERLOCK (ILC) control 7. Programmed signals 8. TRIGGER IN / TRIGGER OUT signal 9. DAISY_IN/SO control signal 10. DAISY_OUT/PS_OK #2 signal FUNCTIONS AND FEATURES 1. Parallel operation 2. Series operation 3. Daisy chain 4. Constant power control 5. Output resistance control		T)	Power supply CV/CC Monite Enable/Disab analog progra Enable/Disab Two open dra Maximum le edge trigge By electrical v 4~5V=OK, 0V Possible. Up t Possible. Two Power suppli Limits the ou Emulates seri	y output mon or. Open colle ple analog pro amming controlle PS output lian programm ow level input; tw=10us n voltage: 0~0.0 (5000hm import to 4 identical unites can be contput power to the contput rise testing the contput rise	itor. Open col ector. CC mod- ogramming co- ol monitor sig by electrical sig by electrical signals. ut voltage = ninimum. Tr, 6V/2~30V or of pedance)=Fai units in Maste ts. Refer to in: nected in Dai o a proggram . Resistance re- e and Output	y: +/-0.5%. lector. Output e: On. CV mod ontrol by elect inal. Open colle ignal or dry cc ign	e: Off. Maxim rical signal or ector. Remote ontact. 0~0.6\ ontact. Remot tage 25V, Max im high leve mum, Min de . Refer to instr ual. nchronize the ogramming vi mΩ. Programi	um Voltage: 3: dry contact. R: On. Local: Off / or short, 2~3 e: 0~0.6V or sl kimum sink cu l input voltagelay between ruction manua ir turn-on and a the commur ming via the ce	ov, Maximum Viemote: 0~0.0 Maximum Viemote: 0~0.0 Maximum Viemott. Local: 2- rrent 100mA ge = 2.5V, Mn 2 pulses 1r il. turn-off. hication ports	n Sink Current: 6V or short. Lo oltage: 30V, Ma Jser selectable ~30V or open. (Shunted by 2 laximum high ms.	: 10mA. cal: 2~30V or o eximum Sink Cu e logic. 7V zener) h level input :	ipen. irrent: 10mA = 5V positiv
1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog control 4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal 6. INTERLOCK (ILC) control 7. Programmed signals 8. TRIGGER IN / TRIGGER OUT signal 10. DAISY_IN/SO control signal 10. DAISY_OUT/PS_OK #2 signal FUNCTIONS AND FEATURES 1. Parallel operation 2. Series operation 3. Daisy chain 4. Constant power control 5. Output resistance control 6. Slew rate control		T)	Power supply CV/CC Monite Enable/Disab analog progra Enable/Disab Enable/Disab Two open dra Maximum Ic edge trigge By electrical v 4~5V=OK, 0V Possible. Up t Possible. Two Power suppli Limits the ou Emulates seri	or output mon or. Open colle ple analog pro amming controlle PS output lain programm ow level input twellous of didentical unit es can be contput unit of the power to the pow	itor. Open col ector. CC mod- ogramming co- ol monitor sig by electrical s by electrical s hable signals. ut voltage = hinimum. Tr, 6V/2~30V or of pedance)=Fai units in Maste ts. Refer to in: nected in Dai o a proggram	y: +/-0.5%. lector. Output e: On. CV mod ontrol by elect inal. Open colle ignal or dry co ignal or dry co Maximum vol asy. Minimu Tf=1us Maxim lry contact. I er/Slave mode. struction man sy chain to syr med value. Pro fall slew rate. F.	e: Off. Maxim rical signal or ector. Remote ontact. 0~0.6\ ontact. Remote tage 25V, Maxim high leve mum, Min de netro instrual. Refer to instrual. nchronize the ogramming vi mΩ. Programming Vi programming vi mΩ of the netro instrual.	um Voltage: 3: dry contact. R: On. Local: Off / or short, 2~3 e: 0~0.6V or sl kimum sink cu I input voltage lay between ruction manua ir turn-on and a the commun ting via the co	ov, Maximum Viemote: 0~0.4 Maximum Viewor open. Local: 2- rrent 100mA 1 2 pulses 1r Lucal: 2- rrent 100mA 1 2 pulses 1r Lucal: 2- communication 7999.9 V/mS	in Sink Current: 6V or short. Lo oltage: 30V, Ma Jser selectable ~30V or open. (Shunted by 2 laximum high ms. s or the front p on ports or the liec. or A/mSec	: 10mA. :cal: 2~30V or of aximum Sink Cu e logic. 7V zener) h level input : panel. front panel.	pen. Irrent: 10mA = 5V positiv
1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog control 4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal 6. INTERLOCK (ILC) control 7. Programmed signals 8. TRIGGER IN / TRIGGER OUT signal 10. DAISY_IN/SO control signal 10. DAISY_IN/SO control signal 10. DAISY_OUT/PS_OK #2 signal FUNCTIONS AND FEATURES 1. Parallel operation 2. Series operation 3. Daisy chain 4. Constant power control 5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms	ls	T)	Power supply CV/CC Monite Enable/Disab analog progra Enable/Disab Enable/Disab Two open dra Maximum Ic edge trigge By electrical v 4~5V=OK, 0V Possible. Up t Possible. Two Power suppli Limits the ou Emulates seri	or output mon or. Open colle ple analog pro amming controlle PS output lain programm ow level input twellous of didentical unit es can be contput unit of the power to the pow	itor. Open col ector. CC mod- ogramming co- ol monitor sig by electrical s by electrical s hable signals. ut voltage = hinimum. Tr, 6V/2~30V or of pedance)=Fai units in Maste ts. Refer to in: nected in Dai o a proggram	y: +/-0.5%. lector. Output e: On. CV mod ontrol by elect inal. Open colle ignal or dry co ignal or dry co Maximum vol asy. Minimu Tf=1us Maxim lry contact. I er/Slave mode. struction man sy chain to syr med value. Pro fall slew rate. F.	e: Off. Maxim rical signal or ector. Remote ontact. 0~0.6\ ontact. Remote tage 25V, Maxim high leve mum, Min de netro instrual. Refer to instrual. nchronize the ogramming vi mΩ. Programming Vi programming vi mΩ of the netro instrual.	um Voltage: 3: dry contact. R: On. Local: Off / or short, 2~3 e: 0~0.6V or sl kimum sink cu I input voltage lay between ruction manua ir turn-on and a the commun ting via the co	ov, Maximum Viemote: 0~0.4 Maximum Viewor open. Local: 2- rrent 100mA 12 pulses 1r Lucal: 2- rrent 100mA 12 pulses 1r Lucal: 2- communication 7999.9 V/mS	in Sink Current: 6V or short. Lo oltage: 30V, Ma Jser selectable ~30V or open. (Shunted by 2 laximum high ms. s or the front p on ports or the liec. or A/mSec	: 10mA. :cal: 2~30V or of aximum Sink Cu e logic. :7V zener) h level input :	pen. Irrent: 10mA = 5V positiv
1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog control 4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal 6. INTERLOCK (ILC) control 7. Programmed signals 8. TRIGGER IN / TRIGGER OUT signal 9. DAISY_IN/SO control signal 10. DAISY_OUT/PS_OK #2 signal FUNCTIONS AND FEATURES 1. Parallel operation 2. Series operation 3. Daisy chain 4. Constant power control 5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms PROGRAMMING AND READBAC RS232/485, Optional IEEE(*19)(**	IS K (USB, LAN, *20) Interfaces)		Power supply CV/CC Monite Enable/Disab analog progra Enable/Disab Enable/Disab Enable/Disab Maximum Ic edge trigge By electrical V 4~5V=OK, 0V Possible. Up t Possible. Two Power suppli Limits the ou Emulates seri Programmab communicati Profiles of up	or output mon or. Open colle ole analog pro amming controlle PS output ole O	itor. Open col sector. CC mode ogramming co ol monitor sig by electrical s by electrical s snable signals. ut voltage = ininimum. Tr, 65/2~30 V or d pedance)=Fai units in Maste ts. Refer to ins snected in Dai o a proggram. Resistance re e and Output e front panel can be stored	y: +/-0.5%. lector. Output e: On. CV mod ontrol by elect inal. Open colle ignal or dry co ignal or dry co Maximum vol asy. Minimu Tf=1us Maxim lry contact. I er/Slave mode. struction man sy chain to syr med value. Pro fall slew rate. F.	e: Off. Maxim rical signal or ector. Remote ontact. 0~0.6\ ontact. Remote tage 25V, Maxim high leve mum, Min de netro instrual. Refer to instrual. nchronize the ogramming vi mΩ. Programming Vi programming vi mΩ of the netro instrual.	um Voltage: 3: dry contact. R: On. Local: Off / or short, 2~3 e: 0~0.6V or sl kimum sink cu I input voltage lay between ruction manua ir turn-on and a the commun ting via the co	ov, Maximum Viemote: 0~0.4 Maximum Viewor open. Local: 2- rrent 100mA 12 pulses 1r Lucal: 2- rrent 100mA 12 pulses 1r Lucal: 2- communication 7999.9 V/mS	in Sink Current: 6V or short. Lo oltage: 30V, Ma Jser selectable ~30V or open. (Shunted by 2 laximum high ms. s or the front p on ports or the liec. or A/mSec	: 10mA. :cal: 2~30V or of aximum Sink Cu e logic. 7V zener) h level input : panel. front panel.	pen. Irrent: 10mA = 5V positiv
1. Power supply OK #1 signal 2. CV/CC signal 3. LOCAL/REMOTE Analog control 4. LOCAL/REMOTE Analog signal 5. ENABLE/DISABLE signal 6. INTERLOCK (ILC) control 7. Programmed signals 8. TRIGGER IN / TRIGGER OUT signal 10. DAISY_IN/SO control signal 10. DAISY_IN/SO control signal 10. DAISY_OUT/PS_OK #2 signal FUNCTIONS AND FEATURES 1. Parallel operation 2. Series operation 3. Daisy chain 4. Constant power control 5. Output resistance control 6. Slew rate control 7. Arbitrary waveforms PROGRAMMING AND READBAC RS232/485, Optional IEEE(*19)(* 1. Vout programming accuracy (*16)	K (USB, LAN,		Power supply CV/CC Monitit Enable/Disab analog progra Enable/Disab Enable/Disab Two open dra Maximum Ic edge trigge By electrical V 4~5V=OK, 0V Possible. Up t Possible. Two Power suppli Limits the ou Emulates seri Programmab communicati Profiles of up 10 0.05% of rate	or output mon or. Open colle ole analog pro amming controlle PS output ole of ole	itor. Open col sector. CC mode gramming co ol monitor sig by electrical s by electrical s anable signals. ut voltage = ininimum. Tr, 6V/2~30V or d pedance)=Fai units in Maste ts. Refer to ins nected in Dai o a proggram Resistance ra e and Output ne front panel can be stored 30 age	y: +/-0.5%. lector. Output e: On. CV mod ontrol by elect inal. Open colla ignal or dry cc ignal or dry cc ignal or dry cc ignal or dry cc Maximum vol 0.8V, Minimu Tf=1us Maxir dry contact. I er/Slave mode. struction man isy chain to syi med value. Prc inge: 1~1000r fall slew rate. F. I in 4 memory. 40	e: Off. Maxim rical signal or ector. Remote ontact. 0~0.6\ ontact. Remot tage 25V, Maxim high leve mum, Min de nector of the organization of the	um Voltage: 3: dry contact. R: On. Local: Off / or short, 2~3 e: 0~0.6V or sl kimum sink cu I input voltage elay betweer ruction manua ir turn-on and a the commun ming via the co rrange: 0.0001	ov, Maximum Viemote: 0~0.0 Maximum Viemote: 0~0.0 Maximum Viemote. Local: 2- rrent 100mA ge = 2.5V, Mn 2 pulses 1r Iturn-off. hication port: communication control of the	n Sink Current: 6V or short. Lo oltage: 30V, Ma Jser selectable ~30V or open. (Shunted by 2 laximum high ms. s or the front p on ports or the lec. or A/mSec	and the state of t	pen. Irrent: 10mA. = 5V positiv I via the front panel.
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GENESYS™ 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) 2.Rated output current (*2)		V A	10 340 (*3)	20 170	30 112	40 85	60 56	80 42	100 34	150 22.5	300 11.5	5.6
3.Rated output current (2)		W	340(3)	3400	3360	3400	3360	3360	3400	3375	3450	3360
INPUT CHARACTERISTICS		V	10	20	30	40	60	80		150		
1.Input voltage/freq. 3 phase, 3 wir	e + Ground (*4)		3-Phase, 200\ 3-Phase, 400\ 3-Phase, 480\	V models: 170 V models: 342 V models: 342	0~265Vac, 47~ 2~460Vac, 47~ 2~528Vac, 47~	63Hz (Covers 2 63Hz (Covers	200/230Vac) 380/400/415\ 380/400/415/4	Vac) 440/460/480Va	100 ac)	150	300	600
2. Maximum Input current at 100% load	8-Phase, 200V models: 8-Phase, 400V models: 8-Phase, 480V models: -Phase, 200V models:		12.5A @ 200V 6.5A @ 380Va 6.5A @ 380Va 21A @ 200Va	rac ac ac ac								
3.Power Factor (Typ)			For 1-Phase: (0.99 @ 200Va	c, rated outpu	it power.						
4.Efficiency (Typ) (*5) (*22) 5.Inrush current (*6)		% A	88 Less than 50A	89 A	89.5	90	90	90.5	90.5	90.5	90.5	90.5
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						1			
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						ollowing 30 mir					_	
6.Temperature stability 7. Warm-up drift								up. Constant lir		ip.		
8.Remote sense compensation/wir	e (*10)	V	Less than 0.0	2 or rated o	5	5 5	5	5 swing power of	n. 5	5	5	5
9.Up-prog. Response time (*11)	C (10)	mS	30	30	30	30	50	50	50	50	50	100
F	Full load (*11)	mS	50	50	80	80	80	100	100	100	100	200
11() I)own-prog response time.	No load (*12)	mS	450	600	800	900	1100	1300	2100	2000	3000	3000
11.Transient response time	,	mS						or a load changing 100V. 2mS, f				
12.Start up delay		Sec	Less than 6 Se					<u>.g</u> ,				
CONSTANT CURRENT MODE		V	10	20	30	40	60	80	100	150	300	600
1.Max. Line regulation (*7)			0.05% of rate			40] 00	00	100	130	300	000
2.Max. Load regulation (*13)			0.08% of rate									
3.Ripple r.m.s. @ rated voltage. 3-P	hase (*14)	mA	≤800	≤450	≤300	≤150	≤100	≤70	≤45	≤30	≤12	≤5
4.Ripple r.m.s. @ rated voltage. 1-Pl		mA	≤1200	≤600	≤300	≤300	≤200	≤100	≤60	≤40	≤12	≤8
5.Temperature coefficient		PPM/°C				•		ninutes warm-u	•			
6.Temperature stability				,				ıp. Constant lir		nperature		
7. Warm-up drift			10V~100V mc	odel: Less tha	ın +/-0.25% of	rated output o	current over 3	0 minutes follo	owing power			
			150V~600V: L	Less than +/-C	J.15% of rated	output curren	t over 30 mini	utes following	power on.			
ANALOG PROGRAMMING AND MO	ONITORING (ISOLATED	FROM										
1.Vout voltage programming								0.15% of rated				
2.lout voltage programming (*15)								0.4% of rated I			-	
3.Vout resistor programming								arity: +/-0.5% o				
4.lout resistor programming (*15)							racy and linea	arity: +/-0.5% o	rated lout.			
5.Output voltage monitor 6.Output current monitor (*15)					table. Accuracy table. Accuracy							
			0-54 01 0-10	, user sereet	abic. Accurac	y. 17 0.370.						
SIGNALS AND CONTROLS (ISOLAT	ED FROM THE OUTPU	•	<u> </u>					. 000 000 14		201/14	6: 1.6	. 10 1
Power supply OK #1 signal CV/CC signal								out Off: Off. Ma um Voltage: 30		-	_	rrent: 10mA.
3. LOCAL/REMOTE Analog control								dry contact. Re				opon
4. LOCAL/REMOTE Analog signal								: On. Local: Off.				
5. ENABLE/DISABLE signal			J. J					or short, 2~30				anche forma
6. INTERLOCK (ILC) control					,			e: 0~0.6V or sh				
7. Programmed signals								kimum sink cur			/V zener)	
8. TRIGGER IN / TRIGGER OUT signa	ls		Maximum lo	ow level inp	ut voltage =	0.8V.Minimu	ım hiah level	l input voltag	ge = 2.5V, Ma	aximum high		= 5V positiv
9. DAISY_IN/SO control signal					.6V/2~30V or d						-	
10. DAISY_OUT/PS_OK #2 signal					pedance)=Fail							
FUNCTIONS AND FEATURES												
1. Parallel operation	I		Possible IIn	to 4 identical	units in Masts	er/Slave mode	Refer to instr	ruction manua	ı			
2. Series operation			<u> </u>			struction man	-	action manua	1.			
3. Daisy chain								ir turn-on and	turn-off.			
4. Constant power control								a the commun		or the front p	anel.	
5. Output resistance control								ming via the co			_	
6. Slew rate control			Programmab	le Output ris	e and Output f	fall slew rate. F		range: 0.0001				ig via the
7. Arbitrary waveforms					he front panel can be stored	_	cells. Activatio	on by comman	nd via the com	nmunication p	orts or by th	e front panel.
PROGRAMMING AND READBAC RS232/485, Optional IEEE(*19)(٧	10	20	30	40	60	80	100	150	300	600
1.Vout programming accuracy (*16			0.05% of rate	d output volt	tage							
2.lout programming accuracy (*15						ated output cu	ırrent					
3.Vout programming resolution			0.002% of rat									
4.lout programming resolution				ed output cu								
	I											
5.Vout readback accuracy			0.05% of rate									
				ed output vol	ltage							



GENESYS[™] 5kW SERIES SPECIFICATIONS

	G	10-500	20-250	30-170	40-125	60-85	80-65	100-50	150-34	200-25	300-17	600-8.5
	V	10	20	30	40	60	80	100	150	200	300	600
	Α	500 (*3)	250	170	125	85	65	50	34	25	17	8.5
	W	5000	5000	5100	5000	5100	5200	5000	5100	5000	5100	5100
	٧	10	20	30	40	60	80	100	150	200	300	600
		3-Phase, 20	0V models: 1	70~265Vac,	47~63Hz (Co	vers 200/230	Vac)					
e + Ground (*4)								0/490\/26\				
3-Phase, 200V models:				142~328VaC,	4/~03FIZ (C0	vers 380/400	/415/440/40	0/480VaC)				
3-Phase, 400V models:		9.2A @ 380\	/ac									
3-Phase, 480V models:												
				91	91	91	91	91	91	91	92	92
	A	Less than 50)A									
	V	10	20	30	40	60	80	100	150	200	300	600
		0.01% of rat	ed output vo	oltage								
		0.01% of rat	ed output v	oltage +5mV								
9)	mV	75	75	75	75	75	80	90	120	200	200	480
	mV	8	10	12	12	12	15	15	20	60	60	100
	PPM/°C	50PPM/°C fr	rom rated or	itput voltage	following 3	0 minutes w	arm-up.					
								stant line. lo	ad & temp.			
									aa a tempi			
o (*10)								1	5	5	5	5
C (10)												100
											_	
					-			-				200
no load (*12)	mS											3000
	mS	Time for ou 10~100%, L	tput voltage ocal sense. L	to recover w ess than 1ms	ithin 0.5% of 5, for models	its rated ou up to and in	tput for a loa cluding 100\	ad change 10 V. 2mS, for m	~90% of rate odels above	ed output cu 100V.	rrent. Outpu	t set-point
	Sec											
	V	10	20	30	40	60	80	100	150	200	300	600
					10	00	- 00	100	130	200	300	300
TII- 1MII- (*14)				1	-150	-100	-70	-45	- 45	- 45	-15	-0
3⊓2~1IVI⊓Z ("14)									<u>\$43</u>	≤45	_ ≤15	≤8
	PPM/°C											
		0.01% of rat	ed lout over	8hrs. interva	l following 3	0 minutes w	arm-up. Con	stant line, lo	ad & temper	ature.		
									-			
		1300-20000	Less triair +/	7-0.1370 OI Tai	led output ci	inenii ovei 3	o minutes io	niowing pow	ei oii.			
DNITORING (ISOLATED	FROM T	HE OUTPUT	1									
		0~100%, 0~	5V or 0~10V	, user selecta	ble. Accurac	y and lineari	ty: +/-0.15%	of rated Vout				
		0~100%, 0~	5V or 0~10V	, user selecta	ble. Accurac	y and lineari	ty: +/-0.4% o	of rated lout.				
		0~100%, 0~	5/10Kohm fi	ull scale, user	r selectable.	Accuracy and	d linearity: +,	/-0.5% of rate	ed Vout.			
		0~100%, 0~	5/10Kohm fi	ull scale, user	selectable.	Accuracy and	l linearity: +,	/-0.5% of rate	ed lout.			
		0~5V or 0~1	0V, user sele	ctable. Accu	racy: +/-0.59	of rated Vo	ut.					
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K (USB, LAN, *20) Interfaces)		Enable/Disa Enable/Disa Enable/Disa Two open d Maximum positive ec By electrica 4~5V=OK, 0 Possible. Up Possible. Tw Power supp Limits the o Emulates se Programma communica Profiles of u 0.05% of rat 0.1% of actu 0.002% of ra 0.005% of ra	ramming cor ible PS output ible PS output rain program low level in ige trigger: I Voltage: 0~ IV (5000hm i ible to 4 identical ur cor identical ur liles can be cor utput power ries resistant ible Output ries ible Output vi to 100 step 20 ced output ver alal output cu ated output ver ated output ver	ntrol monitor ut by electric ut by electric ut by electric ut by electric ut by electric ut by electric ut by electric ut by electric unmable signa ut verlous m 0.6V/2~30V o mpedance)= al units in Ma units. Refer to onnected in r to a proggr cce. Resistanc ise and Outp r the front pa os can be sto 30 oltage urrent-0.2% o voltage current oltage	g control by control b	electrical signocollector. Reference of the second	nal or dry co mote: On. Lc conto: On. Lc conto: On. Lc conto: On. Conto: On. Conto conto: On. Conto conto conto: On. Conto conto conto: On. Conto co	ntact. Remotocal: Off. Maxiort, 2~30V or .6V or short. I sink current t voltage = . delay betw.	e: 0~0.6V or mum Voltag open. User s. ocal: 2~30V 100mA (Shunz 10.5V, Maximeen 2 pulse) more power off. on ports or till unication po. 9 V/mSec. oi the commu	short. Local: e: 30V, Maxin electable log or open. nted by 27V num high less 1ms. please cons ne front pan rts or the fro A/mSec. Pro nication por	mA. : 2~30V or op num Sink Cur gic. zener) evel input = sult with Fact el. ogramming v ts or by the fi	ory.
K (USB, LAN, *20) Interfaces)		Enable/Disa Enable/Disa Enable/Disa Two open d Maximum positive ec By electrica 4~5V=OK, 0 Possible. Up Possible. Tw Power supp Limits the o Emulates se Programma communica Profiles of u 0.05% of rat 0.1% of actu 0.002% of ra 0.005% of ra	ramming coi able PS output able PS output able PS output rain progran low level in doge trigger: I Voltage: V (5000hm i to to 4 identical voi dentical u diles can be c utput power ries resistan able Output r tition ports or p to 100 step 20 red output vu al output cu sted output v ated output sted ated output sted	ntrol monitor ut by electric ut by electric ut by electric ut by electric ut by electric ut by electric ut by electric ut by electric unmable signa ut verlous m 0.6V/2~30V o mpedance)= al units in Ma units. Refer to onnected in r to a proggr cce. Resistanc ise and Outp r the front pa os can be sto 30 oltage urrent-0.2% o voltage current oltage	g control by control b	electrical signocollector. Reference of the second	nal or dry co mote: On. Lc conto: On. Lc conto: On. Lc conto: On. Conto: On. Conto conto: On. Conto conto conto: On. Conto conto conto: On. Conto conto	ntact. Remotocal: Off. Maxiort, 2~30V or .6V or short. I sink current t voltage = . delay betw.	e: 0~0.6V or mum Voltag open. User s. ocal: 2~30V 100mA (Shunz 10.5V, Maximeen 2 pulse) more power off. on ports or till unication po. 9 V/mSec. oi the commu	short. Local: e: 30V, Maxin electable log or open. nted by 27V num high less 1ms. please cons ne front pan rts or the fro A/mSec. Pro nication por	mA. : 2~30V or op num Sink Cur gic. zener) evel input = sult with Fact el. ogramming v ts or by the fi	ory.
333		e + Ground (*4) 3-Phase, 200V models: 3-Phase, 480V models: 3-Phase, 480V models: 3-Phase, 480V models: 3-Phase, 480V models: 4 A V mV pPM/°C 6 (*10) W mS Full load (*11) mS No load (*12) mS mS Sec V 5Hz~1MHz (*14) mA PPM/°C 5Hz~1MHz (*14) mA PPM/°C 5NITORING (ISOLATED FROM TI	V 10 3-Phase, 200 3-Phase, 400 9-2A @ 380V 9-2A @	V 10 20	V 10 20 30	v 10 20 30 40 3-Phase, 200V models: 170~265Vac, 47~63Hz (Co 3-Phase, 400V models: 342~460Vac, 47~63Hz (Co 3-Phase, 400V models: 342~460Vac, 47~63Hz (Co 3-Phase, 400V models: 342~528Vac, 47~63Hz (Co 3-Phase, 480V models: 342~528Vac, 47~63Hz (Co 3-Phase, 480V models: 342~528Vac, 47~63Hz (Co 3-Phase, 480V models: 342~528Vac, 47~63Hz (Co 3-Phase, 480V models: 342~528Vac, 47~63Hz (Co 3-Phase, 480V models: 342~528Vac, 47~63Hz (Co 9.2 A @ 380Vac 9.2 A @ 380Vac 9.2 A @ 380Vac 9.2 A @ 380Vac 10.9 Mg	V	e + Ground (*4) e + Ground (*4) e + Ground (*4) 3-Phase, 200V models: 170-265Vac, 47-63Hz (Covers 200/230Vac) 3-Phase, 200V models: 3-Phase, 200V mode	V 10 20 30 40 60 80 100	V 10 20 30 40 60 80 100 150	V 10 20 30 40 60 80 100 150 200	V 10



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												imit to CV mo	
2.Over-voltage protection (OVP)			Output shu	t-down. Rese	t by AC inpu	t recycle in a	utostart mod	de, by OUTPI	JT button, by	rear panel o	or by commu	nication.	
3.Over -voltage programming rar	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 acc	curacy		+/-1% of rat	ed output vo	ltage		•			•			
5.Output under voltage limit (UVI	L)		Prevents fro	om adjusting	Vout below	limit. Does n	ot apply in a	nalog progra	mming. Pres	et by front p	anel or comr	nunication po	ort.
6.Over temperature protection			Shuts down	the output.	Auto recover	ry by autosta	art mode.						
7. Output under voltage limit (UV	L)		Prevents ac	ljustment of	Vout below li	imit.							
8. Output under voltage protection	on (UVP)		Prevents ac mode, by P	ljustment of ower Switch,	Vout below li by OUTPUT I	imit. P.S outp button, by re	out turns Off ear panel or b	during unde y communic	r voltage con ation.	ndition. Reset	t by AC input	recycle in aut	tostart
FRONT PANEL													
1.Control functions			Multiple op	tions with 2	Encoders							-	
					nanual adjus	t							
				VP manual a		-	-						
					VP, UVL,UVP,	Foldback, C	CL. ENA. ILC						
							E,RS232,RS48	5.USB or Op	tional comm	unication int	terface.		
				OFF. Front P				-,					
						n of Baud Ra	te, Address, I	P and comm	unication lar	nauaae.			
							istive progra				1		
							Current Mon			- <u>-</u>			
2.Display							ltage +/-1 co		,,,,				
Zio ispilay							ent +/-1 coun					-	
3.Front Panel Buttons Indications	·						ATION, PROT		JEIGURATION	I. SYSTEM. SE	OUFNCER		
4. Front Panel Display Indications			Voltage, Cu	rrent, Power	CV, CC, CP, E	xternal Volta		Current, Add	dress, LFP, Au			ick V/I, Remot	e
ENVIRONMENTAL CONDITIONS													
1.Operating temperature			0~50°C, 100	0% load.									
2.Storage temperature			-30~85°C	7010441									
				17									
3.Operating humidity		%		(no conden									
4.Storage humidity		%		(no condens									
5.Altitude (*17)			Operating:	10000ft (300	0m), output o	current derat	ing 2%/100m	or Ta derati	ng 1°C/100m	above 2000i	m. Non opera	ting: 40000ft	(12000m).
MECHANICAL													
1.Cooling			Forced air c	oolina by int	ernal fans. A	ir flow direct	ion: from Fro	nt panel to	ower supply	rear			
2.Weight		kg		W - Less than				5kW - Less					
						t huchare a	nd busbars		a.ı 7.3kg.				
3.Dimensions (WxHxD)		mm	W: 423, H:	43.6, D: 55	3.5 (Includir	ng busbars	and busbar	s cover) (Re	fer to Outlir	ne drawing)).		
4.Vibration							ion Annex C -	∠.1.3.1					
5.Shock			Less than 2	0G, half sine,	11mSec. Uni	t is unpacked	d.						
SAFETY/EMC													
1. Applicable standards:	Safety		UL60950-1,	CSA22.2 No.	60950-1, IEC	50950-1, EN6	0950-1.						
1.1. Interface classification							(sense) and ,J nazardous, J1				on options) a	re SELV	
			Vout ≤40V	Models: Inn	ut - Output	(SELV): 424	2VDC 1min,	Input - Gro	und: 2835V	DC 1min.			
1.2 Withstand voltage			60V≤Vout≤	100V Mode	ls: Input - O	utput: 4242\		nput - SELV			it - SELV: 85	0VDC 1min,	
			100 <vout≤ Output - G</vout≤ 	600V Mode round: 2500	ls: Input - O VDC 1min, I	utput: 4242' Input - Grou	VDC 1min, lı ınd: 2835VD	nput - SELV C 1min.	: 4242VDC	1min, Outpu	ıt - SELV: 15	00VDC 1min	,
1.3 Insulation resistance			100Mohm a	at 25°C, 70%l	RH.								
2.Conducted emmision			IEC/EN6120	4-3 Industria	l environme	nt, Annex H t	table H.1 , FC	C Part 15-A, \	/CCI-A.				
3.Radiated emission			IEC/EN6120	4-3 Industria	l environme	nt, Annex H t	table H.3 and	H4, FCC Par	t 15-A, VCCI-	A			
4. EMC compliance	EMC(*18)				04-3 Industri								
e comphanec	1(,		ccorumg	- 120, 211012	Juustii								

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

NOTES:

- NOTES:

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

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

 * 3: Derate \$A1^*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 0.2m5ec.

 * 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 Sanes.

 * 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.

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

 * 12: From 10W 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 400A up to 40°C and 450A up to 30°C.

 * 21: For 10V model only: Max. output current for using IEEE is 400A up to 40°C and 450A up to 30°C.

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





GENESYS[™] **GSP10kW SERIES SPECIFICATIONS**

1.Rated output voltage(*1)		GSP	10-1000	20-500	30-340	40-250	60-170	80-130	100-100	150-68	200-50	300-34	600-17
2 Rated output current (*2)		V A	10 1000 (*3)	20 500	30 340	40 250	60 170	80 130	100	150 68	200 50	300 34	600 17
2.Rated output current (*2) 3.Rated output power		kW	1000 (*3)	10	10.2	250 10	10.2	10.4	100	10.2	10	10.2	10.2
·		V				1			1		1	1	1
INPUT CHARACTERISTICS		V	10	20 0\/ madals: 1	30 70~265Vac, 4	40	60	(26)	100	150	200	300	600
1.Input voltage/freg. 3 phase, 3 w	vire + Ground (*4)				70~265 vac, 4 42~460Vac, 4								
i.iiiput voitage/iieq. 3 piiase, 3 v	viie + Ground (4)				42~528Vac, 4				/480Vac)				
	3-Phase, 200V models:		35A @ 200V					, ,	,,				
2. Maximum Input current at 100% load	3-Phase, 400V models:		18.4A @ 380	Vac									
100% load	3-Phase, 480V models:		18.4A @ 380	Vac									
3.Power Factor (Typ)			0.94 @ 200/	380Vac, rate	d output pow	/er.							
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)			0.01% of rat	ed output vo	oltage								
2.Max. Load regulation (*8)				ed output vo							1	1	
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					tput voltage					10.			
6.Temperature stability					8hrs interva					d & temp.			
7. Warm-up drift 8.Remote sense compensation/v	viro (*10)	 V	Less than 0.		output volta	ige+2mV ove	r 30 minutes 5	following p	ower on.	5	5	5	5
9.Up-prog. Response time (*11)	viie (IU)	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 our	tput voltage	to recover w	ithin 0.5% of	its rated out	out for a load	change 10~	90% of rated	d output curr		
'			10~100%, Lo	ocal sense. L	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 S	Sec									
CONSTANT CURRENT MODE													
1.Max. Line regulation (*7)			0.05% of rat	ed output cı	urrent.								
2.Max. Load regulation (*13)			0.08% of rat	ed output cu	urrent.								
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		from rated of								
			150V~600V		from rated or					-1.0.4			
6.Temperature stability					8hrs. interva						ture.		
7. Warm-up drift					nan +/-0.25% /-0.15% of rat								
					-0.1370 01 140	eu output co	ilelit ovel 30	illillutes loi	lowing powe	1 011.			
ANALOG PROGRAMMING AND I	MONITORING (ISOLATED						111						
1.Vout voltage programming	-\				user selectal								
2.lout voltage programming (*15 3.Vout resistor programming	0)				, user selectal ull scale, user					4 Vout			
4.lout resistor programming (*15	-\					selectable. F							
inout resistor programming (is						selectable A	ccuracy and	linearity: ±/-				,	
	o)		_			selectable. F				i lout.			
5.Output voltage monitor 6.Output current monitor (*15)	5)		0~5V or 0~1	0V, user sele	ctable. Accur	racy: +/-0.5%	. Of rated Vo	ut.		i lout.			
5.Output voltage monitor 6.Output current monitor (*15)			0~5V or 0~1	0V, user sele	ctable. Accui	racy: +/-0.5%	. Of rated Vo	ut.		iout.			
5.Output voltage monitor 6.Output current monitor (*15) SIGNALS AND CONTROLS (ISOL		 -)	0~5V or 0~1 0~5V or 0~1	0V, user sele 0V, user sele	ectable. Accui ectable. Accui	racy: +/-0.5% racy: +/-0.5%	. Of rated Vo	ut.			N Maximum	Sink Current	t: 10mA
5.Output voltage monitor 6.Output current monitor (*15) SIGNALS AND CONTROLS (ISOL 1. Power supply OK #1 signal		 -)	0~5V or 0~1 0~5V or 0~1 Power supp	0V, user sele 0V, user sele ly output mo	ectable. Accur ectable. Accur onitor. Open	racy: +/-0.5% racy: +/-0.5% collector. Ou	Of rated Vo	ut. it. Output Off:	Off. Maximur	n Voltage: 30			t: 10mA.
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	 -)	0~5V or 0~1 0~5V or 0~1 Power supp CV/CC Moni	0V, user sele 0V, user sele ly output mo tor. Open co	ectable. Accur ectable. Accur conitor. Open enitor. CC m	racy: +/-0.5% racy: +/-0.5% collector. Ou ode: On. CV i	o. Of rated Voi o. Of rated lou tput On: On. mode: Off. Ma	ut. it. Output Off: aximum Volt	Off. Maximur age: 30V, Ma	m Voltage: 30 ximum Sink (Current: 10m	Α.	
5.Output voltage monitor 6.Output current monitor (*15) SIGNALS AND CONTROLS (ISOL 1. Power supply OK #1 signal	ATED FROM THE OUTPUT	 T)	0~5V or 0~1 0~5V or 0~1 Power supp CV/CC Moni Enable/Disa	0V, user sele 0V, user sele ly output mo tor. Open co ble analog p	ectable. Accur ectable. Accur onitor. Open	racy: +/-0.5% racy: +/-0.5% collector. Ou ode: On. CV I	tput On: On. mode: Off. Malectrical sign	ut. it. Output Off: aximum Volt al or dry con	Off. Maximur age: 30V, Ma tact. Remote	m Voltage: 30 ximum Sink 0 :: 0~0.6V or s	Current: 10m hort. Local: 2	A. ~30V or ope	n.
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 control	ATED FROM THE OUTPUT	 	0~5V or 0~1 0~5V or 0~1 Power supp CV/CC Moni Enable/Disa analog prog	0V, user sele 0V, user sele ly output mo tor. Open co ble analog p ramming co	ectable. Accur ectable. Accur onitor. Open ollector. CC m orogramming	racy: +/-0.5% racy: +/-0.5% collector. Ou ode: On. CV I control by e	tput On: On. mode: Off. Malectrical sign	out. Output Off: aximum Volt al or dry con mote: On. Lc	Off. Maximur age: 30V, Ma tact. Remote ical: Off. Maxi	m Voltage: 30 ximum Sink 0 :: 0~0.6V or s mum Voltag	Current: 10m hort. Local: 2 e: 30V, Maxim	A. ~30V or openum Sink Curi	n.
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	ATED FROM THE OUTPUT	 	0~5V or 0~1 0~5V or 0~1 Power supp CV/CC Moni Enable/Disa analog prog Enable/Disa	0V, user sele 0V, user sele ly output mo tor. Open co ble analog p ramming co ble PS output	ectable. Accur ectable. Accur onitor. Open dillector. CC mo orogramming ntrol monitor	racy: +/-0.5% racy: +/-0.5% collector. Ou ode: On. CV i control by e signal. Oper	tput On: Of. Mailectrical sign collector. Re	Output Off: aximum Volt al or dry con mote: On. Lc	Off. Maximur age: 30V, Ma tact. Remote ical: Off. Maxi rt, 2~30V or c	n Voltage: 30 ximum Sink 0 :: 0~0.6V or s mum Voltag pen. User se	Current: 10m hort. Local: 2 e: 30V, Maxim lectable logi	A. ~30V or openum Sink Curi	n.
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TDK·Lambda -

OUTPUT RATING

GENESYS™ **GSP15kW SERIES SPECIFICATIONS**

1.Rated output voltage(*1) 2.Rated output current (*2) 3.Rated output power													
		V	10	20	30	40	60	80	100	150	200	300	600
3.Rated output power		Α	1500 (*3)	750	510	375	255	195	150	102	75	51	25.5
		kW	15	15	15.3	15	15.3	15.6	15	15.3	15	15.3	15.3
INPUT CHARACTERISTICS		V	10	20	30	40	60	80	100	150	200	300	600
INPUT CHARACTERISTICS		V					rers 200/230\		100	150	200	300	000
1													
1.Input voltage/freq. 3 phase, 3 v	wire + Ground (*4)						vers 380/400						
	T				42~528Vac, 4	7~63Hz (Co\	ers 380/400/	415/440/460)/480Vac)				
2. Maximum Input current at	3-Phase, 200V models:	ļ	52.5A @ 200										
100% load	3-Phase, 400V models:		27.6A @ 380	Vac									
100701000	3-Phase, 480V models:		27.6A @ 380	Vac									
3.Power Factor (Typ)			0.94 @ 200/3	380Vac, rate	d output pow	/er.							
4.Efficiency (Typ) (*5) (*22)		%	89 (*21)	90	91	91	91	91	91	91	91	92	92
5.Inrush current (*6)		Α	Less than 15										
6.AC line phase imbalance		%	< 5%	071									
o.//c line phase imbalance		/0	1 370										
CONSTANT VOLTAGE MODE		V	10	20	30	40	60	80	100	150	200	300	600
1.Max. Line regulation (*7)			0.01% of rate	ed output vo	ltage								
2.Max. Load regulation (*8)			0.01% of rate										
													1
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		PPM/°C	50PPM/°C fr	om rated ou	tnut voltage	following 30	0 minutes wa	rm-un					
<u>_</u>									tant line lea	d 0. tomp			
6.Temperature stability									stant line, loa	a & temp.			
7. Warm-up drift			Less than 0.0	05% of rated	output volta	ige+2mV ove	er 30 minutes	following po	ower on.				
8.Remote sense compensation/	wire (*10)	V	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
2.0p prog. nesponse time (*11)	F., 0.1 1 (2.2.2)												_
10.Down-prog.response time:	Full load (*11)	mS	50	50	80	80	80	100	100	100	100	100	200
	No load (*12)	mS	300	600	800	900	1000	1200	1900	2000	2500	3000	3000
11 Transient was a constitute			Time for out	put 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:
11.Transient response time		mS	10~100%, Lo	ocal sense. L	ess than 1mS	, for models	up to and inc	luding 100V	. 2mS, for mo	dels above 1	00V.	rent. Output	
12Start up delay		Sec	Less than 7 S		-								
			Less man / 3										
13.Hold-up time	-												
CONSTANT CURRENT MODE		V	10	20	30	40	60	80	100	150	200	300	600
1.Max. Line regulation (*7)			-										
			0.05% of rat										
2.Max. Load regulation (*13)			0.08% of rat	ed output cı	ırrent.								
3.Ripple r.m.s. @ 10% rated volta	age B.W 5Hz~1MHz. (*14)	mA	2000	1200	600	300	180	100	70	45	45	15	10
4.Ripple r.m.s. @ 100% rated voltag	ie BW 5Hz~1MHz (TA 25°C)	mA	1200	700	300	150	90	60	35	23	23	7.5	6
inappie iniis. @ 100701atea voitag	JC. D. W 3112 11W112. (17123 C)	,								23	23	1.5	
5.Temperature coefficient		PPM/°C	10V~100V				nt, following						
			150V~600V	70PPM/°C	from rated ou	utput curren	t, following 3	0 minutes w	arm-up.				
6.Temperature stability			0.01% of rate	ed lout over	8hrs. interva	following 3	0 minutes wa	ırm-up. Cons	tant line, loa	d & tempera	ture.		
			10V~100V m	ndel· Less th	nan ±/-0 25%	of rated out	nut current o	ver 30 minut	tes following	nower on			
7. Warm-up drift									lowing powe				
			1300~0000.	Less triair +/	-0.13% 011at	eu output cu	inenii over 30	illillutes for	lowing powe	1011.			
ANALOG PROGRAMMING AND	MONITORING (ISOLATED	FROMT	HE OUTPUT)										
1.Vout voltage programming					us or solo stal	ala Assurasi	, and linearity	/ 0.1E0/- 0	f rated Vout.				
_ , , , ,													
2.lout voltage programming (*1				5V or 0~10V.					rated lout.				
	15)						and linearit						
3.Vout resistor programming	15)								0.5% of rated	d Vout.			
1 3 3			0~100%, 0~	5/10Kohm fu	ıll scale, user	selectable. <i>F</i>	Accuracy and	linearity: +/-	0.5% of rated				
4.lout resistor programming (*1			0~100%, 0~ 0~100%, 0~	5/10Kohm fu 5/10Kohm fu	ıll scale, user ıll scale, user	selectable. <i>F</i> selectable. <i>F</i>	Accuracy and Accuracy and	linearity: +/- linearity: +/-					
4.lout resistor programming (*1 5.Output voltage monitor (*23)	5)		0~100%, 0~ 0~100%, 0~ 0~5V or 0~1	5/10Kohm fu 5/10Kohm fu 0V, user sele	ıll scale, user ıll scale, user ctable. Accui	selectable. <i>F</i> selectable. <i>F</i> racy: +/-0.5%	Accuracy and Accuracy and of rated Vou	linearity: +/- linearity: +/- it.	0.5% of rated				
4.lout resistor programming (*1	5)		0~100%, 0~ 0~100%, 0~ 0~5V or 0~1	5/10Kohm fu 5/10Kohm fu 0V, user sele	ıll scale, user ıll scale, user ctable. Accui	selectable. <i>F</i> selectable. <i>F</i> racy: +/-0.5%	Accuracy and Accuracy and	linearity: +/- linearity: +/- it.	0.5% of rated				
4.lout resistor programming (*1 5.Output voltage monitor (*23) 6.Output current monitor (*15) (5) (*23)		0~100%, 0~ 0~100%, 0~ 0~5V or 0~1	5/10Kohm fu 5/10Kohm fu 0V, user sele	ıll scale, user ıll scale, user ctable. Accui	selectable. <i>F</i> selectable. <i>F</i> racy: +/-0.5%	Accuracy and Accuracy and of rated Vou	linearity: +/- linearity: +/- it.	0.5% of rated				
4.lout resistor programming (*1 5.Output voltage monitor (*23) 6.Output current monitor (*15) (SIGNALS AND CONTROLS (ISOL	5) (*23)	 	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	ıll scale, user ıll scale, user ctable. Accuı ctable. Accuı	selectable. A selectable. A racy: +/-0.5% racy: +/-0.5%	Accuracy and Accuracy and o of rated Vou o. of rated lou	linearity: +/- linearity: +/- it.	0.5% of rated	d lout.			
4. Lout resistor programming (*1 5. Output voltage monitor (*23) 6. Output current monitor (*15) (SIGNALS AND CONTROLS (ISOL 1. Power supply OK signal	5) (*23)		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, user ull scale, user ctable. Accur ctable. Accur onitor. Open	selectable. A selectable. A racy: +/-0.5% racy: +/-0.5% collector. Ou	Accuracy and Accuracy and of rated Vou o. of rated lou tput On: On.	linearity: +/- linearity: +/- it. Output Off:	0.5% of rated 0.5% of rated Off. Maximur	d lout. n Voltage: 30		n Sink Curren	t: 10mA.
4.lout resistor programming (*1 5.Output voltage monitor (*23) 6.Output current monitor (*15) (SIGNALS AND CONTROLS (ISOL	5) (*23)	 	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, user ull scale, user ctable. Accur ctable. Accur onitor. Open	selectable. A selectable. A racy: +/-0.5% racy: +/-0.5% collector. Ou	Accuracy and Accuracy and of rated Vou o. of rated lou tput On: On.	linearity: +/- linearity: +/- it. Output Off:	0.5% of rated	d lout. n Voltage: 30			t: 10mA.
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4. Lout resistor programming (*1 5. Output voltage monitor (*23) 6. Output current monitor (*15) (SIGNALS AND CONTROLS (ISOL 1. Power supply OK signal 2. CV/CC signal 3. LOCAL/REMOTE Analog contr 4. LOCAL/REMOTE Analog signa	5) (*23) ATED FROM THE OUTPU	 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 ble analog p ramming co	ull scale, user ull scale, user ctable. Accur ctable. Accur onitor. Open llector. CC morogramming introl monitor	selectable. A selectable. A racy: +/-0.5% racy: +/-0.5% collector. Ou ode: On. CV I control by e signal. Oper	Accuracy and Accuracy and to of rated Vou to. of rated lou tput On: On. mode: Off. Mi electrical sign to collector. Re	linearity: +/- linearity: +/- it. Output Off: aximum Volt ial or dry con	O.5% of rated O.5% of rated Off. Maximur age: 30V, Ma: stact. Remote	m Voltage: 30 ximum Sink 0 :: 0~0.6V or s mum Voltage	Current: 10m hort. Local: 2 e: 30V, Maxin	nA. 2~30V or ope num Sink Cur	n.
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GSP 10-1500 20-750 30-510 40-375 60-255 80-195 100-150 150-102 200-75 300-51 600-25.5



GENESYS™ GSP10kW/15kW SERIES SPECIFICATIONS

PROTECTIVE FUNCTIONS		V	10	20	30	40	60	80	100	150	200	300	600
												Limit to CV m	
1.Foldback protection			User preset	able. Reset b	y AC input re	cycle in auto	start mode, k	y Power Sw	itch, by OUT	PUT button,	by rear pane	l or by comm	
2.Over-voltage protection (OV							utostart mod						
3.Over -voltage programming		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 (alog progra	imming. Pres	set by front p	anel or com	munication p	ort.
6.Over temperature protection					Auto recover		rt mode.						
7. Output under voltage limit (UVL)		Prevents ac	justment of	Vout below li	mit.							
8. Output under voltage prote	ction (UVP)		Prevents ad mode, by P	justment of ower Switch,	Vout below li by OUTPUT b	mit. P.S outp outton, by re	ut turns Off o ar panel or by	during unde y communic	r voltage cor ation.	ndition. Rese	t by AC input	t recycle in au	tostart
FRONT PANEL													
1.Control functions				tions with 2									
					nanual adjust	t							
				VP manual a									
					VP, UVL,UVP,								
						n of LAN,IEEE	,RS232,RS48	5,USB or Op	tional comm	unication int	terface.		
				OFF. Front P									
							te, Address, If						
							stive progran			rogramming			
							Current Moni		V.				
2.Display			Vout: 4 digi	ts, accuracy:	0.05% of rate	d output vol	tage +/-1 coι	ınt.					
							ent +/-1 coun						
3. Front Panel Buttons Indication	ons		OUTPUT ON	I, ALARM, PR	EVIEW, FINE,	COMMUNIC	ATION, PROTI	ECTION,CON	IFIGURATION	N, SYSTEM, SE	EQUENCER.		
4. Front Panel Display Indication	ons						ge, External (on, Trigger, L			itostart, Safe	tstart, Foldb	ack V/I, Remo	te
ENVIRONMENTAL CONDITION	NS												
1.Operating temperature			0~50°C, 100)% load									
2.Storage temperature			-30~85°C	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,									
				/									
3.Operating humidity		%		(no condens									
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/100m	above 2000	m. Non oper	ating: 40000f	t (12000m).
MECHANICAL													
1.Cooling			Forced air c	ooling by int	ernal fans. Ai	r flow direct	ion: from Fro	nt panel to p	ower supply	/ rear			
2.Weight	GSP 10kW	kg	Less than 15	5.5kg.									
3.Dimensions (WxHxD)	GSP 10kW	mm	W: 423, H: 8 W: 423, H: 8	8, D: 441.5 (V 8, D: 640 (Inc	Vithout busba	ars and busba ers and busba	ers cover), ers cover, and s	strain relief)	(Refer to Out	line drawing).			
2.Weight	GSP 15kW	kg	Less than 2	3.5kg.									
3.Dimensions (WxHxD)	GSP 15kW	mm					ousbars cover		elief) (Refer t	o Outline dra	awing).		
4.Vibration			MIL-810G, n	nethod 514.6	, Procedure I	, test conditi	on Annex C -	2.1.3.1					
5.Shock			Less than 2	OG, half sine.	11mSec. Unit	is unpacked	l.						
**				,									
C. EEE, (E. L.C.													
SAFETY/EMC 1. Applicable standards:	Safety		UL60950-1,	CSA22.2 No.	60950-1, IEC6	60950-1, EN6	0950-1.						
SAFETY/EMC 1.Applicable standards: 1.1. Interface classification	Safety		Vout ≤40V I	Models: Outp	out, J1,J2,J3,J4	4,J5,J6,J7,J8 (0950-1. (sense) and ,J azardous, J1,	9 (communi J2,J3,J4,J5,J	cation optio 6,J7 and J9 (o	ns) are SELV.	on options) a	are SELV	
1. Applicable standards:	Safety		Vout ≤40V I 60≤ Vout≤ Vout ≤40V 60V≤Vout≤ Output - G	Models: Outp 600V Model Models: Inp :100V Mode round: 1500	out, J1,J2,J3,J4 s: Output, J8 out - Output (ls: Input - Ou VDC 1min, I	4,J5,J6,J7,J8 ((sense) are h (SELV): 424 utput: 4242\ nput - Grou utput: 4242\	sense) and ,J azardous, J1, 2VDC 1min, /DC 1min, Ir nd: 2835VD0	J2,J3,J4,J5,J Input - Gro Iput - SELV C 1min.	6,J7 and J9 (o und: 2835V : 4242VDC	ommunicati DC 1min. 1min, Outpu	it - SELV: 85	are SELV 50VDC 1min, 500VDC 1mir	
1.Applicable standards: 1.1. Interface classification 1.2 Withstand voltage	Safety		Vout ≤40V I 60≤ Vout≤ Vout ≤40V 60V≤Vout≤ Output - G 100 <vout≤ Output - G</vout≤ 	Models: Outp 600V Model Models: Inp :100V Mode round: 1500 :600V Mode round: 2500	out, J1,J2,J3,J4 ss: Output, J8 out - Output (ls: Input - Output (VDC 1min, I vDC 1min, I	4,J5,J6,J7,J8 ((sense) are h (SELV): 4242\ utput: 4242\ nput - Grou utput: 4242\ nput - Grou	sense) and ,J azardous, J1, 2VDC 1min, /DC 1min, Ir nd: 2835VD0 /DC 1min, Ir nd: 2835VD0	J2,J3,J4,J5,J0 Input - Gro Iput - SELV C 1min. Iput - SELV C 1min.	6,J7 and J9 (c und: 2835V : 4242VDC : 4242VDC	DC 1min. 1min, Outpu 1min, Outpu	rt - SELV: 85 ut - SELV: 15	50VDC 1min,	
1.Applicable standards: 1.1. Interface classification 1.2 Withstand voltage 1.3 Insulation resistance	Safety		Vout ≤40V I 60≤ Vout≤ Vout ≤40V 60V≤Vout≤ Output - G 100 <vout≤ Output - G GSP10kW -</vout≤ 	Models: Outp 600V Model Models: Inp :100V Mode round: 1500 600V Mode round: 2500 60 Mohm at:	out, J1,J2,J3,J4, s: Output, J8 out - Output (ls: Input - Ou VDC 1min, I vDC 1min, I vDC 1min, I	4,J5,J6,J7,J8 ((sense) are h (SELV): 424 utput: 4242\ nput - Grou utput: 4242\ nput - Grou	sense) and ,J, azardous, J1, 2VDC 1min, /DC 1min, Ir nd: 2835VD0 /DC 1min, Ir nd: 2835VD0	J2,J3,J4,J5,Jo Input - Gro Iput - SELV C 1min. Iput - SELV C 1min. GSP15kW -	6,J7 and J9 (c und: 2835V : 4242VDC : 4242VDC	ommunicati DC 1min. 1min, Outpu	rt - SELV: 85 ut - SELV: 15	50VDC 1min,	
1.Applicable standards: 1.1. Interface classification 1.2 Withstand voltage 1.3 Insulation resistance 2.Conducted emmision	Safety		Vout ≤40V 60≤ Vout≤ Vout ≤40V 60V≤Vout≤ Output - G 100 <vout≤ -="" en6120<="" g="" gsp10kw="" iec="" output="" td="" =""><td>Models: Outp 600V Model Models: Inp 100V Mode round: 1500 600V Mode round: 2500 60 Mohm at: 4-3 Industria</td><td>out, J1,J2,J3,J4 ss: Output, J8 out - Output (ls: Input - Oi VDC 1min, I ls: Input - Oi VDC 1min, I 25°C, 70%RH Il environmer</td><td>4,J5,J6,J7,J8 ((sense) are h (SELV): 424 utput: 4242\ nput - Grou utput: 4242\ nput - Grou</td><td>sense) and , J azardous, J1, 2VDC 1min, /DC 1min, Ir nd: 2835VD0 /DC 1min, Ir nd: 2835VD0</td><td>J2,J3,J4,J5,Jo Input - Gro iput - SELV C 1min. iput - SELV C 1min. GSP15kW - Part 15-A, V</td><td>6,J7 and J9 (c und: 2835V : 4242VDC : 4242VDC 90 Mohm at /CCI-A.</td><td>communicati DC 1min. 1min, Outpu 1min, Outpu 25°C, 70%RH</td><td>rt - SELV: 85 ut - SELV: 15</td><td>50VDC 1min,</td><td></td></vout≤>	Models: Outp 600V Model Models: Inp 100V Mode round: 1500 600V Mode round: 2500 60 Mohm at: 4-3 Industria	out, J1,J2,J3,J4 ss: Output, J8 out - Output (ls: Input - Oi VDC 1min, I ls: Input - Oi VDC 1min, I 25°C, 70%RH Il environmer	4,J5,J6,J7,J8 ((sense) are h (SELV): 424 utput: 4242\ nput - Grou utput: 4242\ nput - Grou	sense) and , J azardous, J1, 2VDC 1min, /DC 1min, Ir nd: 2835VD0 /DC 1min, Ir nd: 2835VD0	J2,J3,J4,J5,Jo Input - Gro iput - SELV C 1min. iput - SELV C 1min. GSP15kW - Part 15-A, V	6,J7 and J9 (c und: 2835V : 4242VDC : 4242VDC 90 Mohm at /CCI-A.	communicati DC 1min. 1min, Outpu 1min, Outpu 25°C, 70%RH	rt - SELV: 85 ut - SELV: 15	50VDC 1min,	
1.Applicable standards: 1.1. Interface classification 1.2 Withstand voltage 1.3 Insulation resistance	Safety EMC(*18)		Vout ≤40V 60≤ Vout≤ Vout ≤40V 60V≤Vout≤ Output - G 100 <vout≤ -="" en6120="" g="" gsp10kw="" iec="" output="" td="" ="" <=""><td>Models: Outp 600V Model Models: Inp 100V Mode round: 1500 600V Mode round: 2500 60 Mohm at: 4-3 Industria 4-3 Industria</td><td>out, J1,J2,J3,J4 ss: Output, J8 out - Output (ls: Input - Oi VDC 1min, I ls: Input - Oi VDC 1min, I 25°C, 70%RH Il environmer</td><td>4,J5,J6,J7,J8 ((sense) are h (SELV): 424 utput: 4242\ nput - Grou utput: 4242\ nput - Grou nput - Grou nput - Grou nnout - Grou nt, Annex H t</td><td>sense) and , J azardous, J1, 2VDC 1min, Ir /DC 1min, Ir nd: 2835VD /DC 1min, Ir nd: 2835VD able H.1 , FCC able H.3 and</td><td>J2,J3,J4,J5,Jo Input - Gro iput - SELV C 1min. iput - SELV C 1min. GSP15kW - Part 15-A, V</td><td>6,J7 and J9 (c und: 2835V : 4242VDC : 4242VDC 90 Mohm at /CCI-A.</td><td>communicati DC 1min. 1min, Outpu 1min, Outpu 25°C, 70%RH</td><td>rt - SELV: 85 ut - SELV: 15</td><td>50VDC 1min,</td><td></td></vout≤>	Models: Outp 600V Model Models: Inp 100V Mode round: 1500 600V Mode round: 2500 60 Mohm at: 4-3 Industria 4-3 Industria	out, J1,J2,J3,J4 ss: Output, J8 out - Output (ls: Input - Oi VDC 1min, I ls: Input - Oi VDC 1min, I 25°C, 70%RH Il environmer	4,J5,J6,J7,J8 ((sense) are h (SELV): 424 utput: 4242\ nput - Grou utput: 4242\ nput - Grou nput - Grou nput - Grou nnout - Grou nt, Annex H t	sense) and , J azardous, J1, 2VDC 1min, Ir /DC 1min, Ir nd: 2835VD /DC 1min, Ir nd: 2835VD able H.1 , FCC able H.3 and	J2,J3,J4,J5,Jo Input - Gro iput - SELV C 1min. iput - SELV C 1min. GSP15kW - Part 15-A, V	6,J7 and J9 (c und: 2835V : 4242VDC : 4242VDC 90 Mohm at /CCI-A.	communicati DC 1min. 1min, Outpu 1min, Outpu 25°C, 70%RH	rt - SELV: 85 ut - SELV: 15	50VDC 1min,	

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 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.

- *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 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.

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

 *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:GSP10kW For 10V model only: Max. output current for using IEEE is 800A up to 40°C and 900A up to 30°C.

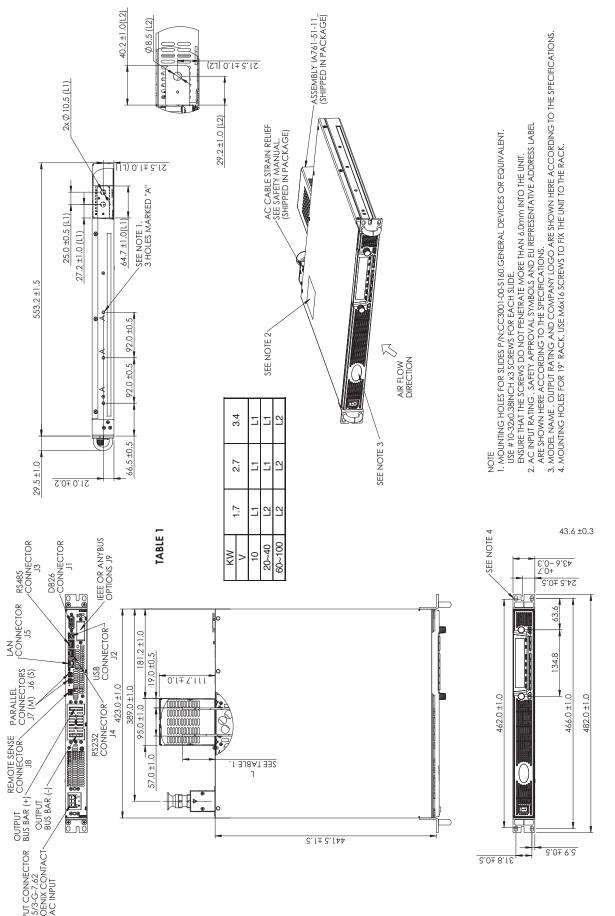
 *21: For 10V model only: Max. output current for using IEEE is 1200A up to 40°C and 1350A up to 30°C.

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

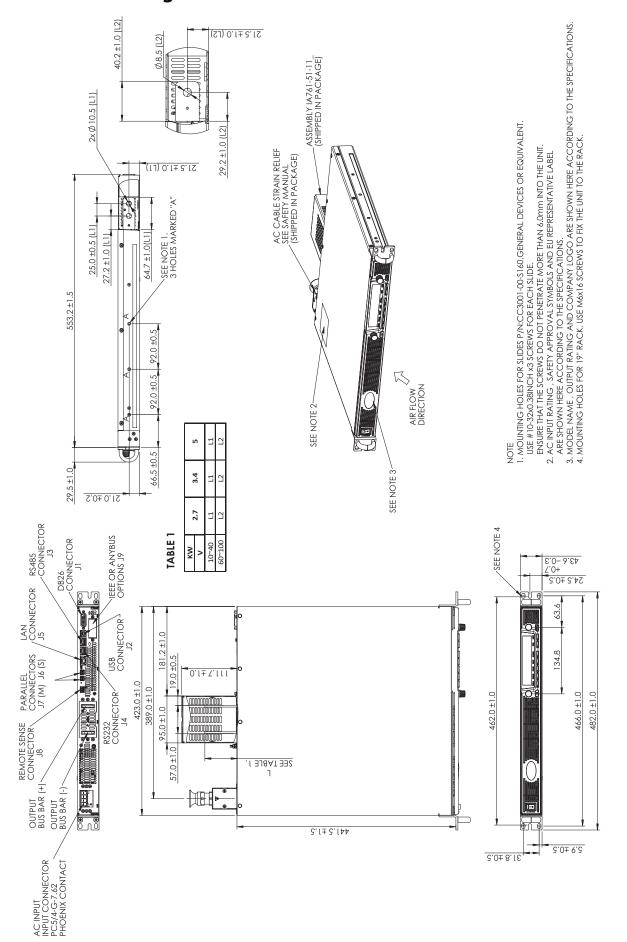
 *23: For steady state only.



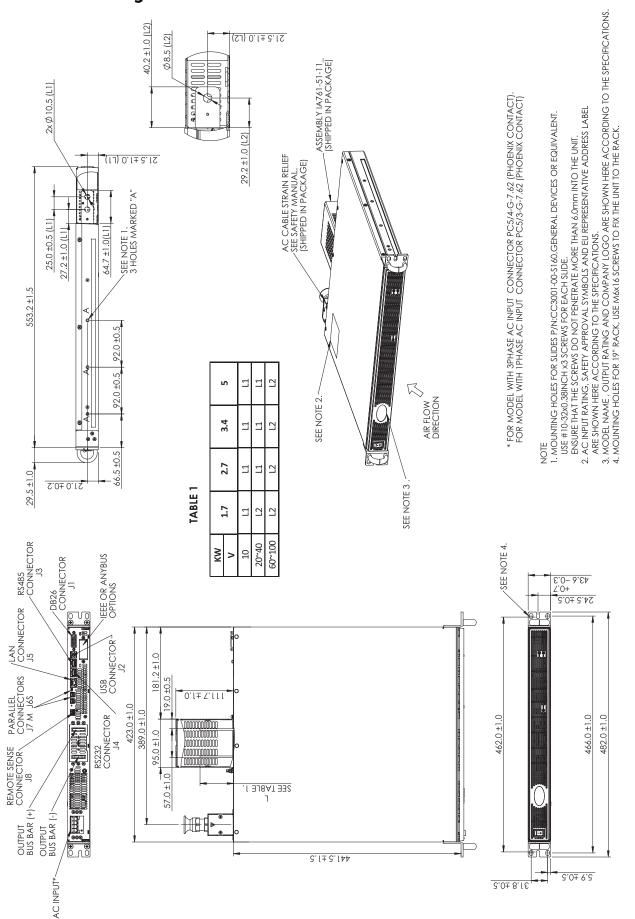
Outline Drawing GENESYS™ G1.7kW/2.7kW/3.4kW - 1-Phase



Outline Drawing GENESYS™ G2.7kW/G3.4kW/G5kW - 3-Phase

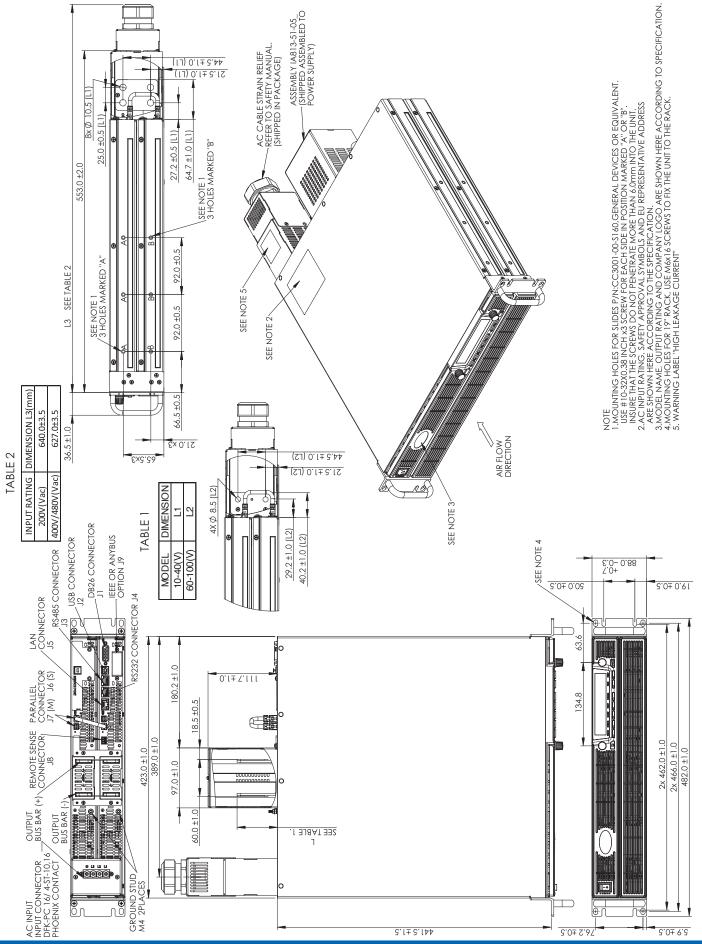


Outline Drawing GENESYS™ GB1.7kW/GB2.7kW/GB3.4kW/GB5kW - ATE Version

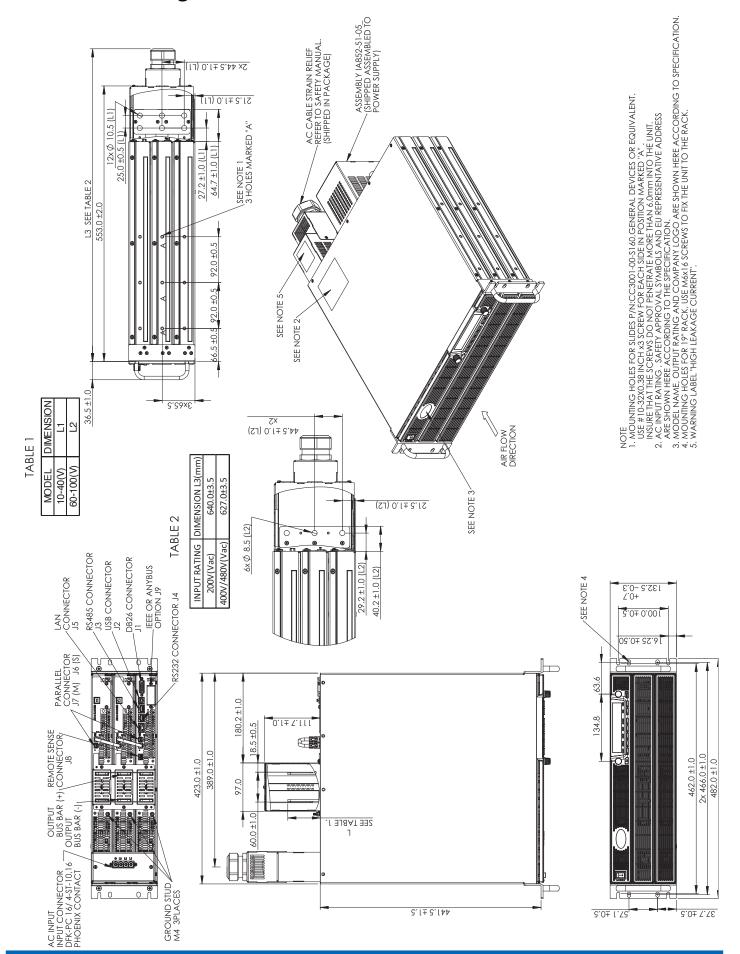




Outline Drawing **GENESYS™** GSP10kW



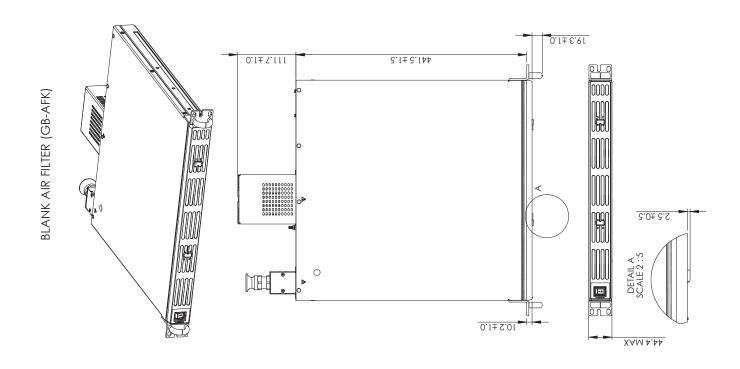
Outline Drawing **GENESYS™** GSP15kW

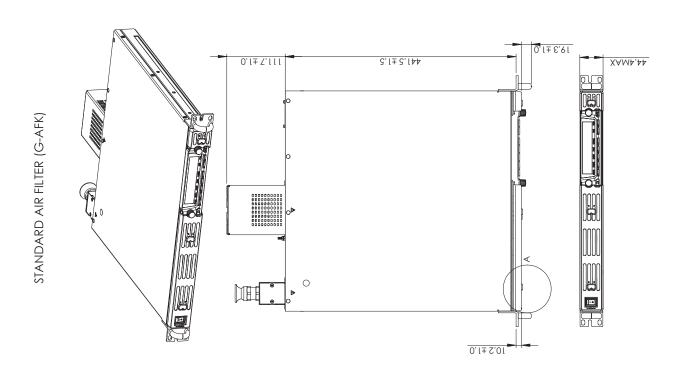






Outline Drawing **GENESYS™** Air Filter Kit



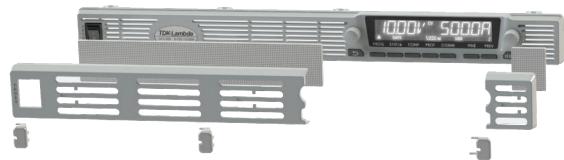


Front Panel Air Filter Assembly

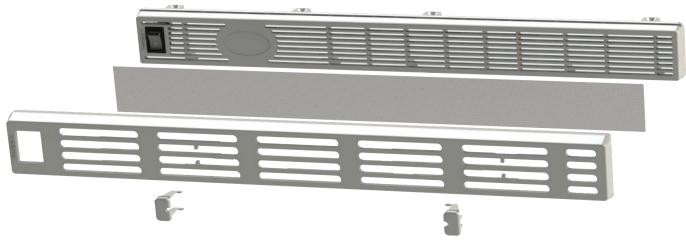
Front panel dust cover is available for dusty air environment applications

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)



Improved 5Pecifications

Genesys™

GENH Series
Programmable DC Power Supplies
750W in 1U Half-Rack Size
Built in RS-232 & RS-485 Interface
Advanced Parallel Operation

Optional Interface:
LXI Compliant LAN
IEEE488.2 SCPI (GPIB) Multi-drop
Isolated Analog Programming



Genesys™ Family

GenH 750W Half Rack

Gen1U 750/1500W Full Rack

Gen2U 3.3/5kW

TDK-Lambda



TDK·Lambda

Genesys™ GENH750W-1U

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:

- High Power Density available: 750W in 1U half-rack size.
- Wide Range Input (85 265Vac Continuous)
- Active Power Factor Correction (0.99 typical)
- Output Voltage up to 600V, Current up to 100A
- Built-in RS-232/RS-485 Interface
- Front Panel Lockout
- Last-Setting Memory
- High Resolution 16 bit ADCs & DACs
- Reliable Encoders for Voltage and Current Adjustment
- Constant Voltage/Constant Current auto-crossover
- Advanced Parallel reports total current up to four identical units

- Global Commands for Serial RS-232/RS-485 Interface
- Independent Remote ON/OFF and Remote Enable/Disable
- External Analog Programming and Monitoring
- Reliable Modular and SMT Design
- 19"Rack Mounted ATE benchtop and OEM applications
- Side-by-side mounting of two units in a 19" rack
- Optional Interfaces Isolated Analog Programming and Monitoring Interface (0-5V/0-10V & 4-20mA) IEEE 488.2 SCPI (GPIB) Multi-Drop

LXI Compliant LAN

- LabView® and LabWindows® drivers
- Five Year Warranty





Worldwide Safety Agency Approvals; CE Mark for LVD and EMC Regulation

Front Panel Description



- 1. AC ON/OFF Switch
- 2. Air Intake allows zero stacking for maximum system flexibility and power density.
- 3. Reliable encoder controls Output Voltage and sets Address.
- 4. Volt Display shows Output Voltage and directly displays OVP, UVL and Address settings.
- 5. Reliable encoder controls Output Current, sets baudrate and Advanced Parallel mode.
- 6. Current Display shows Output Current and displays baudrate.
- 7. Function/Status LEDs:
- Alarm

Preview Settings

Remote Mode

Fine Control

Foldback Mode

Output On

- 8. Pushbuttons allow flexible user configuration
 - Coarse and Fine adjustment of Output Voltage/Current and Advanced Parallel Master or Slave
 - Preview settings and set Voltage/Current with Output OFF, Front Panel Lockout
 - Set OVP and UVL Limits
 - Set Current Foldback
 - Local/Remote Mode and select Address and Baudrate
 - Output ON/OFF and Auto-Start/Safe-Start Mode



Applications

Genesys[™] power supplies are designed for demanding applications.

Common controls are shared across all platforms

Test and Measurement

Last-Setting memory simplifies test design and requires no battery backup.

Built-in RS-232/RS-485 gives maximum system flexibility along with 0-5V and 0-10V, selectable analog programming.

Wide range of available inputs allows testing of many different devices.

Semiconductor Processing and Burn-in

Safe-Start may be ENABLED to re-start at Output OFF to protect load.

Wide range input (85-265Vac) with Active Power Factor correction rides through input transients easily.

Component Test

High power density, zero stacking and single wire parallel operation give maximum system flexibility.

Laser Diode

OVP is directly set on Voltage Display, assuring accurate protection settings.

Current Limit Fold Back assures load is protected from current surges.

Heater Supplies

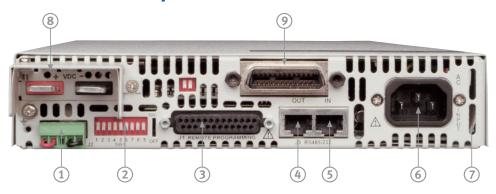
Smooth, reliable encoders enhance front panel control. Remote analog programming is user selectable 0-5V or 0-10V.

RF Amplifiers and Magnets

Robust design assures stable operation under a wide variety of loads.

High linearity in voltage and current mode.

Rear Panel Description



- 1. Remote/Local Output Voltage Sense Connections.
- 2. DIP Switches select 0-5V or 0-10V Programming and other functions.
- 3. DB25 (Female) connector allows (Non-isolated) Analog Program and Monitor and other functions.
- 4. RS-485 OUT to other Genesys™ Power Supplies.
- 5. RS-232/RS-485 IN Remote Serial Programming.
- 6. Wide-Range Input 85-265VAC continuous, 47/63Hz with Active Power Factor Correction (0.99 typical) AC Input Connector: IEC320.
- 7. Exit air assures reliable operation when zero stacked.
- 8. Output Connections: Rugged busbars for 6V up to 60V Output; Connector for Outputs >60V.
- 9. Optional Interface Position for IEEE 488.2 SCPI (shown) or Isolated Analog Interface or LAN Interface.



TDK·Lambda

Genesys™ GENH750W Specifications

1.0 MODEL	GENH	6-100	8-90	12.5-60	20-38	30-25	40-19	60-12.5	80-9.5	100-7.5	150-5	200 2 E	600-1.3
1. Rated output voltage (*1)	V	6	8	12.5	20	30	40-19	60	80	100-7.3	150	300-2.3	600
2. Rated Output Current (*2)	A	100	90	60	38	25	19	12.5	9.5	7.5	5	2.5	1.3
3. Rated Output Power	Ŵ	600	720	750	760	750	760	750	760	750	750	750	780
4. Efficiency at 100/200Vac (*3)	%	76/78	77/80	81/84	82/85	82/85	83/87	83/87	83/87	83/87	83/87	83/87	83/87
•	/0	70,70	77700	01/01	02/03	02/03	03/07	03/07	03/07	03/0/	03/01	03/07	03/07
1.1 CONSTANT VOLTAGE MODE	1.7	2.6	2.0	2.2					4.0	40	47	22	
1. Max.line regulation (0.01% of Vo+ 2mV)(*4)	mV	2.6	2.8	3.3	4	5	6	8	10	12	17	32	62
2. Max load regulation (0.01% of Vo+2mV)(*5)	mV	2.6	2.8	3.3	4	5	6	8	10	12	17	32	62
3. Ripple and noise p-p 20MHz (*9)	mV	60	50	60	60	50	60	60	75	75	75	130	300
4. Ripple r.m.s 5Hz~1MHz (*9)	mV	8	6	7	7.5	6	7	7	7	8	8	20	60
5. Remote sense compensation/line	V	1	1	1	1	1.5	2	3	4	5	5	5	5
6. Temp. coefficient	PPM/°C	50PPM/°C	of rated	output vo	<u>ltage, follo</u>	owing 30 r	ninutes wa	arm up			1.0		
7.Temp. stability	%	0.01% of	rated Vo	ut over 8h	<u>irs interva</u>	Itollowin	g 30 minut	tes warm-	up. Const	ant line, lo	ad & temp).	
8. Up-prog. response time, 0~Vo Rated	mS	80mS, N.I	_/F.L, resis						150mS, N	.L/F.L, resi			250
9. Down-prog response time full-load	mS	10	600	50	200	000	80	4400	4000		0	2500	250
10. Down-prog response time No-load	mS	500	600	700	800	900	1000	1100	1200	1500	2000	2500	4000
11. Transient response time (*8)	mS						100V. 2mS				0.		
12. Temp. drift	%	0.01% of r	ated Vou	over 8hrs	interval f	ollowing :	30 minutes	warm up	. Constan	t line, load	& temp.		
1.2 CONSTANT CURRENT MODE													
1. Max.line regulation (0.01% of lo+ 2mA)(*4)	mA	12	11	8.0	5.8	4.5	3.9	3.25	2.95	2.75	2.5	2.25	2.13
2. Max.load regulation (0.02% of lo+5mA)(*6)	mA	25	23	17	12.6	10	8.8	7.5	6.9	6.5	6.0	5.5	5.26
3. Ripple r.m.s 5Hz~1MHz . (*7)	mA	190	160	110	50	45	30	15	10	10	8	6	4
4. Temp. coefficient		70PPM/°C											
5. Temp. stability	%	0.01% of r	ated lout	over 8hrs	interval fo	llowing 3	0 minutes	warm un	Constant	line, load	& temp.		
6. Warm up drift	%									voltage / c		ange	
•	, ,0	,_coo triuli	211 /0 1410				rinig p	2	output	. J.iuge / C		90	
1.3 PROTECTIVE FUNCTIONS		0.46==:											
1. OCP		0~105% C					<u></u>	CC 1/	1				
2. OCP Foldback							rom CV to						
3. OVP type		Inverter s	hut-down	<u>, manual r</u>	eset by A	input red	cycle or by	OUT butt	on or by o	communic	ation port		
4. OVP trip point		0.5~7.5V	0.5~10V	1~15V	1~24V	2~36V	2~44V	5~66V	5~88V	5~110V	5~165V	5~330V	5~660V
5. Over Temp Protection		User selec	<u>ctable, lat</u>	ched or no	<u>n latched</u>								
1.4 ANALOG PROGRAMMING AND MONITORIN	5												
1. Vout Voltage Programming	<u> </u>	0~100%	0~5V or 0	~10V user	select Ac	curacy an	d linearity	· +/-0 5% i	of rated V	OUT			
2. lout Voltage Programming							d linearity						
3. Vout Resistor Programming							racy and li						
4. lout Resistor Programming													
							racy and li			rated fout.			
5. On/Off control (rear panel)							ct, user se	iectable i	ogic				
6. Output Current monitor				uracy: 1%,									
7. Output Voltage monitor				uracy: 1%,									
8. Power Supply OK signal		I I L nign	(4~5V) -O	K, 0V-Fail !	<u>Suuonm se</u>	eries resist	iance	201/					
9. CV/CC indicator		Open coll	ector, CC	mode: On	<u>, CV mode</u>	: Off, Max	<u>imum volt</u>	age: 30V, I	<u>maxımum</u>	n sink curre	nt: 10mA		
10. Enable/Disable							Enable/D						
11. Local/Remote analog control							rt: Remote						
12. Local/Remote analog control indicator		Open coll	ector, Loc	al: Open,	Remote: C	n. Maxim	<u>um voltag</u>	e: 30V, ma	<u>iximum si</u>	<u>nk current</u>	:5mA.		
1.5 FRONT PANEL													
		Vout/lout	manual a	diust by s	enarate er	ncoders (c	oarse and	fine adjus	tment se	lectable)			
				djust by Vo						ectubic,			
1. Control functions							afe). Foldb	ack contr	ol (CV to C	CC), Go to I	ocal contr	rol	
		Address	election h	ov Voltage	(or curren	nt) adiust e	encoder. N	umber of	addresse	s: 31			
		RS232/48	5 and IFFF	488.2 sel	ection by I	EEE enahl	e switch a	nd DIP sw	itch				
				1200, 240									
				accuracy: (-,						
0.00													
2. Display		Current	4 digits a	accuracy: ().2%+/-1 c	ount							
1 /		Current	4 digits, a).2%+/-1 c	ount	Local. Out	put On. Fi	ront Pane	Lock			
3. Indications		Current Voltage, 0	4 digits, a).2%+/-1 c	ount	Local, Out	put On, Fi	ront Pane	l Lock			
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB /		Current Voltage, C rface	4 digits, a Current, A	larm, Fine,).2%+/-1 c Preview, l	ount Foldback,					150	200	
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model	LAN Inte	Current Voltage, 0	4 digits, a).2%+/-1 c	ount	Local, Out	put On, Fi	ront Pane	Lock	150	300	600
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit)	V	Current Voltage, C face 6	4 digits, a	larm, Fine,	0.2%+/-1 c Preview, l	ount Foldback,	40	60	80	100			
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated)	V mV	Current Voltage, C face 6	4 digits, a Current, A 8	12.5 0.25	20 0.4	Foldback, 30 0.6	40	60	80	2.0	3.0	6.0	12.0
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit)	V	Current Voltage, C face 6	4 digits, a	larm, Fine,	0.2%+/-1 c Preview, l	ount Foldback,	40	60	80	100			
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated) Accuracy (0.05%Vo Rated Output voltage) (*11)	V mV	Current Voltage, C face 6	4 digits, a Current, A 8	12.5 0.25	20 0.4	Foldback, 30 0.6	40	60	80	2.0	3.0	6.0	12.0
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated) Accuracy (0.05%Vo Rated Output voltage) (*11) 2. Remote Current Programming (16 bit)	MV mV	Current Voltage, C face 6 0.12 3.0	4 digits, a Current, A 8 0.16 4.0	12.5 0.25 6.3	0.2%+/-1 c Preview, 20 0.4 10	Foldback, 30 0.6 15	0.8	60 1.2 30	80 1.6 40	2.0 50	3.0 75	6.0	12.0
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated) Accuracy (0.05%Vo Rated Output voltage) (*11) 2. Remote Current Programming (16 bit) Resolution (0.002% of Io Rated)	MV mV mA	Current Voltage, C face 6 0.12 3.0	4 digits, a Current, A 8 0.16 4.0 1.80	12.5 0.25 6.3	0.2%+/-1 c Preview, l 20 0.4 10	30 0.6 15 0.50	0.8 20	60 1.2 30	1.6 40	2.0 50	3.0 75 0.10	6.0	12.0 300
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated) Accuracy (0.05%Vo Rated Output voltage) (*11) 2. Remote Current Programming (16 bit) Resolution (0.002% of lo Rated) Accuracy (0.1% of lo Rated+0.1% of lo Actual Output)(*10	MV mV mA	Current Voltage, C face 6 0.12 3.0	4 digits, a Current, A 8 0.16 4.0	12.5 0.25 6.3	0.2%+/-1 c Preview, 20 0.4 10	Foldback, 30 0.6 15	0.8	60 1.2 30	80 1.6 40	2.0 50	3.0 75	6.0	12.0
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated) Accuracy (0.05%Vo Rated Output voltage) (*11) 2. Remote Current Programming (16 bit) Resolution (0.002% of Io Rated)	MV mV mA	Current Voltage, C face 6 0.12 3.0	4 digits, a Current, A 8 0.16 4.0 1.80	12.5 0.25 6.3	0.2%+/-1 c Preview, l 20 0.4 10	30 0.6 15 0.50	0.8 20	60 1.2 30	1.6 40	2.0 50	3.0 75 0.10	6.0	12.0 300
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated) Accuracy (0.05%Vo Rated Output voltage) (*11) 2. Remote Current Programming (16 bit) Resolution (0.002% of Io Rated) Accuracy (0.1% of Io Rated+0.1% of Io Actual Output)(*10 3. Readback Voltage	MV mV mA mA	Current Voltage, (Control of the Control of the	4 digits, a Current, A 8 8 0.16 4.0 1.80 1.80	12.5 0.25 6.3 1.20 120	0.2%+/-1 c Preview, l 20 0.4 10 0.76 76	ount Foldback, 30 0.6 15 0.50 50	0.8 20 0.38 38	60 1.2 30 0.25 25	80 1.6 40 0.19 19	2.0 50 0.15 15	3.0 75 0.10 10	6.0 150 0.05 5.0	12.0 300 0.03 2.6
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated) Accuracy (0.05%Vo Rated Output voltage) (*11) 2. Remote Current Programming (16 bit) Resolution (0.002% of lo Rated) Accuracy (0.1% of lo Rated+0.1% of lo Actual Output)(*10 3. Readback Voltage Resolution of Vo Rated	mV mV mA mA	Current Voltage, (Control of the Control of the	4 digits, 3 Current, A 8 0.16 4.0 1.80 180 0.16	12.5 0.25 6.3 1.20 120	0.2%+/-1 c Preview, l 20 0.4 10 0.76 76	ount Foldback, 30 0.6 15 0.50 50	0.8 20 0.38 38	60 1.2 30 0.25 25	1.6 40 0.19 19	2.0 50 0.15 15	3.0 75 0.10 10	6.0 150 0.05 5.0	12.0 300 0.03 2.6
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated) Accuracy (0.05%Vo Rated Output voltage) (*11) 2. Remote Current Programming (16 bit) Resolution (0.002% of lo Rated) Accuracy (0.1% of lo Rated) Accuracy (0.1% of lo Rated+0.1% of lo Actual Output)(*10 3. Readback Voltage Resolution of Vo Rated Accuracy 0.05% Vo Rated	MV mV mA mA	Current Voltage, (Control of the Control of the	4 digits, a Current, A 8 8 0.16 4.0 1.80 1.80	12.5 0.25 6.3 1.20 120	0.2%+/-1 c Preview, l 20 0.4 10 0.76 76	ount Foldback, 30 0.6 15 0.50 50	0.8 20 0.38 38	60 1.2 30 0.25 25	80 1.6 40 0.19 19	2.0 50 0.15 15	3.0 75 0.10 10	6.0 150 0.05 5.0	12.0 300 0.03 2.6
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated) Accuracy (0.05%Vo Rated Output voltage) (*11) 2. Remote Current Programming (16 bit) Resolution (0.002% of Io Rated) Accuracy (0.1% of Io Rated+0.1% of Io Actual Output)(*10 3. Readback Voltage Resolution of Vo Rated Accuracy 0.05% Vo Rated Accuracy 0.05% Vo Rated 4. Readback Current	MV mV mA mA mV	Current Voltage, Control Current Voltage, Control Contro	4 digits, 8	12.5 0.25 6.3 1.20 120 1.125 6.3	20 0.4 10 0.76 76	ount Foldback, 30 0.6 15 0.50 50 1.20 15	0.8 20 0.38 38 1.2 20	60 1.2 30 0.25 25 1.2 30	80 1.6 40 0.19 19 1.60 40	100 2.0 50 0.15 15 11.0 50	3.0 75 0.10 10 10.50 75	6.0 150 0.05 5.0 12 150	12.0 300 0.03 2.6 12 300
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated) Accuracy (0.05%Vo Rated Output voltage) (*11) 2. Remote Current Programming (16 bit) Resolution (0.002% of lo Rated) Accuracy (0.1% of lo Rated+0.1% of lo Actual Output)(*10 3. Readback Voltage Resolution of Vo Rated Accuracy 0.05% Vo Rated 4. Readback Current Resolution of lo Rated	MV mV mA mA mA mV mV	Current Voltage, C Face 6 0.12 3.0 2.00 200 0.12 3 3 11 11	4 digits, a Current, A 8 0.16 4.0 1.80 0.16 4	12.5 0.25 6.3 1.20 120 1.125 6.3	20 20 0.4 10 0.76 76 1.20 1.14	ount Foldback, 30 0.6 15 0.50 50 1.20 15	0.8 20 0.38 38 1.2 20	60 1.2 30 0.25 25 1.2 30	1.6 40 0.19 19 1.60 40	100 2.0 50 0.15 15 11.0 50 0.15	3.0 75 0.10 10 10.50 75	6.0 150 0.05 5.0 12 150	12.0 300 0.03 2.6 12 300
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated) Accuracy (0.05%Vo Rated Output voltage) (*11) 2. Remote Current Programming (16 bit) Resolution (0.002% of Io Rated) Accuracy (0.1% of Io Rated+0.1% of Io Actual Output)(*10 3. Readback Voltage Resolution of Vo Rated Accuracy 0.05% Vo Rated Accuracy 0.05% Vo Rated 4. Readback Current	MV mV mA mA mV	Current Voltage, Control Current Voltage, Control Contro	4 digits, 8	12.5 0.25 6.3 1.20 120 1.125 6.3	20 0.4 10 0.76 76	ount Foldback, 30 0.6 15 0.50 50 1.20 15	0.8 20 0.38 38 1.2 20	60 1.2 30 0.25 25 1.2 30	80 1.6 40 0.19 19 1.60 40	100 2.0 50 0.15 15 11.0 50	3.0 75 0.10 10 10.50 75	6.0 150 0.05 5.0 12 150	12.0 300 0.03 2.6 12 300
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated) Accuracy (0.05%Vo Rated Output voltage) (*11) 2. Remote Current Programming (16 bit) Resolution (0.002% of lo Rated) Accuracy (0.1% of lo Rated+0.1% of lo Actual Output)(*10 3. Readback Voltage Resolution of Vo Rated Accuracy 0.05% Vo Rated 4. Readback Current Resolution of lo Rated Accuracy 0.3% of lo Rated Accuracy 0.3% of lo Rated	MV mV mA mA mA mV mV	Current Voltage, C Face 6 0.12 3.0 2.00 200 0.12 3 3 11 11	4 digits, a Current, A 8 0.16 4.0 1.80 0.16 4	12.5 0.25 6.3 1.20 120 1.125 6.3	20 20 0.4 10 0.76 76 1.20 1.14	ount Foldback, 30 0.6 15 0.50 50 1.20 15	0.8 20 0.38 38 1.2 20	60 1.2 30 0.25 25 1.2 30	1.6 40 0.19 19 1.60 40	100 2.0 50 0.15 15 11.0 50 0.15	3.0 75 0.10 10 10.50 75	6.0 150 0.05 5.0 12 150	12.0 300 0.03 2.6 12 300
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated) Accuracy (0.05%Vo Rated Output voltage) (*11) 2. Remote Current Programming (16 bit) Resolution (0.002% of Io Rated) Accuracy (0.1% of Io Rated+0.1% of Io Actual Output)(*10 3. Readback Voltage Resolution of Vo Rated Accuracy 0.05% Vo Rated 4. Readback Current Resolution of Io Rated Accuracy 0.3% of Io Rated Accuracy 0.3% of Io Rated Accuracy 0.3% of Io Rated(*10) 5. OVP/UVL Programming	mV mV mA mA mA	Current Voltage, C face 6 6 0.12 3.0 2.00 200 11 11 300	4 digits, a Current, A 8 0.16 4.0 1.80 180 0.16 4 1.80 270	12.5 0.25 6.3 1.20 120 1.125 6.3	0.2%+/-1 c Preview, l 20 0.4 10 0.76 76 1.20 1.14 114	ount Foldback, 30 0.6 15 0.50 50 1.20 1.25 75	0.8 20 0.38 38 1.2 20	1.2 30 0.25 25 1.2 30	1.6 40 0.19 19 1.60 40 0.19 28.50	100	3.0 75 0.10 10 10.50 75 0.15 15	6.0 150 0.05 5.0 12 150 0.13 7.50	12.0 300 0.03 2.6 12 300 0.12 3.90
3. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit) Resolution (0.02% of Vo Rated) Accuracy (0.05%Vo Rated Output voltage) (*11) 2. Remote Current Programming (16 bit) Resolution (0.002% of lo Rated) Accuracy (0.1% of lo Rated+0.1% of lo Actual Output)(*10 3. Readback Voltage Resolution of Vo Rated Accuracy 0.05% Vo Rated 4. Readback Current Resolution of lo Rated Accuracy 0.3% of lo Rated Accuracy 0.3% of lo Rated	MV mV mA mA mA mV mV	Current Voltage, C Face 6 0.12 3.0 2.00 200 0.12 3 3 11 11	4 digits, a Current, A 8 0.16 4.0 1.80 0.16 4	12.5 0.25 6.3 1.20 120 1.125 6.3	20 20 0.4 10 0.76 76 1.20 1.14	ount Foldback, 30 0.6 15 0.50 50 1.20 15	0.8 20 0.38 38 1.2 20	60 1.2 30 0.25 25 1.2 30	1.6 40 0.19 19 1.60 40	100 2.0 50 0.15 15 11.0 50 0.15	3.0 75 0.10 10 10.50 75	6.0 150 0.05 5.0 12 150	12.0 300 0.03 2.6 12 300

^{*1:} Minimum voltage is guaranteed to maximum 0.2% of Vo Rated.

Specifications in Blue are improved



^{*2:} Minimum current is guaranteed to maximum 0.4% of lo Rated.

^{2.} Willindin Control is guaranteed to maximum 0.4% of to nated.

*3: At maximum output power.

*4: 85~132Vac or 170~265Vac, constant load.

*5: From No-load to Full-load, constant input voltage.

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

^{*7:} For 6V models the ripple is measured at 2~6V output voltage and full output current.
For other models, the ripple is measured at 10~100% output voltage and full output current.

 $^{*8:} Time for the output voltage to recover within 0.5\% of its rated for a load change 10 \sim 90\% of rated and the output voltage to recover within 0.5\% of its rated for a load change 10 \sim 90\% of rated and the output voltage to recover within 0.5\% of its rated for a load change 10 \sim 90\% of rated and the output voltage to recover within 0.5\% of its rated for a load change 10 \sim 90\% of rated and the output voltage to recover within 0.5\% of its rated for a load change 10 \sim 90\% of rated and the output voltage to recover within 0.5\% of its rated for a load change 10 \sim 90\% of rated and the output voltage to recover within 0.5\% of its rated for a load change 10 \sim 90\% of rated and the output voltage is a load change 10 \sim 90\% of rated and the output voltage is a load change 10 \sim 90\% of rated and the output voltage is a load change of the output voltage of the output voltage$ output, Output set-point:10~100%.

^{*9:} For 6V~300V models: measured with JEITA RC-9131A 1:1 probe. For 600V model: measured with

 ^{10:1} probe Accuracy -Values have been calculated at Vo Rated & Io Rated.
 *10: The Constant Current programming readback and monitoring accuracy does not include the warm-up and Load regulation thermal drift.

^{*11:} Measured at the sense point.

General Specifications Genesys™ GENH750W

I. Input voltage/freg. (*1)	85~265Vac continuous, 47~63Hz, single phase
Power Factor	0.99 @100/200Vac, rated output power.
. EN61000-3-2,3 compliance	0.59 @100/2004ac, faced output power. Compiles with EN61000-3-2 class A and EN61000-3-3 at 20~100% output power.
. Input current 100/200Vac	750W:10.5A / 5A,
. Inrush current 100/200Vac	750W :Less than 25A.
i. Hold-up time	More than 20mS, 100Vac, at 100% load.
i. Hold-up time	more than zonis, roovac, at 100% load.
.2 POWER SUPPLY CONFIGURATION	
. Parallel Operation	Up to 4 units in master/slave mode with single wire current balance connection
. Series Operation	Up to 2 units, with external diodes. 600V Max to Chassis ground
	1-p-1
2.3 ENVIRONMENTAL CONDITIONS	L. and the second of
. Operating temp	0~50°C, 100% load.
. Storage temp	-20~70°C
. Operating humidity	30~90% RH (non-condensing).
. Storage humidity	10~95% RH (non-condensing).
5. Vibration	MIL-810E, method 514.4, test cond. I-3.3.1. The EUT is fixed to the vibrating surface.
i. Shock	Less than 20G, half sine, 11mSec. Unit is unpacked.
'. Altitude	Operating: 10000ft (3000m), Derat output current by 2%/100m above 2000m, Non operating: 40000ft (12000m).
2.4 EMC	
I. Applicable Standards:	IECTODO 4.2 Air disab OVV server disab AVV
. ESD	IEC1000-4-2. Air-disch8KV, contact disch4KV
. Fast transients	IEC1000-4-4. 2KV
. Surge immunity	IEC1000-4-5. 1KV line to line, 2KV line to ground
. Conducted immunity	IEC1000-4-6, 3V
. Radiated immunity	IEC1000-4-3, 3V/m
. Conducted emission	EN55022B, FCC part 15J-B, VCCI-B.
3. Radiated emission	EN55022A, FCC part 15-A, VCCI-A.
. Voltage dips	EN61000-4-11
0. Conducted emission	EN55022B, FCC part 15-B, VCCI-B.
1. Radiated emission	EN55022A, FCC part 15-A, VCCI-A.
2.5 SAFETY	
.Applicable standards:	UL 60950-1, CSA22.2 No.60950-1, IEC 60950-1, EN 60950-1
	Models with Vout 50V: Output is SELV, all communication/control interfaces (RS232/485, IEEE, Isolated Analog,
	LAN, Sense, Remote Programming and Monitoring) are SELV. Models with 60V Vout 400V: Output is Hazardous, communication/control interfaces: RS232/485, IEEE,
	Models with 60V Vout 400V: Output is Hazardous, communication/control interfaces: RS232/485, IEEE,
2.Interface classification	Isolated Analog, LAN, Remote Programing and Monitoring (pins 1-3, pins14-16) are SELV, Sense, Remote
	Programming and Monitoring (pins 8-13, pins 21-25) are Hazardous. Models with 400V Vout 600V: Output is Hazardous, all communication/control interfaces (RS232/485, IEEE,
	moders with 400V yout 500V: Output is Hazardous, all communication/control interfaces (RS232/485, IEEE,
	Isolated Analog, LAN, Sense, Remote Programming and Monitoring) are Hazardous. Vout 50V models: Input-Output (SELV): 4242VDC 1min, Input-communication/control (SELV): 4242VDC 1min,
	vout 50v models : Input-Output (SELV): 4242VDC Tmin, Input-communication/control (SELV): 4242VDC Tmin, Input-Ground: 2828VDC 1min,
	Input-ground: 2828/DL Imin. 60V Vout 150V models: Input-Output (Hazardous): 3425VDC 1min, Input-communication/control (SELV):
	4242VDC 1min. Outout(Hazardous)-SELV: 2307VDC 1min. Outout(Hazardous)-Ground: 1414VDC 1min.
.Withstand voltage	4242VDC IIIIII), Output(mazardous)-SELV. 2307VDC IIIIII, Output(mazardous)-Glound. 1414VDC IIIIII, Inout-Ground: 2828VDC Imin.
	1300V Vout 600V models: Input-Output(Hazardous): 3490VDC 1min, Input-communication/control (SELV):
	4242VDC 1min Hazardous Output-communication/control(SELV): 4242VDC 1min
	Output(Hazardous)-Ground: 2738VDC 1min, Input-Ground: 2828VDC 1min.
.Insulation resistance	More than 100Mohm at 25°C, 70% RH.
	·
.6 MECHANICAL CONSTRUCTION	le live of the Annales I have been considered.
. Cooling	Forced air flow: from front to rear. No ventilation holes at the top or bottom of the chassis; Variable fan speed.
. Dimensions (WxHxD)	W: 214.0mm, H: 43.6mm, (57.0mm Benchtop version), D: 437.5mm (excluding connectors, encoders, handles, etc.)
. Weight	7Kg (15 Lbs)
I. AC Input connector	IEC320 AC Inlet.
5. Output connectors	6V to 60V models: Bus-bars (hole Ø 6.5mm). 80V to 600V models: Meating plug, Phoenix P/N: GIC 2.5/4-5T-7.62.
.7 RELIABILITY SPECS	
I. Warranty	5 years.

Also available, Genesys™

1U full Rack 750W/1500W/2400W

2U full Rack 3300W/5000W





Genesys™ Power Benchtop Parallel and Series Configurations

Parallel operation - Master/Slave:

Active current sharing allows up to four identical units to be connected in an auto-parallel configuration for four times the output power.



In Advanced Parallel Master/Slave Mode, total current is programmed and reported by the Master, Up to four supplies act as one.

Series operation

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



P/N: IEEE

P/N: IS510

P/N: IS420

Remote Programming via RS-232 & RS-485 Interface

Standard Serial Interface allows chain control of up to 31 power supplies on the same bus with built-in RS-232 & RS-485 Interface.





Programming Options (Factory installed)

Digital Programming via IEEE Multi-Drop Interface

- Allows IEEE Master to control up to 30 slaves over RS-485 daisy-chain
- Only the Master needs be equipped with IEEE Interface
- IEEE 488.2 SCPI Compliant
- Program Voltage
- Measure Voltage
- Over Voltage setting and shutdown
- Error and Status Messages

- Program Current
- Measure Current
- Current Foldback shutdown

Isolated Analog Programming

Four Channels to Program and Monitor Voltage and Current.

Isolation allows operation with floating references in harsh electrical environments.

Choose between programming with Voltage or Current.

Connection via removable terminal block: Phoenix MC1,5/8-ST-3.81.

• Voltage Programming, user-selectable 0-5V or 0-10V signal. Power supply Voltage and Current Programming Accuracy $\pm 1\%$

Power supply Voltage and Current Monitoring Accuracy ±1.5%

Current Programming with 4-20mA signal.

Power supply Voltage and Current Programming Accuracy ±1% Power supply Voltage and Current Monitoring Accuracy ±1.5%

LAN Interface LXI Compliant to Class C P/N: LAN

- Meets all LXI-C Requirements
- Address Viewable on Front Panel
- Fixed and Dynamic Addressing
- Compatible with most standard Networks
- VISA & SCPI Compatible
- LAN Fault Indicators
- Auto-detects LAN Cross-over Cable
- Fast Startup



Accessories

Rack Mounting applications P/N:GENH/RM

The Rack Mounted kit allows the units to be zero stacking for maximum system flexibility and power density without increasing the 1U height of the units To install one GENH750W unit or two units side-by-side in a standard 19" rack in 1U(1.75") height, use option kit **P/N:GENH/RM**

Single unit installation

Single GENH750W power supply in a standard 19" rack in 1U(1.75") height,



Dual unit installation

Two GENH750W power supplies side-by-side in a standard 19" rack in 1U (1.75") height,



Benchtop applications P/N:GENH/MO

The benchtop stacking kit allows the units to be Zero stacked for maximum system flexibility and power density without increasing the 1U height of the units. To install a GENH750W two units or three units one on top of the other use option kit **P/N:GENH/MO**



Communication cable

RS-232/RS-485 Cable is used to connect the power supply to the PC Controller.

Mode	RS-485	RS-232	RS-232
PC Connector Communication Cable Power Supply Connector	DB-9F Shield Ground L=2m EIA/TIA-568A (RJ-45)	DB-9F Shield Ground L=2m EIA/TIA-568A (RJ-45)	DB-25F FShield Ground L=2m EIA/TIA-568A (RJ-45)
P/N	GEN/485-9	GEN/232-9	GEN/232-25

Serial link cable*

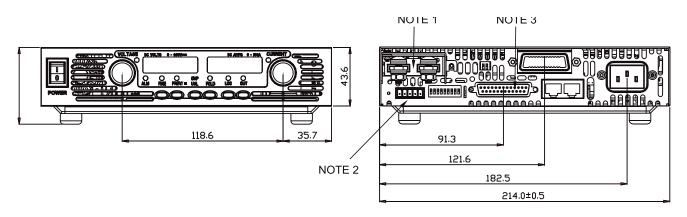
Daisy-chain up to 31 Genesys[™] power supplies.

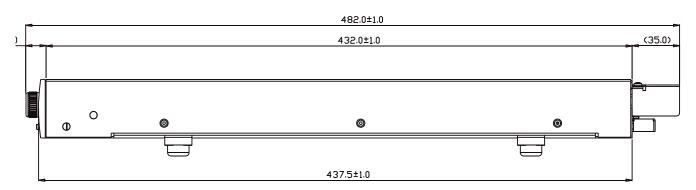
Mode	Power Supply Connector	Communication Cable	P/N
RS-485	EIA/TIA-568A (RJ-45)	Shield Ground L=50cm	GEN/RJ45

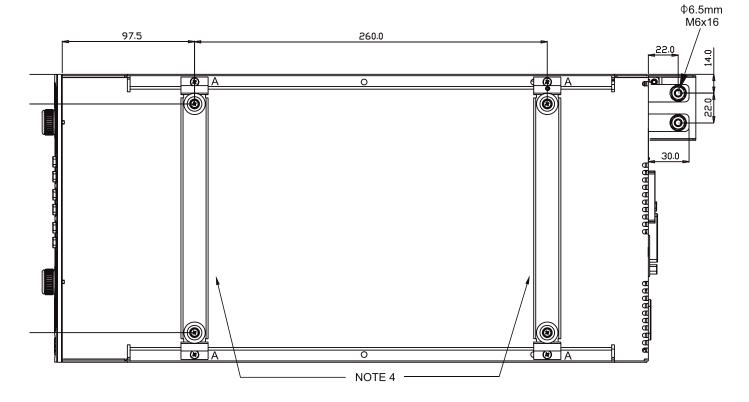
^{*} Included with power supply



Outline Drawings Genesys™ GENH 750W







NOTE 1



GENH Models 80V to 600V.

NOTES:

Bus-bars 6V-60V models Connector 80V to 600V model Header Phoenix P/N: GIC 2.5/4-G-7.62 Mating plug Phoenix P/N: GIC 2.5/4-ST-7.62.

Supplies with the power supply.

Mating plug Phoenix P/N: MC 1.5/5-ST-3.81.
Mating plug AMP P/N: 745211-2.
Benchtop assembly x 2 (removable)
Screws: 4 x M3x8 marked "A" 4.





Power Supply Identification / Accessories How to order

GENH	60	- 12.5	-		-	
Series	Output	Output	Factory O _l	otions	AC Cabl	e option
Name	Voltage (0~60V)	Current (0~12.5A)	Option:	IEEE IS510 IS420 LAN	Region	E - Europe GB - United Kingdom J - Japan I - Middle East U - North America

Models GENH750W

Model	Output Voltage VDC	Output Current (A)	Output Power (W)
GENH6-100	0~6V	0~100	600
GENH8-90	0~8V	0~90	720
GENH12.5-60	0~12.5V	0~60	750
GENH20-38	0~20V	0~38	760
GENH30-25	0~30V	0~25	750
GENH40-19	0~40V	0~19	760
GENH60-12.5	0~60V	0~12.5	750
GENH80-9.5	0~80V	0~9.5	760
GENH100-7.5	0~100V	0~7.5	750
GENH150-5	0~150V	0~5	750
GENH300-2.5	0~300V	0~2.5	750
GENH600-1.3	0~600	0~1.3	780

Factory option	P/N
RS-232/RS-485 Interface built-in Standard	-
GPIB Interface	IEEE
Voltage Programming Isolated Analog Interface	IS510
Current Programming Isolated Analog Interface	IS420
LAN Interface (Complies with LXI Class C)	LAN

Region	Europe	United Kingdom	Japan	Middle East	North America
Output Power AC Cords Wall Plug	750W 10A/250Vac L=2m INT'L 7/VII IEC320-C13	750W 10A/250Vac L=2m BS1363 IEC320-C13	750W 13A/125Vac L=2m IEC320-C13	750W 10A/250Vac L=2m SI-32 IEC320-C13	750W 13A/125Vac L=2m NEMA 5-15P IEC320-C13
Power Supply Connector					
Part Number	P/N: GEN/E	P/N: GEN/GB	P/N: GEN/J	P/N: GEN/I	P/N : GEN/U



Improved ons

Genesys™

Programmable DC Power Supplies
750W/1500W in 1U
Built in RS-232 & RS-485 Interface
Advanced Parallel Operation
Optional Interface:
LXI Compliant LAN
IEEE488.2 SCPI (GPIB) Multi-drop
Isolated Analog Programming



Genesys™ Family GenH 750W Half Rack Gen1U 750/1500W Full Rack Gen2U 3.3/5kW

TDK·Lambda



TDK·Lambda

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

Features include:

- High Power Density: 1500W in 1U
- Wide Range Input (85 265Vac Continuous, single phase, 47/63Hz)
- Active Power Factor Correction (0.99 typical)
- Output Voltage up to 600V, Current up to 200A
- Built-in RS-232/RS-485 Interface Standard
- Last-Setting Memory
- Global Commands for Serial RS-232/RS-485 Interface
- Front Panel Lock selectable from Front Panel or Software
- High Resolution 16 bit ADCs & DACs
- Reliable Encoders for Voltage and Current Adjustment
- Constant Voltage/Constant Current auto-crossover
- Advanced Parallel reports total current up to four identical units
- Independent Remote ON/OFF and Remote Enable/Disable
- External Analog Programming and Monitoring (user selectable 0-5V & 0-10V)
- Reliable Modular and SMT Design
- 19" Rack Mounted ATE and OEM applications
- Optional Interfaces

Isolated Analog Programming and Monitoring Interface (0-5V/0-10V & 4-20mA) IEEE 488.2 SCPI (GPIB) Multi-Drop

LXI Compliant LAN Interface

- LabView® and LabWindows® drivers
- Five Year Warranty

Worldwide Safety Agency Approvals; CE Mark for LVD and EMC Regulation





Applications

Genesys[™] power supplies have been designed to meet the demands of a wide variety of applications.

Common controls are shared all Genesys™ Series.

Test and Measurement

Last-Setting memory simplifies test design and requires no battery backup.

Built-in RS-232/RS-485 gives maximum system flexibility along with 0-5V and 0-10V, selectable analog programming. Wide range of available inputs allows testing of many different devices.

Semiconductor Burn-in

Safe-Start may be ENABLED to re-start at Output OFF to protect load.

Wide range input (85-265Vac) with Active Power Factor correction rides through input transients easily.

Component Test

High power density, zero stacking and single wire parallel operation give maximum system flexibility.

Laser Diode

OVP is directly set on Voltage Display, assuring accurate protection settings.

Current Limit Fold Back assures load is protected from current surges.

Heater Supplies

Smooth, reliable encoders enhance front panel control.

Remote analog programming is user selectable 0-5V or 0-10V.

RF Amplifiers and Magnets

Robust design assures stable operation under a wide variety of loads.

High linearity in voltage and current mode.

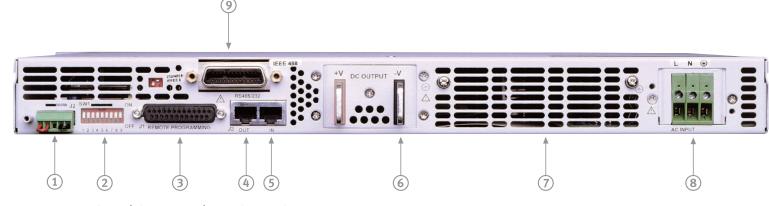


Front Panel Description



- 1. AC ON/OFF Switch
- 2. Air Intake allows zero stacking for maximum system flexibility and power density.
- 3. Reliable encoder controls Output Voltage and sets Address.
- 4. Volt Display shows Output Voltage and directly displays OVP, UVL and Address settings.
- 5. Reliable encoder controls Output Current, sets baudrate and Advanced Parallel mode.
- 6. Current Display shows Output Current and displays baudrate.
- 7. Function/Status LEDs:
- Alarm
- Foldback Mode
- Fine Control
- Remote Mode
- Preview Settings
- Output On
- 8. Pushbuttons allow flexible user configuration
 - Coarse and Fine adjustment of Output Voltage/Current and Advanced Parallel Master or Slave
 - Preview settings and set Voltage/Current with Output OFF, Front Panel Lockout
 - · Set OVP and UVL Limits
 - Set Current Foldback
 - Local/Remote Mode and select Address and Baudrate
 - Output ON/OFF and Auto-Start/Safe-Start Mode

Rear Panel Description



- 1. Remote/Local Output Voltage Sense Connections.
- 2. DIP Switches select 0-5V or 0-10V Programming and other functions.
- 3. DB25 (Female) connector allows (Non-isolated) Analog Program and Monitor and other functions.
- 4. RS-485 OUT to other Genesys™ Power Supplies.
- 5. RS-232/RS-485 IN Remote Serial Programming.
- 6. Output Connections: Rugged busbars for up to 60V Output; wire clamp connector for Outputs >60V.
- 7. Exit air assures reliable operation when zero stacked.
- 8. Wide-Range Input 85-265VAC continuous, 47/63Hz with Active Power Factor Correction (0.99 typical). AC Input Connector: 750W (IEC320), 1500W (screw terminal-shown).
- 9. Optional Interface Position for IEEE 488.2 SCPI (shown) or Isolated Analog Interface or LAN Interface.



TDK·Lambda

Genesys ™ 750W/1500W Specifications

1.0 MODEL	GEN			12.5-120			40-38	50-30		80-19	100-15	150-10	300-5	proved 600-2.6		X
1. Rated output voltage (*1)	V	6	8	12.5	20	30	40	50	60	80	100	150	300	600		X
l. Rated Output Current (*2) B. Rated Output Power	A W	200 1200	180 1440	120 1500	76 1520	50 1500	38 1520	30 1500	25 1500	19 1520	15 1500	10 1500	5 1500	2.6 1560		X
l. Efficiency at 100/200Vac (*3)	%	77/79	78/81	82/85		83/86	84/88		84/88					84/88		X
.0 MODEL	GEN	6-100	8-90	12.5-60		*	40-19		60-12.5					600-1.3	X	
Rated output voltage (*1)	V	6-100	8	12.5	20-38	30-25	40-19		60	80	100-7.5	150-5	300-2.5	600	X	
P. Rated Output Current (*2)	Å	100	90	60	38	25	19		12.5	9.5	7.5	5	2.5	1.3	X	
3. Rated Output Power	W	600	720	750	760	750	760		750	760	750	750	750	780	Х	
Efficiency at 100/200Vac (*3)	%	76/78	77/80	81/84	82/85	82/85	83/87		83/87	83/87	83/87	83/87	83/87	83/87	X	
.1 CONSTANT VOLTAGE MODE																
. Max.line regulation (0.01% of Vo+ 2mV)(*4)	mV	2.6	2.8	3.3	4	5	6	7	8	10	12	17	32	62	X	X
2. Max load regulation (0.01% of Vo+2mV)(*5)	mV	2.6	2.8	3.3	4	5	6	7	8	10	12	17	32	62	X	X
B. Ripple and noise p-p 20MHz (*9) H. Ripple r.m.s 5Hz~1MHz (*9)	mV mV	60 8	50 6	60 7	60 7.5	50 6	60 7	40 5	60 7	<u>75</u> 7	75 8	75 8	130 20	300 60	X	X
5. Remote sense compensation/line	V	1	1	1	7.3 1	1.5	2	2	3	4	5	5	5	5	X	X
5. Temp. coefficient		C 50PPM	°C of ra	ted outp	ut volta	ge, follo	wing 30	minute	s warm u	ıp					X	X
7. Temp. stability	%			lout ov		interval	followin	g 30 mii							X	X
3. Up-prog. response time, 0~Vo Rated	mS		<u> </u>	esistive l	oad	1		0		150mS,		resistive	load	250	X	X
0. Down-prog response time full-load	mS mS	10 500	600	50 700	800	000	1000	1100	1100	1200	1500	2000	2500	250 4000	X	X
0. Down-prog response time No-load 1. Transient response time (*8)	mS mS			c for mo	dels un	to and i	ncluding	1001/ 2	mSec for	r model	sahove		2500	4000	X	X
2. Temp. drift	%	0.01%	f rated \	out ove	r 8hrs in	terval fo	ollowing	30 mini	utes warı	m up. Co	nstant	line, loa	d & tem	p.	X	X
.2 CONSTANT CURRENT MODE							9									
. Max.line regulation (0.01% of lo+ 2mA)(*4)	mA	12	11	8.0	5.8	4.5	3.9		3.25	2.95	2.75	2.5	2.25	2.13	Х	
. Max.load regulation (0.02% of lo+5mA)(*6)	mA	25	23	17	12.6	10	8.8		7.5	6.9	6.5	6.0	5.5	5.26	Х	
B. Ripple r.m.s 5Hz~1MHz . (*7)	mA	190	160	110	50	45	30		15	10	10	8	6	4	Χ	<u> </u>
4. Max.line regulation (0.01% of lo+2mA)(*4)	mA	22	20	14	9.6	7.0	5.8	5	4.5	3.9	3.5	3.0	2.5	2.26	-	X
i. Max.load regulation (0.02% of lo+5mA)(*6)	mA mA	45 350	41 300	29 210	20.2 120	15 60	12.6 65	11 60	10 60	8.8 40	8.0	7.0 15	6.0	5.52 7		X
7. Temp. coefficient		C 70PPM/									20	ı ıJ	1 13		X	X
B. Temp. drift	%	0.01% c	f rated \	out ove	r 8hrs in	terval fo	llowing	30 mini	utes warı	m up. Co					Х	X
. Warm up drift	%			ated out											Χ	X
.3 PROTECTIVE FUNCTIONS																
. OCP				nt Curre											X	Х
2. OCP Foldback		Output	shut do	wn whei	<u>n power</u>	supply	<u>change</u>	<u>from CV</u>	to CC. U	<u>ser sele</u>	<u>ctable.</u>				X	X
B. OVP type I. OVP trip point		0 F . 7 FV	r shut-de	own, ma 1~15V	nual res	et by AC	. input re	ecycle o	r by OUT	button	or by co	mmuni	cation p	ort	X	X
i. Over Temp Protection				, latched				J~3/V	J~00V	J~00V	3~1100	J~103V	J~330V	J~000V	X	X
		030130	icctubic	, laterica	01 11011	iaterica										, ,
I.4 ANALOG PROGRAMMING AND MONITORIN I. Vout Voltage Programming	<u>u</u>	0~100%	6 0~5V	or 0~10V	IICAT CA	Jact Ac	curacy a	nd linaa	rity:/_0	5% of r	ated Vo	ut			Х	X
2. lout Voltage Programming		0~1009	6.0~5V	or 0~10V	, user se	lect. Ac	curacy a	nd linea	rity: +/-0	% of rate	ed lout.	ut.			X	X
3. Vout Resistor Programming		0~1009	6,0~5/10	0Kohm f	ull scale	user sel,	ect.,Ácc	uracy ar	nd Íineari	ity: +/-1 ^c	% of rate	ed Vout.			X	X
1. lout Resistor Programming				0Kohm f								ted lout			X	X
5. On/Off control (rear panel) 6. Output Current monitor				oltage: 0- accuracy				act, use	r seiecta	bie logi	<u> </u>				X	X
7. Output Voltage monitor		0~5V o	r 0~10V,	accuracy	<i>r</i> : 1%, us	er selec	table								X	X
3. Power Supply OK signal		TTL hig	h (4~5V) -OK, 0V	-Fail 500	ጋohm se	ries resi	stance							X	X
P. CV/CC indicator		Open c	ollector.	CC mod	e: On, C	V mode:	: Off, Ma	ximum י	voltage:	30V, ma	<u>ximum :</u>	sink curi	<u>ent: 10r</u>	nA	X	X
0. Enable/Disable 1. Local/Remote analog control		Dry cor	itact. Op	en: off, S	hort: or	1. Max. v	oltage a	at Enable	e/Disable	e in: 6V	1	al .			X	X
2. Local/Remote analog control indicator		Onen c	uricai sig	nai or O	<u> </u>	or it: $0 \sim 0$.										1 A
2. Local, Herriote analog control maleator			nuector	I OCAL ()	nen Rei	mote: O	n Maxir	num vol	<u>10te, 2~1</u> tage: 30\	5V or op	<u>en: Loc</u> num sin	aı. k curren	t· 5mA		X	X
I E EDONT DANEI		Орене	ollector,	Local: O	pen, Ke	mote: O	n. Maxir	num vol	tage: 30\	5V or op V, maxin	en: Loc num sin	k curren	t: 5mA.		X	X
1.5 FRONT PANEL			,				n. Maxir	num vol	tage: 30\	/, maxin	num sin	k curren	t: 5mA.		X	Х
		Vout/lo	ut manı	ual adjus al adjust	t by sep	arate en	n. Maxin	num vol	tage: 30\	/, maxin	num sin	k curren	t: 5mA.		X	X
		Vout/Io OVP/U\ AC on/o	ut manu /L manu off, Outp	ual adjus al adjust out on/of	t by sep by Volt f, Re-sta	arate en . Adjust art mode	n. Maxin coders (encoder es (auto,	coarse a	tage: 30\ and fine a	v, maxin adjustm control (ent sele	k curren ctable) (2), Go to		ntrol	X X X	X X X
		Vout/lo OVP/U\ AC on/o Addres	ut manu /L manu off, Outp	ual adjus al adjust out on/of on by Vo	t by sep by Volt f, Re-sta Itage (o	arate en . Adjust ert mode r curren	n. Maxin coders (encoder es (auto, t) adjust	coarse a safe), Fo	and fine and	djustm control (er of add	ent sele	k curren ctable) (2), Go to		entrol	X X X X	X X X X
1.5 FRONT PANEL 1. Control functions		Vout/lo OVP/U\ AC on/o Addres RS232/	ut manu /L manu off, Outp s selecti 185 and	ual adjus al adjust out on/of on by Vo IEEE488.	t by sep by Volt f, Re-sta ltage (o 2 select	arate en . Adjust art mode r curren ion by II	n. Maxin ncoders (encoder es (auto, t) adjust EEE enak	coarse a safe), Fo encode ble switc	and fine and	djustm control (er of add	ent sele	k curren ctable) (2), Go to		entrol	X X X X X	X X X X X
. Control functions		Vout/Io OVP/UV AC on/o Addres RS232/4 Baudra	ut manu /L manu off, Outp s selecti 485 and te select	ual adjust al adjust out on/of on by Vo IEEE488. ion: 1200	t by sep by Volt f, Re-sta ltage (o 2 select 0, 2400, cv: 0.05%	arate en . Adjust art mode r curren ion by If 4800, 90 %+/-1 co	n. Maxin encoders (encoder es (auto, t) adjust EEE enak 500 and	coarse a safe), Fo encode ble switc	and fine and	djustm control (er of add	ent sele	k curren ctable) (2), Go to		entrol	X X X X	X X X X
. Control functions		Vout/Io OVP/UV AC on/o Addres RS232/4 Baudra Voltage Current	ut manu /L manu off, Outp s selecti 185 and te select 4 digits	ual adjus al adjust out on/of on by Vo IEEE488. cion: 1200 g, accurac	t by sep by Volt. f, Re-sta ltage (o 2 select 0, 2400, cy: 0.05%	arate en . Adjust art mode r curren ion by II 4800, 96 %+/-1 co +/-1 cou	n. Maxin ecoders (encoder es (auto, t) adjust EEE enak 500 and unt	coarse a safe), Fo encode ole swite 19,200	tage: 30\ and fine a oldback c rr. Numb h and Dl	V, maxin adjustm control (er of add P switch	ent sele CV to CC dresses:	ctable) C), Go to		entrol	X X X X X X X	X
		Vout/Io OVP/UV AC on/o Addres RS232/4 Baudra Voltage Current	ut manu /L manu off, Outp s selecti 185 and te select 4 digits	ual adjust al adjust out on/of on by Vo IEEE488. ion: 1200	t by sep by Volt. f, Re-sta ltage (o 2 select 0, 2400, cy: 0.05%	arate en . Adjust art mode r curren ion by II 4800, 96 %+/-1 co +/-1 cou	n. Maxin ecoders (encoder es (auto, t) adjust EEE enak 500 and unt	coarse a safe), Fo encode ole swite 19,200	tage: 30\ and fine a oldback c rr. Numb h and Dl	V, maxin adjustm control (er of add P switch	ent sele CV to CC dresses:	ctable) C), Go to		entrol	X X X X X X X X X	X
2. Display B. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB /	LAN In	Vout/Io OVP/UV AC on/o Addres RS232/4 Baudra Voltage Current Voltage	ut manu /L manu off, Outp s selecti 185 and te select 4 digits 4 digits c, Curren	ual adjus al adjust out on/of on by Vo IEEE488. ion: 1200 i, accurac i, accurac it, Alarm,	t by sep by Volt. f, Re-sta ltage (o 2 select 0, 2400, cy: 0.05% y: 0.2% Fine, Pr	arate en . Adjust irt mode r curren ion by Il 4800, 96 6+/-1 cou +/-1 cou review, F	n. Maxin acoders (encoder es (auto, t) adjust EEE enak 500 and ount int Foldback	coarse a safe), Fc encode ole switc 19,200	tage: 30\ and fine a oldback cer. Number th and DI	ontrol (er of add P switch	ent sele CV to CC dresses:	k curren ctable) C), Go to 31	local co		X	X
2. Display B. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model	/ LAN In	Vout/Io OVP/UV AC on/o Addres RS232/4 Baudra Voltage Current Voltage	ut manu /L manu off, Outp s selecti 185 and te select 4 digits	ual adjus al adjust out on/of on by Vo IEEE488. cion: 1200 g, accurac	t by sep by Volt. f, Re-sta ltage (o 2 select 0, 2400, cy: 0.05%	arate en . Adjust art mode r curren ion by II 4800, 96 %+/-1 co +/-1 cou	n. Maxin ecoders (encoder es (auto, t) adjust EEE enak 500 and unt	coarse a safe), Fo encode ole swite 19,200	tage: 30\ and fine a oldback c rr. Numb h and Dl	V, maxin adjustm control (er of add P switch	ent sele CV to CC dresses:	ctable) C), Go to		entrol 600	X X X X X X X X X	X
2. Display B. Indications 1.6 Interface RS-232&RS-485 or Optional GPIB / Model 1. Remote Voltage Programming (16 bit)	V	Vout/lo OVP/UV AC on/o Addres RS232/d Baudra Voltage Current Voltage	ut manu /L manu off, Outp s selecti 185 and te select 4 digits 4 digits c, Curren	ual adjust al adjust out on/of on by Vo IEEE488. ion: 1200 , accurac , accurac t, Alarm,	t by sep by Volt. f, Re-sta ltage (o 2 select 0, 2400, y: 0.059 y: 0.2% Fine, Pr	arate en Adjust art mode r curren ion by II 4800, 96 6+/-1 cou +/-1 cou review, F	n. Maxir ecoders (encoders) s (auto, t) adjust EEE enak 500 and unt int foldback	coarse a safe), Fo encode ole switc 19,200	and fine a soldback corr. Number h and DI	ontrol (er of add P switch	ent sele CV to CC dresses: t Panel	ctable) C), Go to 31 Lock	local co	600	X	X X X X X X X X X X X
. Control functions 2. Display 3. Indications 4. 6 Interface RS-232&RS-485 or Optional GPIB / Model 5. Remote Voltage Programming (16 bit) 6. Resolution (0.02% of Vo Rated)	V mV	Vout/lo OVP/UV AC on/o Addres RS232/e Baudra Voltage Current Voltage tterface 6	ut manu/L manu off, Outp s selecti 185 and te select 4 digits 4 digits c, Curren	ual adjust al adjust out on/of on by Vo IEEE488. iion: 1200 accurac t, Accurac t, Alarm,	t by sep by Volt. f, Re-sta ltage (o 2 select 0, 2400, y: 0.059 y: 0.2% Fine, Pr	arate en Adjust art mode r curren ion by II 4800, 96 6+/-1 cou +/-1 cou review, F	n. Maxir coders (encoders) encoders (encoders) s (auto, t) adjust EEE enak 600 and unt oldback 40	coarse a safe), Fc encode ole switc 19,200	and fine a soldback c.r. Numb. h and DI	djustm adjustm control (er of add P switch Dn, Fron 80	ent sele CV to CC dresses: 1 100 2.0	ctable) C), Go to 31 Lock 3.0	300 6.0	600	X	X
. Control functions 2. Display 3. Indications 3. 6 Interface RS-232&RS-485 or Optional GPIB / Model 4. Remote Voltage Programming (16 bit) 5. Resolution (0.02% of Vo Rated) 6. Accuracy 0.05%Vo Rated Output Voltage (*11)	V	Vout/lo OVP/UV AC on/o Addres RS232/d Baudra Voltage Current Voltage	ut manu /L manu off, Outp s selecti 185 and te select 4 digits 4 digits c, Curren	ual adjust al adjust out on/of on by Vo IEEE488. ion: 1200 , accurac , accurac t, Alarm,	t by sep by Volt. f, Re-sta ltage (o 2 select 0, 2400, y: 0.059 y: 0.2% Fine, Pr	arate en Adjust art mode r curren ion by II 4800, 96 6+/-1 cou +/-1 cou review, F	n. Maxir ecoders (encoders) s (auto, t) adjust EEE enak 500 and unt int foldback	coarse a safe), Fo encode ole switc 19,200	and fine a soldback corr. Number h and DI	ontrol (er of add P switch	ent sele CV to CC dresses: t Panel	ctable) C), Go to 31 Lock	local co	600	X	X X X X X X X X X X X X
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^{*1:} Minimum voltage is guaranteed to maximum 0.2% of Vo Rated.



^{*2:} Minimum current is guaranteed to maximum 0.4% of lo Rated. *3: At maximum output power. *4: 85~132Vac or 170~265Vac, constant load.

^{*8:} Time for the output voltage to recover within 0.5% of its rated for a load change 10~90% of rated output , Output set-point:10~100%.
*9: For 6V~300V models: measured with JEITA RC-9131A 1:1 probe. For 600V model: measured with 10:1 probe Accuracy -Values have been calculated at Vo Rated & Io Rated.



General Specifications Genesys™ 750W/1500W

2.1 INPUT CHARACTERISTICS	
1. Input voltage/freg. (*1)	85~265Vac continuous, 47~63Hz, single phase
2. Power Factor	0.99 @100/200Vac, rated output power.
3. EN61000-3-2.3 compliance	Complies with EN61000-3-2 class A and EN61000-3-3 at 20~100% output power.
4. Input current 100/200Vac	750W:10.5A / 5A, 1500W:21A / 11A
5. Inrush current 100/200Vac	750W:Less than 25A. 1500W:Less than 50A
6. Hold-up time	More than 20ms. 100Vac. at 100% load.
o. Hold-up tillle	Note than 2011s, 100vac, at 100vi load.
2.2 POWER SUPPLY CONFIGURATION	
1. Parallel Operation	Up to 4 units in master/slave mode with single wire current balance connection
2. Series Operation	Up to 2 units, with external diodes. 600V Max to Chassis ground
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2.3 ENVIRONMENTAL CONDITIONS	I
1. Operating temp	0~50°C, 100% load.
2. Storage temp	-20~70°C
3. Operating humidity	30~90% RH (non-condensing).
4. Storage humidity	10~95% RH (non-condensing).
5. Vibration	MIL-810E, method 514.4, test cond. I-3.3.1. The EUT is fixed to the vibrating surface.
6. Shock	Less than 20G, half sine, 11mSec. Unit is unpacked.
7. Altitude	Operating: 10000ft (3000m), Derat output current by 2%/100m above 2000m, Non operating: 40000ft (12000m).
2.4 EMC	
1. Applicable Standards:	
2. ESD	IEC1000-4-2. Air-disch8KV, contact disch4KV
3. Fast transients	IEC1000-4-4.2KV
4. Surge immunity	IEC1000-4-5. 1KV line to line, 2KV line to ground
5. Conducted immunity	IEC1000-4-6, 3V
6. Radiated immunity	IEC1000-4-3, 3V/m
7. Conducted emission	EN55022B, FCC part 15J-B, VCCI-B.
8. Radiated emission	EN55022A, FCC part 15-A, VCCI-A.
9. Voltage dips	EN61000-4-11
10. Conducted emission	EN55022B, FCC part 15-B, VCCI-B.
11. Radiated emission	EN55022A, FCC part 15-A, VCCI-A.
2.5 SAFETY	ENSOZZI, TEC Part 15 7, VECT 7.
1.Applicable standards:	UL 60950-1. CSA22.2 No.60950-1. IEC 60950-1. EN 60950-1
1.Applicable stalluarus.	Models with Vout 50V: Output is SELV, all communication/control interfaces (RS232/485, IEEE, Isolated Analog,
	LAN, Sense, Remote Programming and Monitoring) are SELV.
	Models with 60V Yout 400V: Output is Hazardous, communication/control interfaces: RS232/485, IEEE,
2.Interface classification	Isolated Analog, LAN, Remote Programing and Monitoring (pins 1-3, pins14-16) are SELV, Sense, Remote
Z.meriaee classification	Programming and Monitoring (pins 8-13 pins 21-25) are Hazardous
	Programming and Monitoring (pins 8-13, pins 21-25) are Hazardous. Models with 400V Vout 600V: Output is Hazardous, all communication/control interfaces (RS232/485, IEEE,
	Isolated Analog, I AN, Sense Remote Programming and Monitoring) are Hazardous
	Isolated Analog, LAN, Sense, Remote Programming and Monitoring) are Hazardous. Vout 50V models: Input-Output (SELV): 4242VDC 1min, Input-communication/control (SELV): 4242VDC 1min,
	Input-Ground: 2828VDC 1min,
	60V Vout 150V models: Input-Output (Hazardous): 3425VDC 1min, Input-communication/control (SELV):
2 With the death of the co	4242VDC 1min, Output(Hazardous)-SELV: 2307VDC 1min, Output(Hazardous)-Ground: 1414VDC 1min,
3.Withstand voltage	Input-Ground: 2828VDC 1min
	300V Vout 600V models: Input-Output(Hazardous): 3490VDC 1min, Input-communication/control (SELV):
	4242VDC 1min, Hazardous, Output-communication/control(SELV): 4242VDC 1min,
	Output(Hazardous)-Ground: 2738VDC 1min, Input-Ground: 2828VDC 1min.
4.Insulation resistance	More than 100Mohm at 25°C , 70% RH.
2.6 MECHANICAL CONSTRUCTION	
1. Cooling	Forced air flow: from front to rear. No ventilation holes at the top or bottom of the chassis; Variable fan speed.
2. Dimensions (WxHxD)	W: 422.8mm, H: 43.6mm, D: 432.8mm (excluding connectors, encoders, handles, etc.)
3. Weight	750W: 7Kq (15 Lbs) 1500W: 8.5Kq (18 Lbs)
	750W: IEC320 AC Inlet.
4. AC Input connector	1500W: Screw terminal block, Phoenix P/N: FRONT-4-H-7.62, with strain relief
5. Output connectors	6V to 60V models: Bus-bars (hole Ø 8.5mm). 80V to 600V models: wire clamp connector. Phoenix P/N: FRONT-4-H-7.62
a. a arp at commercial	,

^{*1:} For cases where conformance to various safety standards (UL, IEC etc.) is required, to be described as 100-240Vac (50/60Hz). All specifications subject to change without notice.

5 years.



2.7 RELIABILITY SPECS
1. Warranty

Genesys[™] Power Parallel and Series Configurations

Parallel operation - Master/Slave:

Active current sharing allows up to four identical units to be connected in an auto-parallel configuration for four times the output power. In Advanced Parallel Master/Slave Mode, total current is programmed and reported by the Master, Up to four supplies act as one.



Series operation

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



Remote Programming via RS-232 & RS-485 Interface

Standard Serial Interface allows chain control of up to 31 power supplies on the same bus with built-in RS-232 & RS-485 Interface.







P/N: IEEE

Programming Options (Factory installed)

Digital Programming via IEEE Multi-Drop Interface

- Allows IEEE Master to control up to 30 slaves over RS-485 daisy-chain
- Only the Master needs be equipped with IEEE Interface
- IEEE 488.2 SCPI Compliant
- Program Voltage
- Measure Voltage
- Over Voltage setting and shutdown
- Error and Status Messages

- Program Current
- Measure Current
- Current Foldback shutdown

Isolated Analog Programming

Four Channels to Program and Monitor Voltage and Current. Isolation allows operation with floating references in harsh electrical environments. Choose between programming with Voltage or Current. Connection via removable terminal block: Phoenix MC1.5/8-ST-3.81.

- Voltage Programming, user-selectable 0-5V or 0-10V signal.
 Power supply Voltage and Current Programming Accuracy ±1%
 Power supply Voltage and Current Monitoring Accuracy ±1.5%
- Current Programming with 4-20mA signal.
 Power supply Voltage and Current Programming Accuracy ±1%
 Power supply Voltage and Current Monitoring Accuracy ±1.5%

P/N: IS510

P/N: IS420

P/N: LAN

LAN Interface

Meets all LXI-C Requirements

- Address Viewable on Front Panel
- Fixed and Dynamic Addressing
- Compatible with most standard Networks

Compliant to Class C

- VISA & SCPI Compatible
- LAN Fault Indicators
- Auto-detects LAN Cross-over Cable
- Fast Startup





Power Supply Identification / Accessories How to order

GEN Factory Options AC Cable option is 750W only Series Output Output **Option: IEEE** Region: E - Europe Voltage Current GB - United Kingdom Name **IS510** $(0 \sim 600 \text{V})$ (0~2.6A)**IS420** J - Japan LAN I - Middle East U- North America

Models 750/1500W

Model	Output Voltage VDC	Output Current (A)	Output Power (W)
GEN6-100	0~6V	0~100	600
GEN6-200	U~6V	0~200	1200
GEN8-90	0~8V	0~90	720
GEN8-180	U~8V	0~180	1440
GEN12.5-60	0~12.5V	0~60	750
GEN12.5-120	U~12.5V	0~120	1500
GEN20-38	0~20V	0~38	760
GEN20-76	U~2UV	0~76	1520
GEN30-25	0~30V	0~25	750
GEN30-50	U~3UV	0~50	1500
GEN40-19	0 401/	0~19	760
GEN40-38	0~40V	0~38	1520

Model	Output Voltage VDC	Output Current (A)	Output Power (W)
GEN50-30	0~50V	0~30	1500
GEN60-12.5	0 601/	0~12.5	750
GEN60-25	0~60V	0~25	1500
GEN80-9.5	0~80V	0~9.5	760
GEN80-19	U~8UV	0~19	1520
GEN100-7.5	0 1001/	0~7.5	750
GEN100-15	0~100V	0~15	1500
GEN150-5	0 1501/	0~5	750
GEN150-10	0~150V	0~10	1500
GEN300-2.5	0.2001/	0~2.5	750
GEN300-5	0~300V	0~5	1500
GEN600-1.3	0 6001	0~1.3	780
GEN600-2.6	0~600V	0~2.6	1560

Factory option

RS-232/RS-485 Interface built-in Standard GPIB Interface Voltage Programming Isolated Analog Interface Current Programming Isolated Analog Interface LAN Interface (Complies with LXXI Class C)

P/N

IEEE IS510 IS420 LAN

AC Cords sets (750W only)

Region	Europe	United Kingdom	Japan	Middle East	North America
Output Power	750W	750W	750W	750W	750W
AC Cords	10A/250Vac L=2m	10A/250Vac L=2m	13A/125Vac L=2m	10A/250Vac L=2m	13A/125Vac L=2m
Wall Plug	INT'L 7/VII	BS1363		SI-32	NEMA 5-15P
Power Supply	IEC320-C13	IEC320-C13	IEC320-C13	IEC320-C13	IEC320-C13
Connector					
Part Number	P/N: GEN/E	P/N: GEN/GB	P/N: GEN/J	P/N: GEN/I	P/N : GEN/U

Accessories

1. Communication cable

RS-232/RS-485 Cable is used to connect the power supply to the PC Controller.

Mode	RS-485	RS-232	RS-232
PC Connector	DB-9F	DB-9F	DB-25F
Communication Cable	Shield Ground L=2m	Shield Ground L=2m	Shield Ground L=2m
Power Supply Connector	EIA/TIA-568A (RJ-45)	EIA/TIA-568A (RJ-45)	EIA/TIA-568A (RJ-45)
P/N	GEN/485-9	GEN/232-9	GEN/232-25

2. Serial link cable*

Daisy-chain up to 31 Genesys[™] power supplies.

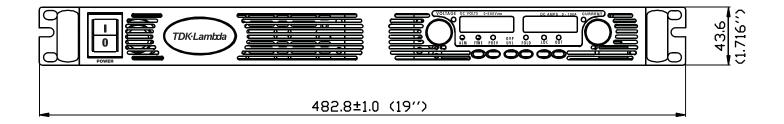
I	Mode	Power Supply Connector	Communication Cable	P/N
F	RS-485	EIA/TIA-568A (RJ-45)	Shield Ground L=50cm	GEN/RJ45

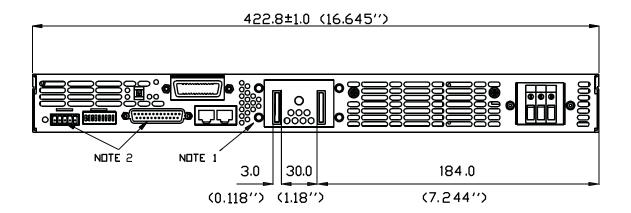
^{*} Included with power supply





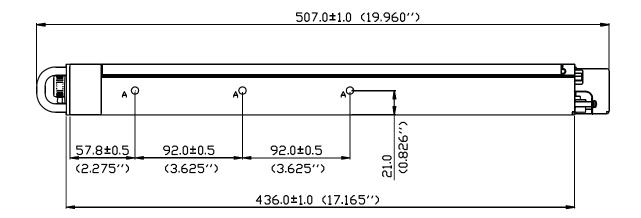
Outline Drawing Genesys™ 750W/1500W Units







8 | **GENESYS**™ | 750-1500kW ⁻



NOTE

- 1. Bus bars for 6v to 60v models (shown)
 Wire clamp connector for 80V to 600V models
- 2. Plug connectors included with the power supply
- 3. Chassis slides mounting holes #10-32 marked "A" GENERAL DEVICES P/N: C-300-S-116 or equivalent

- 750-1500kW | **GENESYS™** | **9**



Improved 5 Specifications

Genesys**

Programmable DC Power Supplies
2.4kW in 1U
Built in RS-232 & RS-485 Interface
Advanced Parallel Operation
Auxiliary Outputs 5V & 15V

Optional Interface:

LXI Compliant LAN
IEEE488.2 SCPI (GPIB) Multi-drop
Isolated Analog Programming



Genesys™ Family GenH 750W Half Rack Gen1U 750/1500W Full Rack Gen2U 3.3/5kW

TDK-Lambda



TDK·Lambda

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

Features include:

- · High Power Density 2.4kW in 1U
- Wide Range of popular worldwide AC inputs, 1ø (230VAC) & 3ø (208VAC)
- Active Power Factor Correction (Single-Phase & Three-Phase AC Input)
- Output Voltage up to 600V, Current up to 300A
- Auxillary Outputs 5V/0.2A; 15V/0.2A for increased system control functionality
- Built-in RS-232/RS-485 Interface Standard
- Global Commands for Serial RS-232/RS-485 Interface
- Auto-Re-Start / Safe-Start: user selectable
- Last-Setting Memory
- High Resolution 16 bit ADCs & DACs
- Low Ripple & Noise
- Front Panel Lock selectable from Front Panel or Software
- Reliable Encoders for Voltage and Current Adjustment
- Constant Voltage/Constant Current auto-crossover
- Parallel Operation with Active Current Sharing; up to four identical units.
- Advanced Parallel Master / Slave. Total Current is Programmed and Measured via the Master.
- Independent Remote ON/OFF and Remote Enable/Disable
- External Analog Programming and Monitoring (user selectable 0-5V & 0-10V)
- Reliable Modular and SMT Design
- 19" Rack Mount capability for ATE and OEM applications
- Optional Interfaces
 IEEE 488.2 SCPI (GPIB) Multi-Drop

Compliant LAN

- LabView® and LabWindows® drivers
- Five Year Warranty

Worldwide Safety Agency Approvals; CE Mark for LVD and EMC Regulation





Applications

GenesysTM power supplies have been designed to meet the demands of a wide variety of applications.

System Designers will appreciate new, standard, remote programming features such as Global commands.

Also, new high-speed status monitoring is available for the RS-485 bus.

Test Systems using the IEEE-488 bus may achieve significant cost savings by incorporating the Optional IEEE Multi-Drop Interface for a Master and up to 30 RS-485 Multi-Drop Slaves.

Higher power systems can be configured with up to four 2.4kW modules. Each module is 1U with zero space between them (zero stack).

Flexible configuration is provided by the complete GenesysTM Family: 1U 750W Half-Rack, 1U 750W and 1500W Full-Rack, 2U 3.3kW & 5kW. All are identical in Front Panel, Rear Panel Analog, and all Digital Interface Commands.

A wide variety of outputs allows testing of many different devices.

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



Front Panel Description



- 1. ON/OFF Switch
- 2. Air Intake allows zero stacking for maximum system flexibility and power density.
- 3. Reliable encoder controls Output Voltage, Address, OVP and UVL settings.
- 4. Volt Display shows Output Voltage and directly displays OVP, UVL and Address settings.
- 5. Reliable encoder controls Output Current, sets baudrate and Advanced Parallel mode.
- 6. Current Display shows Output Current and displays Baud rate. Displays total current in Parallel Master/Slave Mode
- 7. Function/Status LEDs:
- Alarm

- Fine Control
- Preview Settings

- Foldback Mode
- Remote Mode
- Output On
- 8. Pushbuttons allow flexible user configuration
- 8. Pushbuttons allow flexible user configuration
 - Coarse and Fine adjustment of Output Voltage/Current and Advanced Parallel Master or Slave select.
 - Preview settings and set Voltage/Current with Output OFF, Front Panel Lock
 - · Parallel Master/Slave
 - Set OVP and UVL Limits
 - Set Current Foldback Protection
 - Go to Local Mode and select Address and Baud rate
 - Output ON/OFF and Auto-Re-Start/Safe-Start Mode

Rear Panel Description



- 1. Remote/Local Output Voltage Sense Connections.
- 2. DIP Switches select 0-5V or 0-10V Programming and other functions.
- 3. DB25 (Female) connector allows (Non-isolated) Analog Program and Monitor and other functions.
- 4. RS-485 OUT to other Genesys™ Power Supplies.
- 5. RS-232/RS-485 IN Remote Serial Programming.
- 6. Output Connections: Rugged busbars (shown) for up to 100V Output; wire clamp connector for Outputs >100V.
- 7. Exit air assures reliable operation when zero stacked.
- 8. Input: 230VAC Single Phase (shown), 208 VAC Three Phase, 50/60 Hz AC Input Connector: Phoenix P/N: FRONT-4-H-7.62.
- 9. Optional Interface Position for IEEE 488.2 SCPI (shown) or Isolated Analog Interface or LAN Interface.
- 10. Auxiliary Output Voltage Connector. Phoenix P/N: IMC1.5/7-ST-3.81





Genesys ™ 2.4kW Specifications

2.4KW Specific														
1.0 MODEL MODEL	GEN	8-300	10-240	16-150	20-120	30-80	40-60	60-40	80-30	Specifica 100-24	tions in b 150-16	lue are ii 300-8	nproved 600-4	
1.Rated output voltage(*1)	V	8	10-240	16	20-120	30-80	40-60	60	80	100-24	150-16	300-8	600	
2.Rated Output Current(*2)	Α	300	240	150	120	80	60	40	30	24	16	8	4	
3.Rated Output Power 1.1 CONSTANT VOLTAGE MODE	W	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	
1.Max.line regulation (0.01% of rated Vo+ 2mV)(*6)	mV	2.8	3	3.5	4	5	6	8	10	12	17	32	62	
2.Max load regulation (0.015% of rated Vo+5mV)(*7)		6.2	6.5	7.25	8	9.5	11	14	17	20	27.5	50	95	
3.Ripple and noise p-p 20MHz (*8)	mV	50	50	50	50	55	55	60	60	70	90	150	240	
4.Ripple r.m.s 5Hz~1MHz 5.Remote sense compensation/wire	mV V	6	<u>6</u> 2	6	6	<u>6</u> 5	5	5	<u>7</u> 5	10	20 5	45 5	60 5	
6.Temp. coefficient		50PPM/°	C of rate	d output	voltage,	ollowing	30 minute	s warm-u	D					
7.Temp. stability			0.01% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temp. ess than 0.05% of rated output voltage+2mV over 30 minutes following power On.											
8.Warm-up drift 9.Up-prog. response time, 0~Vo Rated (*9)	mS	Less than	0.05% of		out voltag	e+2mV ov	<u>/er 30 min</u> 20		ving pow 40	er On. 40	60	80	100	
10.Down-prog response Full-load (*9)	mS	10	10	15 20	20	20	20	30	50	50	80	100	100	
time No-load (*10)	mS	500	500	500	500	600	700	1100	1200	1500	2500	3000	3000	
11 Transient response time	mS	Time for c	utput vol1	tage to rec	over within	n 0.5% of it	s rated ou	tput for a lo	ad chang	e 10-90% d	of rated ou	tput curre	nt.Outpu	
11.Transient response time	1113	set-point	: 10-100%	, local sen	se. Less th	an 1mSec	for mode	ls up to ar	ıd includii	ng 100V.2	msec for n	nodels ab	ove 100V	
1.2 CONSTANT CURRENT MODE			26	1 47	- 44	10					2.6	2.0	2.4	
1.Max.line regulation (0.01% of rated lo+2mA)(*6) 2.Max.load regulation (0.02% of rated lo+5mA)(*11)		32 65	26 53	17 35	14 29	10 21	8 17	13	5 11	9.8	3.6 8.2	2.8 6.6	2.4 5.8	
3.Ripple r.m.s 5Hz~1MHz . (*12)	mA	700	500	400	250	150	90	60	40	30	12	10	5	
4.Load regulation thermal drift		Less than	0.1% of ra	ted outpu	ut current	over 30 m	inutes fol	lowing loa	d change					
5.Temp. coefficient	PPM/°C	70PPM/9									10:			
6.Temp. stability										ant line, lo		oerature.		
7.Warm-up drift										following				
1.3 PROTECTIVE FUNCTIONS										. Jiio willig				
1. OCP			Constant (
2. OCP Foldback								CC. User s						
3. OVP type 4. OVP trip point		0.5 - 10V	hut-dowr	1~18V	reset by A	Cinput re	cycle or by			communio 5~110V				
5. Output Under Voltage Limit		Preset by	front pan	el or com	municatio	n port. Pr	events fro			elow limit.		J.~330V	J.~000V	
6. Over Temp. Protection				tched or n					.9					
1.4 ANALOG PROGRAMMING AND MONITO	RING	T												
1.Vout Voltage Programming 2.lout Voltage Programming (*13)								y:±0.5% of y:±1% of ra		ut.	-			
3.Vout Resistor Programming								linearity: ±		ed Vout				
4.lout Resistor Programming (*13)								inearity:±						
5.On/Off control (rear panel)		By electrical. Voltage: 0~0.6V/2~15V,or dry contact ,user selectable logic. 0~5V or 0~10V , Accuracy:±1% , user selectable.												
6.Output Current monitor (*13)							-	-						
7.Output Voltage monitor 8.Power Supply OK signal				uracy:±19 K, 0V-Fail			tanco							
9. CV/CC Indicator								tage: 30V.	maximun	n sink curr	ent: 10mA	\		
10. Enable/Disable		Dry conta	ct. Open:	off , Short	on. Max.	voltage a	t Enable/D	isable in:	6V.			-		
11. Local/Remote analog control								e, 2~15V o						
12. Local/Remote analog control Indicator 1.5 FRONT PANEL		Open col	lector, Loc	cal: Off, Re	mote: On.	Maximur	n voltage:	30V, maxi	mum sink	current: 1	0mA.			
1.5 FRONT PANEL		Vout/Iou	t manual	adjust hy	senarate e	ncoders (coarse and	d fine adiu	stment se	electable).				
				djust by V				a mic dajo	Jennene Je	cicciabic _i .				
1.Control functions), Go to lo	cal control			
							encoder. N	Number of	addresse	s:31.				
				<u>tomatic re</u> n: 1200,240			9 200							
3 Display		Voltage: 4	4 digits , A	ccuracy:	0.05% of	rated ou	tput Volt	age ±1 co	ount.					
2.Display		Current: 4	4 digits, A	ccuracy:	0.2% of ra	ated out	out curre	nt ±1 cou	nt.					
3.Indications		J - ,			,			,		el Lock, CV	CC.			
1.6 Interface Specifications for the GENESY														
1. Remote Voltage Programming (16 bit)	V	8	10	15	20	30	40	60	80	100	150	300	600	
Resolution (0.002% of Vo Rated) Accuracy (0.05% of Vo Rated) (*14)	mV mV	0.16 4	0.2 5	0.3	0.4 10	0.6 15	0.8	1.2 30	1.6 40	50	3 75	6 150	12 300	
· · · · · · · · · · · · · · · · · · ·	1117	- 4	<u> </u>	0	10	13			40	1 30	/3	130	300	
2. Remote Current Programming (16 bit) Resolution (0.002% of Io Rated)	mA	6	4.80	3.00	2.40	1.60	1.20	0.80	0.60	0.48	0.32	0.16	0.08	
Accuracy (0.2% of lo Rated) Accuracy (0.2% of lo Rated) (*13)		900	720	450	360	240	180	120	90	72	48	24	12	
3. Readback Voltage				*		-								
Resolution (% of Vo Rated)	%	0.002	0.011	0.007	0.006	0.004	0.003	0.002	0.002	0.011	0.007	0.004	0.002	
Resolution (Readback Voltage)	mV	0.16	1.10	1.05	1.20	1.20	1.20	1.20	1.60	11.00	10.50	12.00	12.00	
Accuracy (0.05% of Vo Rated)	mV	4	5	8	10	15	20	30	40	50	75	150	300	
4. Readback Current							T = -			T - '				
Resolution (% of lo Rated)	% ^	0.004	0.005	0.007	0.009	0.002	0.002	0.003	0.004	0.005	0.007	0.002	0.003	
Resolution (Readback Current) Accuracy (0.3% of lo Rated) (*13)	mA mA	900	720	10.5 450	10.8 360	1.6 240	1.2 180	1.2 120	1.2 90	1.2 72	1.120 48	0.160 24	0.120 12	
	11174	300	/ 20	430	_ 500	∠40	100	120	30	1 /2	70		12	
5. OVP/UVL Programming Resolution (0.1% of Vo Rated)	mV	8	10	15	20	30	40	60	80	100	150	300	600	
Accuracy (1% of Vo Rated)	mV	80	100	150	200	300	400	600	800	1000	1500	3000	6000	
*1. Minimum voltage is guaranteed to maximum 0.2					*10. Ero			d Output \						

- Minimum voltage is guaranteed to maximum 0.2% of rated output voltage. *1:
- Minimum current is guaranteed to maximum 0.4% of rated output current.
- *3: For cases where conformance to various safety standards (UL, IEC, etc.) is required, to be described as 190-240Vac (50/60Hz) for 3-Phase 208V models.
- 3-Phase 208V models: At 208Vac input voltage. With rated output power. Not including EMI filter inrush current, less than 0.2mSec.
- *5:
- 3-Phase 208V models: 170~265Vac, constant load. *6:
- From No-Load to Full-Load, constant input voltage. Maximum drop in Remote Sense.
- For 8V~300V models: Measured with JEITA RC-9131A (1:1) probe. For 600V model: Measured
- *9: From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated, resistive load with 10:1 probe.
- *10: From 90% to 10% of Rated Output Voltage.
- For load voltage change, equal to the unit voltage rating, constant input voltage.
- For 8V~16V models the ripple is measured from 2V to 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.
- The Constant Current programming readback and monitoring accuracy does not include the warm-up and Load regulation thermal drift.
- *14: Measured at the sensing point.





General Specifications Genesys™ 2.4kW

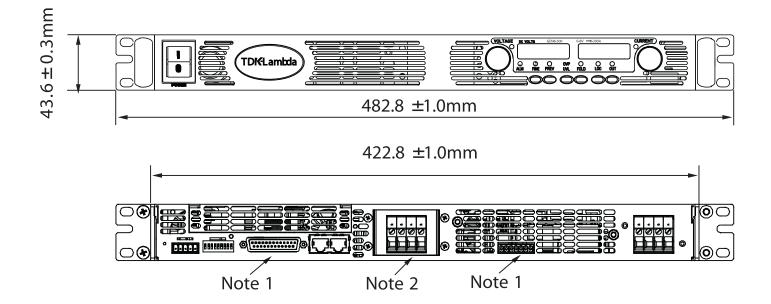
General Specifications		.595											
2.1 INPUT CHARACTERISTICS	GEN	8-300	10-240	16-150	20-120	30-80	40-60	60-40	80-30	100-24	150-16	300-8	600-4
1. Input voltage/freq. (*3)	VAC	<u> </u>	ase,230V m										
		3-Phase,	208V mode	els: 170~26	5Vac, 47~	63Hz			1				
2. Maximum Single Phase, 230V models:	A	17.3	17.3	17.3	16.8	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
at 100% load 3-Phase, 208V models:		10.5	10.5	10.5	10.2	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
3. Power Factor (Typ)				s: 0.99@23		d output p	ower. 3-Ph	ase mode	ls: 0.94@20	8Vac, rated	d output po	ower.	
4. Efficiency (*4)	%	84	84	86	86	86	88	88	88	88	88	88	87
5. Inrush Current (*5)	A	Single-Ph	ase and 3-	Phase 208	V models:	Less than :	50A						
2.2 POWER SUPPLY CONFIGURATION		lu					-	-					
1. Parallel Operation 2. Series Operation			entical uni entical uni				May to Cha		. d				
2.3 ENVIRONMENTAL CONDITIONS		Up to 2 to	entical uni	ts. with ex	ternai dio	des. 600v	viax to Cha	issis grour	iu				
1. Operating temp		0~50°C 1	00% load.										
2. Storage temp		-20~85°C	00701000.										
3. Operating humidity			RH (non-co	ndensing									
4. Storage humidity			RH (non-co										
5. Vibration		MIL-810F, method 514.5, The EUT is fixed to the vibrating surface.											
6. Shock		Less than 20G, half sine, 11mSec. Unit is unpacked.											
7. Altitude			g: 10000ft (0m above						000m, Alte	rnatively, d	erate maxi	mum amb	ient ten
8. RoHS Compliance		Complies	with the re	equiremer	nts of RoH	directive.							
2.4 EMC													
1. Applicable Standards:													
2.ESD			1-2. Air-disc	ch8KV, co	ontact disc	h4KV							
3.Fast transients		IEC1000-4			10/12								
4.Surge immunity 5.Conducted immunity		IEC1000-4	1-5. 1KV lin	e to line, 2	KV line to	grouna							
6.Radiated immunity		IEC1000-4			-		-	-					
7.Magnetic field immunity		+	4-8, 1A/m		-								
8.Voltage dips		EN61000-						-					
9.Conducted emission			A, FCC part	15-A. VCC	I-A.								
10. Radiated emission			A, FCC part			-							
2.5 SAFETY													
1. Applicable standards:		UL 60950	-1, CSA 22.	2 No. 6095	0-1,IEC 60	950-1, EN 6	0950-1		,				
			rith Vout 50 rogrammii							32/485, IEE	E, Isolated	Analog,L	AN, Sen
2.Interface classification		Models with 60V Vout 400V: Output is Hazardous, communication/control interfaces: RS232/485, IEEE, Isolated Analog, LAN Remote Programing and Monitoring (pins 1-3, pins 14-16), 5V d.c. auxiliary output are SELV, Sense, Remote Programming and Monitoring (pins 8-13, pins 21-25), 15V auxiliary output are Hazardous.											
		Models with 400V Vout 600V: Output is Hazardous, all communication/control interfaces-RS232/485, IEEE, Isolated Analog LAN, Sense, Remote Programming and Monitoring (all pins), 5V d.c./15V d.c. auxiliary outputs are Hazardous.											
		Vout 50V models: Input-Output/communication/control/auxiliary outputs (SELV): 4242VDC 1min, Input-Ground: 2828VDC 1min., Output/communication/control/auxiliary outputs (SELV)-Ground: 1000VDC 1min.											
3.Withstand voltage		60V Vout 100V models: Input-Output/15V d.c. auxiliary output/communication/control (Hazardous): 2600VDC 1min, Input-communication/control/5V d.c. auxiliary output (SELV): 4242VDC 1min, Output/15V d.c. auxiliary output/communication/control (Hazardous): - communication/control/5V d.c. auxiliary output (SELV): 1900VDC 1min,Output/15V d.c. auxiliary output/communication/control (Hazardous): - Ground: 1200VDC 1min,Input-Ground: 2828VDC 1min.											
		100V Vout 600V models: Input-Output/15V d.c. auxiliary output/communication/control (Hazardous): 4000VDC 1min, Input-communication/control/5V d.c. auxiliary output (SELV): 4242VDC 1min, Output/15V d.c. auxiliary output/communication/control (Hazardous): -communication/control/5V d.c. auxiliary output (SELV): 3550VDC 1min, Output/15V d.c. auxiliary output/communication/control (Hazardous): -Ground: 2670VDC 1min, Input-Ground: 2828VDC 1min.											
3.Insulation resistance		More tha	n 100Mohr	n at 25°C,	70% RH.								
2.6 MECHANICAL CONSTRUCTION		1											
1. Cooling		1								chassis; Va	riable fan	speed.	_
2. Dimensions (WxHxD)			n, H: 43.6m	ım, D: 441ı	mm (exclu	ding conn	ectors, enc	oders, har	ndles, etc.)				
3. Weight		Less than		andala D	wor Ca !	icon DC C	16/2 CF 10	16 cox!	with Ct'	roliaf			
4. AC Input connector (with Protective Cove	er)		ase,230V m										
5.Output connectors		<u> </u>	208V & 400							rain relief. onnector, P	hooniy D/N	I. EDONT	1_4.76
2.7 AUXILARY OUTPUTS		101 10 100	v models: I	ט צומע-נטע (ו	וטוב ש וט.:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	10 0000 11	ioueis. WI	e ciamp C	Jilliectol, P	HOCHIX F/IV	1. I NON 1-4	T 11-7.02
1. 15V Output (*8)		15V+ 5%	0.2A Max I	oad, Rinn	le & Noise	100mVn-r	reference	ed interna	ly to the n	egative ou	tout noten	tial.	
2.5V Output										M potential			
2.8 RELIABILITY SPECS		. = 5.75/6		ррі		р.			, 231	,			
1. Warranty		5 years.			-								
All specifications subject to change withou	t notice												

1. Warranty
All specifications subject to change without notice.

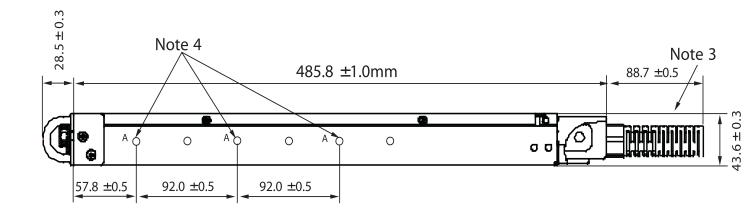




Outline Drawing Genesys™ 2.4kW Units







NOTE

- 1. Mating plug supplied with power supply.
- 2. Bus bars for 8V to 100V models. See Detail
- 2. Ac cable strain relief supplied with power supply.
- 4. Chassis slides mounting holes #10-32 marked "A". GENERAL DEVICES P/N: CC3001-00-5160 or equivalent.



Genesys[™] Power Parallel and Series Configurations

Parallel operation - Master/Slave:

Active current sharing allows up to four identical units to be connected in an auto-parallel configuration for four times the output power.



In Advanced Parallel Master/Slave Mode, total current is programmed and reported by the Master, Up to four supplies act as one.

Series operation

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

Remote Programming via RS-232 & RS-485 Interface

Standard Serial Interface allows daisy-chain control of up to 31 power supplies on the same communication bus with built-in RS-232 & RS-485 Interface.









Programming Options (Factory installed)

Digital Programming via IEEE Multi-Drop Interface

- Allows IEEE Master to control up to 30 slaves over RS-485 daisy-chain
- Only the Master needs be equipped with IEEE Interface
- IEEE 488.2 SCPI Compliant
- Program Voltage
- Measure Voltage
- Over Voltage setting and shutdown
- Error and Status Messages

- Program Current
- Measure Current
- Current Foldback shutdown

P/N: IEEE

Isolated Analog Programming

Four Channels to Program and Monitor Voltage and Current.

Isolation allows operation with floating references in harsh electrical environments.

Choose between programming with Voltage or Current.

Connection via removable terminal block: Phoenix MC1,5/8-ST-3.81.

Voltage Programming, user-selectable 0-5V or 0-10V signal.
 Power supply Voltage and Current Programming Accuracy ±1%

Power supply Voltage and Current Monitoring Accuracy ±1.5%

• Current Programming with 4-20mA signal.

Power supply Voltage and Current Programming Accuracy ±1% Power supply Voltage and Current Monitoring Accuracy ±1.5%

P/N: IS420

P/N: LAN

P/N: IS510

LAN Interface LXI Compliant to Class C

- Meets all LXI-C Requirements
- Address Viewable on Front Panel
- Fixed and Dynamic Addressing
- Compatible with most standard Networks
- VISA & SCPI Compatible
- LAN Fault Indicators
- Auto-detects LAN Cross-over Cable
- Fast Startup



Power Supply Identification / Accessories How to order

GEN	8 -	300	-	
			Factory Options:	Factory AC Input Options:
Series	Output	Output	Option: IEEE	1P230 (Single Phase 170~265VAC)
Name	Voltage	Current	IS510	3P208 (Three Phase 170~265VAC)
	(0~8V	(0~300A)	IS420	
			LAN	

Models 2.4kW

Model	Output Voltage VDC	Output Current (A)	Output Power (W)
GEN 8-300	0~8V	0~300	2400
GEN 10-240	0~10V	0~240	2400
GEN 16-150	0~16V	0~150	2400
GEN 20-120	0~20V	0~120	2400
GEN 30-80	0~30V	0~80	2400
GEN 40-60	0~40V	0~60	2400

Model	Output Voltage VDC	Output Current (A)	Output Power (W)
GEN 60-40	0~60V	0~40	2400
GEN 80-30	0~80V	0~30	2400
GEN 100-24	0~100V	0~24	2400
GEN 150-16	0~150V	0~16	2400
GEN 300-8	0~300V	0~8	2400
GEN 600-4	0~600V	0~4	2400

Factory option P/N
RS-232/RS-485 Interface built-in Standard GPIB Interface IEEE
Voltage Programming Isolated Analog Interface IS510
Current Programming Isolated Analog Interface IS420
LAN Interface (Complies with LXI Class C) LAN

Accessories

1. Serial Communication cable

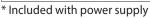
RS-232/RS-485 cable is used to connect the power supply to the Host PC.

Mode	RS-485	RS-232	RS-232
PC Connector Communication Cable Power Supply Connector	DB-9F Shield Ground L=2m EIA/TIA-568A (RJ-45)	DB-9F Shield Ground L=2m EIA/TIA-568A (RJ-45)	DB-25F Shield Ground L=2m EIA/TIA-568A (RJ-45)
P/N	GEN/485-9	GEN/232-9	GEN/232-25

2. Serial link cable*

Daisy-chain up to 31 Genesys[™] power supplies.

Mode	Power Supply Connector	Communication Cable	P/N
RS-485	EIA/TIA-568A (RJ-45)	Shield Ground L=50cm	GEN/RJ45





Also available, Genesys™
1U Half Rack 750W
1U full Rack
750W/1500W/2400W
2U full Rack 3300W/5000W



Improved 5pecifications

Genesys™

Programmable DC Power Supplies
3.3kW in 2U
Built in RS-232 & RS-485 Interface
Advanced Parallel Operation
Optional Interface:
LXI Compliant LAN
IEEE488.2 SCPI (GPIB) Multi-Drop
Isolated Analog Programming



Genesys™ Family GENH 750W Half Rack GEN1U 750/1500/2400W Full Rack GEN2U 3.3/5kW

TDK-Lambda



TDK·Lambda

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:

- High Power Density 3.3kW in 2U
- Wide Range of popular worldwide AC inputs, 1ø (230VAC) & 3ø (208VAC, 400VAC)
- Active Power Factor Correction (Single-Phase & Three-Phase AC Input)
- Output Voltage up to 600V, Current up to 400A
- Built-in RS-232/RS-485 Interface Standard
- Global Commands for Serial RS-232/RS-485 Interface
- Auto-Re-Start / Safe-Start: user selectable
- Last-Setting Memory
- High Resolution 16 bit ADCs & DACs
- Low Ripple & Noise
- Front Panel Lock selectable from Front Panel or Software
- Reliable Encoders for Voltage and Current Adjustment
- Constant Voltage/Constant Current auto-crossover
- Parallel Operation with Active Current Sharing; up to four identical units.
- Advanced Parallel Master / Slave. Total Current is Programmed and Measured via the Master.
- Independent Remote ON/OFF and Remote Enable/Disable
- External Analog Programming and Monitoring (user selectable 0-5V & 0-10V)
- Reliable Modular and SMT Design
- 19" Rack Mount capability for ATE and OEM applications
- Optional Interfaces

Isolated Analog Programming and Monitoring Interface (0-5V/0-10V & 4-20mA)

IEEE 488.2 SCPI (GPIB) Multi-Drop

LXI Compliant LAN

- LabView® and LabWindows® drivers
- Five Year Warranty

Worldwide Safety Agency Approvals; CE Mark for LVD and EMC Regulation





Applications

Genesys™ power supplies have been designed to meet the demands of a wide variety of applications.

Test & Measurement systems, Component Device Testing.

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

System Designers will appreciate new, standard, remote programming features such as Global commands. Also, new high-speed status monitoring is available for the RS-485 bus.

Test Systems using the IEEE-488 bus may achieve significant cost savings by incorporating the Optional IEEE Multi-Drop Interface for a Master and up to 30 RS-485 Multi-Drop Slaves.

Higher power systems can be configured with up to four 3.3kW modules. Each module is 2U with zero space between them (zero stack).

Flexible configuration is provided by the complete Genesys™ Family: 1U 750W Half-Rack, 1U 750W, 1500W and 2400W Full-Rack. All are identical in Front Panel, Rear Panel Analog, and all Digital Interface Commands.

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



Front Panel Description



- 1. ON/OFF Switch
- 2. Air Intake allows zero stacking for maximum system flexibility and power density.
- 3. Reliable encoder controls Output Voltage, Address, OVP and UVL settings.
- 4. Volt Display shows Output Voltage and directly displays OVP, UVL and Address settings.
- 5. Reliable encoder controls Output Current, sets baudrate and Advanced Parallel mode.
- 6. Current Display shows Output Current and displays Baud rate. Displays total current in Parallel Master/Slave Mode
- 7. Function/Status LEDs:
- Alarm

- Fine Control
- Preview Settings

- Foldback Mode
- Remote Mode
- Output On
- 8. Pushbuttons allow flexible user configuration
 - Coarse and Fine adjustment of Output Voltage/Current and Advanced Parallel Master or Slave
 - Preview settings and set Voltage/Current with Output OFF, Front Panel Lock
 - Parallel Master/Slave
 - Set OVP and UVL Limits
 - Set Current Foldback Protection
 - Go to Local Mode and select Address and Baud rate
 - Output ON/OFF and Auto-Re-Start/Safe-Start Mode

Rear Panel Description



- 1. Remote/Local Output Voltage Sense Connections.
- 2. DIP Switches select 0-5V or 0-10V Programming and other functions.
- 3. DB25 (Female) connector allows (Non-isolated) Analog Program and Monitor and other functions.
- 4. RS-485 OUT to other Genesys™ Power Supplies.
- 5. RS-232/RS-485 IN Remote Serial Programming.
- 6. Output Connections: Rugged busbars (shown) for up to 100V Output; wire clamp connector for Outputs >100V.
- 7. Exit air assures reliable operation when zero stacked.
- 8. Input: 230VAC Single Phase (shown), 208 & 400VAC Three Phase, 50/60 Hz AC Input Connector: PHOENIX CONTACT Power Combicon PC 6/... Series with strain relief.
- 9. Optional Interface Position for IEEE 488.2 SCPI (shown) or Isolated Analog Interface or LAN Interface.



Genesys ™ 3.3kW Specifications

1.0 MODEL										c	nocificat	ions in bl	uo aro ir	nnrovod
MODEL	GEN	8-400	10-330	15-220	20-165	30-110	40-85	60-55	80-42	100-33		ions in bl 200-16.5		
1.Rated output voltage(*1)	V	8	10	15	20	30	40	60	80	100	150	200	300	600
2.Rated Output Current(*2)	A	400	330	220	165	110	85	55	42	33	22	16.5	11	5.5
3.Rated Output Power 1.1 CONSTANT VOLTAGE MODE	W	3200	3300	3300	3300	3300	3400	3300	3360	3300	3300	3300	3300	3300
1.Max.line regulation (0.01% of rated Vo+ 2mV)(*6)	mV	2.8	3	3.5	4	5	6	8	10	12	17	22	32	62
2.Max load regulation (0.015% of rated Vo+5mV)(*7)		6.2	6.5	7.25	8	9.5	11	14	17	20	27.5	35	50	95
3.Ripple and noise p-p 20MHz (*8)	mV	55	55	55	55	55	55	60	70	100	100	275	300	350
4.Ripple r.m.s 5Hz~1MHz	mV V	8	8	7	7	5	7	7	20	25	20	70	80	80
5.Remote sense compensation/wire 6.Temp. coefficient		2 50PPM/	°C of rat	2 ed outp	ut volta		5 ing 30 mi	5 inutes wa	5 arm-un	5	5	5	5	5
7.Temp. stability	11111/	0.01% o	f rated V	out over	8hrs inte	erval follo	wing 30 i	minutes	warm-up	. Constan	t line, loa	d & temp.		
8.Warm-up drift			n 0.05% o	f rated o	utput vol							'		
9.Up-prog. response time, 0~Vo Rated (*9)	mS				30				1	50		20	0	250
10.Down-prog response Full-load (*9) No-load (*10)	mS mS	20 500	600	100 700	800	900	160 1000	1100	1200	1500	300 2000	3000	3500	500 4000
time [No-load (10)	1113											rated outp		
11.Transient response time	mS											sec for mo		
1.2 CONSTANT CURRENT MODE		Jet po		, o, 10 ca. 5	C.13C1 2C3	<i>-</i>			,	-cia aiii g		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
1.Max.line regulation (0.01% of rated lo+2mA)(*6)		42	35	24	18.5	13	10.5	7.5	6.2	5.3	4.2	3.65	3.1	2.6
2.Max.load regulation (0.02% of rated Io+5mA)(*11)		85	71	49	38	27	22	16	13.4	11.6	9.4	8.3	7.2	6.1
3.Ripple r.m.s 5Hz~1MHz. (*12)	mA	1000	650	400	300	250	150	70	60	50	20	30	15	8
4.Load regulation thermal drift 5.Temp. coefficient	PPM/°C	70PPM	n 0.1% of											
6.Temp. stability											line, load	l & temper	ature.	
7.Warm-up drift		8V~20V	models: L	ess than	±0.5% of	rated ou	tput curre	ent over 3	30 minut	es followi	ng power	On.		
· ·		30V~600	OV model	s: Less th	an ±0.25	% of rate	d output o	current o	ver 30 m	nutes fol	lowing po	wer On.	-	
1.3 PROTECTIVE FUNCTIONS 1. OCP		0~1050/	Constant	Curront										
2. OCP Foldback			shut dow		ower sur	noly chan	ae from (V to CC.	User sele	ctable.				
3. OVP type	-										mmunicat	ion port co	ommand	
4. OVP trip point											5~165V	5~220V	5~330V	5~660V
5. Output Under Voltage Limit			y front pa				t. Prevent	s from ac	djusting \	<u>out belo</u>	w limit.			
6. Over Temp. Protection 1.4 ANALOG PROGRAMMING AND MONITO	DING	User sele	ectable , l	atched o	r non-late	ched.								
1. Vout Voltage Programming	MING	0~100%	, 0~5V or	0~10V. u	ser select	Accurac	v and line	arity:+0	5% of rat	ed Vout				
2.lout Voltage Programming (*13)			, 0~5V or											
3.Vout Resistor Programming			, 0~5/10K											
4.lout Resistor Programming (*13)			, 0~5/10K								d lout.		-	
5.On/Off control (rear panel) 6.Output Current monitor (*13)			<u>rical. Volta</u> 0~10V , A					er seiect	able logi	с				
7.Output Voltage monitor			0~10V,A											
8. Power Supply OK signal		TTL high	(4~5V) -(OK, OV-Fa	ail 500ohi	m series r	esistance							
9. CV/CC Indicator										ximum s	ink curren	t: 10mA		
10. Enable/Disable 11. Local/Remote analog control		Dry cont	act. Oper	n:off , Sho	ort: on. M	ax. volta	ge at Enal	ole/Disab	ole in: 6V.					
12. Local/Remote analog control Indicator		Open co	rical signa	ar Opei	n/Snort: (Remote:	J~U.0V 0I On Mavi	SHORT: KE	mote, 2^	mavimu	pen: Loca m sink cı	ı. ırrent: 10r	mΔ		
1.5 FRONT PANEL	-	Торен со	ilector, Et	Jean Off,	nemote.	OII. WIAXI	illulli voit	age. Jov	, maximu	III SIIIK CC	inent. ioi	IIA.		
		Vout/Io	ut manua	l adjust b	y separa	te encod	ers (coars	e and fin	e adjustn	nent sele	ctable).			
			<u>L manual</u>						1.0					
1.Control functions											io to local	control.	-	
			selection modes (a					uer. Num	ner or ad	uresses:3	1.			
		Baud rat	e selectio	n: 1200,2	2400,480	0,9600 ar	id 19,200.							
2.Display		Voltage:	4 digits ,	Accurac	v: 0.05%	of rated	output	Voltage	±1 cour	nt.				
. ,			4 digits, /								1 61/65			
3.Indications											ock, CVCC			
1.6 Interface Specifications for the GENESY														
1. Remote Voltage Programming (16 bit)	V m)/	8	10	15	20	30	40	60	80	100	150	200	300	600
Resolution (0.002% of Vo Rated) Accuracy (0.05% of Vo Rated) (*14)	mV mV	0.16	0.2 5	0.3	0.4 10	0.6 15	0.8	1.2 30	1.6 40	50	3 75	100	6 150	12 300
	1111	-	ر	<u> </u>	10	13	20		1 +0		13	100	130	300
2. Remote Current Programming (16 bit) Resolution (0.002% of lo Rated)	mA	8	6.6	4.4	3.3	2.2	1.7	1.1	0.84	0.66	0.44	0.33	0.22	0.11
Accuracy (0.2% of lo Rated+0.1% of lo Actual Output) (*13)		1200	990	660	495	330	255	165	126	99	66	49.5	33	16.5
3. Readback Voltage														
Resolution (% of Vo Rated)	%	0.002	0.011	0.007	0.006	0.004	0.003	0.002	0.002	0.011	0.007	0.006	0.004	0.002
Resolution (Readback Voltage)	mV	0.16	1.10	1.05	1.20	1.20	1.20	1.20	1.60	11.00	10.50	12.00	12.00	12.00
Accuracy (0.05% of Vo Rated)	mV	4	5	8	10	15	20	30	40	50	75	100	150	300
4. Readback Current														
Resolution (% of lo Rated)	%	0.003	0.004	0.005	0.007	0.01	0.002	0.002	0.003	0.004	0.005	0.007	0.01	0.002
Resolution (Readback Current)	mA	12.00	13.20	11.00	11.55	11.00	1.70	1.10	1.26	1.32	1.10	1.16	0.11	0.11
Accuracy (0.3% of lo Rated) (*13)	mA	1200	990	660	495	330	255	165	126	99	66	49.5	33.0	16.5
5. OVP/UVL Programming		T -							1					
Resolution (0.1% of Vo Rated)	mV	8	10	15	20	30	40	60	80	100	150	200	300	600
Accuracy (1% of Vo Rated)	mV	80	100	150	200	300	400	600	800	1000	1500	2000	3000	6000

^{*1:} Minimum voltage is guaranteed to maximum 0.2% of rated output voltage.



^{*2:} Minimum current is guaranteed to maximum 0.4% of rated output current.

^{*3:} For cases where conformance to various safety standards (UL, IEC, etc.) is required, to be described as 190-240Vac (50/60Hz) for single phase and 3-Phase 208V models, and 380~415Vac (50/60Hz) for 3-Phase 400V models.

^{*4:} Single-Phase and 3-Phase 208V models: At 208Vac input voltage, 3-Phase 400V: At 380Vac input voltage. With rated output power.
*5: Not including EMI filter inrush current, less than 0.2mSec.
*6: Single-Phase and 3-Phase 208V models: 170~265Vac, constant load. 3-Phase 400V models:

^{342~460}Vac, constant load.

^{*7:} From No-Load to Full-Load, constant input voltage. Maximum drop in Remote Sense.

^{*8:} For 8V~300V models: Measured with JEITA RC-9131A (1:1) probe.

For 600V model: Measured with 10:1 probe.

^{*9:} From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated, resistive load. *10:From 90% to 10% of Rated Output Voltage. *11: For load voltage change, equal to the unit voltage rating, constant input voltage.

^{*12}: For 8V \sim 15V models the ripple is measured from 2V to rated output voltage and rated output current. For other models, the ripple is measured at 10 $\sim\!100\%$ of rated output voltage and rated output current.

^{*13:} The Constant Current programming readback and monitoring accuracy does not include the warm-up and Load regulation thermal drift.

^{*14:} Measured at the sensing point.

General Specifications Genesys™ 3.3kW

2.1 INPUT CH	ARACTERISTICS	GEN	8-400			20-165		40-85	60-55	80-42	100-33	150-22	200-16.5	300-11	600-5.	
4.1	/f (¥2)	14.6				170~265V		lz								
1. Input voltage	r/freq. (*3)	VAC				265Vac, 4					,					
	c: D 2201/			1	1	460Vac, 4	r	2.4		22.5	- 22				T 22	
2. Maximum	Single Phase, 230V models:	1	24	24	24	24	23	24	23	23.5	23	23	23	23	23	
Input current at 100% load	3-Phase, 208V models:	A	14.5	14.5	14.5	14.5	14	14.5	13.6	14	13.7	13.7	13.7	13.8	13.9	
	5 Triase, 1007 modelsi		7.2	7.2	7.2	7.2	7.0	7.2	6.8	7.0	6.8	6.8	6.8	6.9	7.0	
3. Power Factor		0/			T	1			Ti .	1	1	1	ted output			
4. Efficiency (*4)	%	82	83	83	83	86	86	88	88	88	87	87	87	87	
5. Inrush Curren	nt (*5)	Α		ngle-Phase and 3-Phase 208V models: Less than 50A Phase 400V models: Less than 20A Om Sec for Single-Phase and 3-phase 208V models, 6m Sec for 3-Phase 400V models. Rated output power.												
6. Hold-up time	(Typ)	mS					208V mo	dels. 6mS	ec for 3-P	hase 400\	/ models	Rated ou	tout nowe	r.		
	JPPLY CONFIGURATION		1.0	o. og.c	· ···ase a··	a o priase	2001	u c 15 / 0 1 1 1 5		11450 100		nated ou	tput porte.			
1. Parallel Opera			Up to 4 io	dentical u	nits in ma	ster/slave	mode									
2. Series Operat						external		0V Max to	Chassis o	round						
	MENTAL CONDITIONS		O P 10 2 10			external t		or max co	2	J. 0 a a						
1. Operating ter		-	0~50°C	100% load	1		-									
2. Storage temp			-20~85°C		4.											
3. Operating hu					ondensir	na)										
4. Storage humi					ondensin	<u>J, </u>										
5. Vibration	idity					<u></u>	ved to the	vihrating	n surface							
6. Shock		MIL-810F, method 514.5, The EUT is fixed to the vibrating surface. Less than 20G, half sine, 11mSec. Unit is unpacked.														
o. JHOCK		Operating: 10000ft (3000m), Derate output current by 2%/100m above 2000m, Alternatively, derate maximum ambient ter											iont to~			
7. Altitude						. Non opei				OVE 2000	iii, Aiterna	ativery, de	iale iildXiM	iuiii diiiDi	encten	
0 DoUC Com-!	anco					ivon opei ents of Ro			iouiii).							
8. RoHS Compli	ance		Complies	with the	requirem	ients of Ro	ns airect	ive.								
2.4 EMC			1													
1.Applicable Sta	andards:		1564000	4 2 4: 1			l: 1 4101									
2.ESD					isch8KV,	contact c	lisch4KV									
3.Fast transient			IEC1000-													
4.Surge immun	·		IEC1000-4-5. 1KV line to line, 2KV line to ground IEC1000-4-6, 3V													
5.Conducted im	,															
6.Radiated imm			EC1000-4-3, 3V/m													
7.Magnetic field	d immunity		EN61000	-4-8, 1A/r	n											
8.Voltage dips			EN61000									_				
9.Conducted er	nission		EN55022A, FCC part 15-A, VCCI-A.													
10. Radiated em	nission		EN55022	A, FCC pa	rt 15-A, V	CCI-A.										
2.5 SAFETY																
1.Applicable sta	andards:		UL 60950)-1, CSA 2	2.2 No. 60	950-1,IEC	60950-1, I	N 60950	-1							
			Models v	vith Vout	50V: Out	put is SELV Monitorin	/, all comi	nunicatio	n/control	interface	es (RS232/	485, IEEE,	Isolated A	nalog, L <i>A</i>	N, Sens	
							7		unication	/control i		DC222/40	OF IFFF Iso	latad An		
2.Interface class	sification		Models with 60V Vout 400V: Output is Hazardous, communication/control interfaces: RS232/485, IEEE, Isolated Analog, LAN Remote Programing and Monitoring (pins 1-3, pins14-16) are SELV, Sense, Remote Programming and Monitoring (pins 8-13 pins 21-25) are Hazardous.													
			Models v	vith 400V	<vout 600<="" td=""><td>OV: Outpu</td><td>t is Hazaro</td><td>lous, all c</td><td>ommunic</td><td>ation/con</td><td>trol interf</td><td>faces (RS2</td><td>32/485, IEE</td><td>E, Isolate</td><td>d Analo</td></vout>	OV: Outpu	t is Hazaro	lous, all c	ommunic	ation/con	trol interf	faces (RS2	32/485, IEE	E, Isolate	d Analo	
			Vout 50	V model		t-Output					nmunicat	ion/cont	rol (SELV)	: 4242VI	OC 1m	
			60V <vou< td=""><td>t 100V m</td><td>odels: Inp</td><td></td><td>t (Hazardo</td><td>us): 2600</td><td>VDC 1min</td><td>, Input-co</td><td>mmunica</td><td>ation/cont</td><td>rol (SELV):</td><td></td><td></td></vou<>	t 100V m	odels: Inp		t (Hazardo	us): 2600	VDC 1min	, Input-co	mmunica	ation/cont	rol (SELV):			
3.Withstand vol	ltage		Input-Gr	ound: 282	8VDC 1m	in.										
			4242VDC	1min, Ha	zardous.	put-Outp Output-co l: 2670VD0	mmunica	tion/con	trol(SELV):	4242VDC	ommunic 1min,	cation/cor	ntrol (SELV)	:		
3.Insulation res	istance		More tha	n 100Mol	nm at 25°	C , 70% RF	l									
2.6 MECHANI	CAL CONSTRUCTION															
1. Cooling			Forced ai	r flow: fro	m front t	o rear. No	ventilatio	n holes a	t the top o	or bottom	of the ch	assis; Varia	able fan sp	eed.		
2. Dimensions (WxHxD)					2.5mm (ex										
3. Weight	,	-	13 kg.	,		,,,,,										
	. () 0			ase,230V	models. I	Power Cor	nbicon PC	6-16/3-0	F-10.16 se	ries, with	Strain rel	ief.				
4. AC Input con	nector (with Protective Cove	er)				els, Power										
5.Output conne	ectors	-											enix P/N: F	RONT-4-	H-7.62	
2.7 RELIABILI			10110100	· models	. Das Dal	ו ש אוטוני ע	J.J.1111/1. 1	201 10 00	. J T III UUCI	1711 C CIG		22101,1110				
1. Warranty	51 LC5	-	5 years.													
			J J Cuis.													

1. Warranty
All specifications subject to change without notice.



TDK·Lambda

Genesys™ Power Parallel and Series Configurations

Parallel operation - Master/Slave:

Active current sharing allows up to four identical units to be connected in an auto-parallel configuration for four times the output power.

In Advanced Parallel Master/Slave Mode, total current is programmed and reported by the Master, Up to four supplies act as one.



Series operation

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

Remote Programming via RS-232 & RS-485 Interface

Standard Serial Interface allows daisy-chain control of up to 31 power supplies on the same communication bus with built-in RS-232 & RS-485 Interface.







P/N:IEEE

Programming Options (Factory installed)

Digital Programming via IEEE Multi-Drop Interface

- Allows IEEE Master to control up to 30 slaves over RS-485 daisy-chain
- Only the Master needs be equipped with IEEE Interface
- IEEE 488.2 SCPI Compliant
- Program Voltage
- Measure Voltage
- Over Voltage setting and shutdown
- Error and Status Messages

- Program Current
- Measure Current
- Current Foldback shutdown

Isolated Analog Programming

Four Channels to Program and Monitor Voltage and Current. Isolation allows operation with floating references in harsh electrical environments. Choose between programming with Voltage or Current.

Connection via removable terminal block: Phoenix MC1,5/8-ST-3.81.

Voltage Programming, user-selectable 0-5V or 0-10V signal.
 Power supply Voltage and Current Programming Accuracy ±1%
 Power supply Voltage and Current Monitoring Accuracy ±1.5%

Current Programming with 4-20mA signal.
 Power supply Voltage and Current Programming Accuracy ±1%
 Power supply Voltage and Current Monitoring Accuracy ±1.5%

P/N: IS510

P/N: IS420

LAN Interface Compliant to Class C

- Meets all LXI-C Requirements
- Address Viewable on Front Panel
- Fixed and Dynamic Addressing
- Compatible with most standard Networks
- TCP / UDP Socket Programming

P/N: LAN

- VISA & SCPI Compatible
- LAN Fault Indicators
- Auto-detects LAN Cross-over Cable
- Fast Startup

Power Supply Identification / Accessories How to order

GEN	8 -	400	-	<u>-</u>	
			Factory Options:	Factory AC Input Options:	
Series	Output	Output	Option: IEEE	1P230 (Single Phase 170~265VAC)	
Name	Voltage	Current	IS510	3P208 (Three Phase 170~265VAC)	
	(0~8V	(0~400A)	IS420	3P400 (Three Phase 342~460VAC)	
			LAN		

Models 3.3kW

Model	Output Voltage VDC	Output Current (A)	Output Power (W)			
GEN 8-400	0~8V	0~400	3200			
GEN 10-330	0~10V	0~330	3300			
GEN 15-220	0~15V	0~220	3300			
GEN 20-165	0~20V	0~165	3300			
GEN 30-110	0~30V	0~110	3300			
GEN 40-85	0~40V	0~85	3400			

Model	Output Voltage VDC	Output Current (A)	Output Power (W)				
GEN 60-55	0~60V	0~55	3300				
GEN 80-42	0~80V	0~42	3360				
GEN 100-33	0~100V	0~33	3300				
GEN 150-22	0~150V	0~22	3300				
GEN 200-16.5	0~200V	0~16.5	3300				
GEN 300-11	0~300V	0~11	3300				
GEN 600-5.5	0~600V	0~5.5	3300				

Factory option P/N

RS-232/RS-485 Interface built-in Standard -

GPIB Interface IEEE

Voltage Programming Isolated Analog Interface IS510

Current Programming Isolated Analog Interface IS420

LAN Interface (Complies with Class C)

LAN

Accessories

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	RS-232
PC Connector Communication Cable Power Supply Connector	DB-9F Shield Ground L=2m EIA/TIA-568A (RJ-45)	DB-9F Shield Ground L=2m EIA/TIA-568A (RJ-45)	DB-25F Shield Ground L=2m EIA/TIA-568A (RJ-45)
P/N	GEN/485-9	GEN/232-9	GEN/232-25

2. Serial link cable*

Daisy-chain up to 31 Genesys[™] power supplies.

Mode	Power Supply Connector	Communication Cable	P/N
RS-485	EIA/TIA-568A (RJ-45)	Shield Ground L=50cm	GEN/RJ45

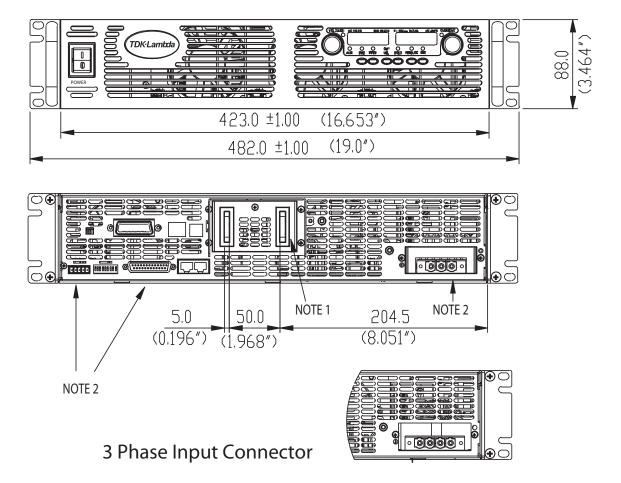
* Included with power supply



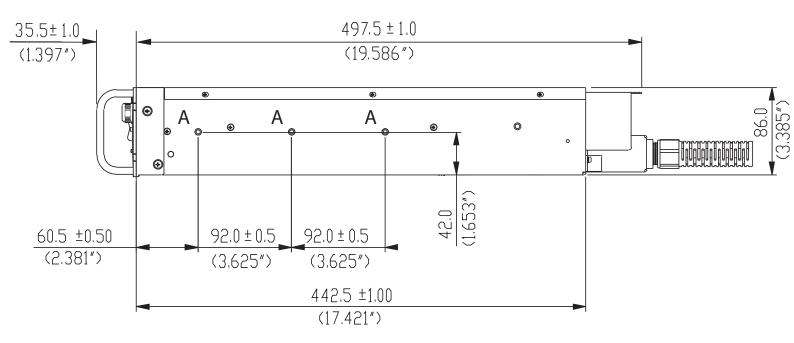
Also available, Genesys™ 1U Half Rack 750W 1U full Rack 750W/1500W/2400W 2U full Rack 5000W



Outline Drawing Genesys™ 3.3kW Units







NOTE

1. Bus bars for 8V to 100V models (shown)

Wire clamp connector for 150V to 600V models

- 2. Plug connectors included with the power supply
- 3. Chassis slides mounting holes #10-32 marked "A" GENERAL DEVICES P/N: C-300-S-116 or equivalent

Improved 5 Specifications

Genesys**

Programmable DC Power Supplies
5kW in 2U
Built in RS-232 & RS-485 Interface
Advanced Parallel Operation
Optional Interface:
LXI Compliant LAN
IEEE488.2 SCPI (GPIB) Multi-drop
Isolated Analog Programming



Genesys™ Family GENH 750W Half Rack GEN1U 750/1500/2400W Full Rack GEN2U 3.3/5kW

TDK-Lambda



TDK·Lambda

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:

- High Power Density 5kW in 2U
- Wide Range of popular worldwide AC inputs, 3ø (208VAC, 400VAC)
- Active Power Factor Correction (Three-Phase AC Input)
- Output Voltage up to 600V, Current up to 600A
- Built-in RS-232/RS-485 Interface Standard
- Global Commands for Serial RS-232/RS-485 Interface
- Auto-Re-Start / Safe-Start: user selectable
- **Last-Setting Memory**
- High Resolution 16 bit ADCs & DACs
- Low Ripple & Noise
- Front Panel Lock selectable from Front Panel or Software
- Reliable Encoders for Voltage and Current Adjustment
- Constant Voltage/Constant Current auto-crossover
- Parallel Operation with Active Current Sharing; up to four identical units.
- Advanced Parallel Master / Slave. Total Current is Programmed and Measured via the Master.
- Independent Remote ON/OFF and Remote Enable/Disable
- External Analog Programming and Monitoring (user selectable 0-5V & 0-10V)
- Reliable Modular and SMT Design
- 19" Rack Mount capability for ATE and OEM applications
- Optional Interfaces Isolated Analog Programming and Monitoring Interface (0-5V/0-10V & 4-20mA) IEEE_488.2 SCPI (GPIB) Multi-Drop Compliant LAN
- LabView[®] and LabWindows[®] drivers
- Five Year Warranty

Worldwide Safety Agency Approvals; culture CE Mark for LVD and EMC Regulation





Applications

Genesys[™] power supplies have been designed to meet the demands of a wide variety of applications.

Test & Measurement systems, Component Device Testing.

Semiconductor Processing & Burn-In, Aerospace & Satellite Testing, Medical Imaging, Green Technology. System Designers will appreciate new, standard, remote programming features such as Global commands. Also, new high-speed status monitoring is available for the RS-485 bus.

Test Systems using the IEEE-488 bus may achieve significant cost savings by incorporating the Optional IEEE Multi-Drop Interface for a Master and up to 30 RS-485 Multi-Drop Slaves.

Higher power systems can be configured with up to four 5kW modules. Each module is 2U with zero space between them (zero stack).

Flexible configuration is provided by the complete Genesys™ Family: 1U 750W Half-Rack, 1U 750W, 1500W and 2400W Full-Rack. All are identical in Front Panel, Rear Panel Analog, and all Digital Interface Commands.

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



Front Panel Description



- 1. ON/OFF Switch
- 2. Air Intake allows zero stacking for maximum system flexibility and power density.
- 3. Reliable encoder controls Output Voltage, Address, OVP and UVL settings.
- 4. Volt Display shows Output Voltage and directly displays OVP, UVL and Address settings.
- 5. Reliable encoder controls Output Current, sets baudrate and Advanced Parallel mode.
- 6. Current Display shows Output Current and displays Baud rate. Displays total current in Parallel Master/Slave Mode
- 7. Function/Status LEDs:
 - Alarm
- Fine Control
- Preview Settings

- Foldback Mode
- Remote Mode
- Output On
- 8. Pushbuttons allow flexible user configuration
 - Coarse and Fine adjustment of Output Voltage/Current and Advanced Parallel Master or Slave
 - Preview settings and set Voltage/Current with Output OFF, Front Panel Lock
 - Parallel Master/Slave
 - Set OVP and UVL Limits
 - Set Current Foldback Protection
 - Go to Local Mode and select Address and Baud rate
 - Output ON/OFF and Auto/Safe Re-Start Mode

Rear Panel Description



- 1. Remote/Local Output Voltage Sense Connections.
- 2. DIP Switches select 0-5V or 0-10V Programming and other functions.
- 3. DB25 (Female) connector allows (Non-isolated) Analog Program and Monitor and other functions.
- 4. RS-485 OUT to other Genesys™ Power Supplies.
- 5. RS-232/RS-485 IN Remote Serial Programming.
- 6. Output Connections: Rugged busbars (shown) for up to 100V Output; wire clamp connector for Outputs >100V.
- 7. Exit air assures reliable operation when zero stacked.
- 8. Input: 230VAC Single Phase (shown), 208 & 400VAC Three Phase, 50/60 Hz AC Input Connector: PHOENIX CONTACT Power Combicon PC 6/... Series with strain relief.
- 9. Optional Interface Position for IEEE 488.2 SCPI (shown) or Isolated Analog Interface or LAN Interface.



Genesys ™ 5kW Specifications

1.0 MODEL												Cnos	ification	ne in Div		
1.0 MODEL MODEL	GEN	8-600	10 500	16 210	20.250	20 170	40-125	60-85	80-65	100 50	150 24			ns in Blu		600-8.5
1.Rated output voltage(*1)	V	8	10-300	16	20-230	30-170	40-123	60	80	100-30	150-34	200-23	300-17	400-13	500-10	600
2.Rated Output Current(*2)	Å	600	500	310	250	170	125	85	65	50	34	25	17	13	10	8.5
3.Rated Output Power	W	4800	5000	4960	5000	5100	5000	5100	5200	5000	5100	5000	5100	5200	5000	5100
1.1 CONSTANT VOLTAGE MODE																
1.Max.line regulation (0.01% of rated Vo)(*6)		0.8	1.0	1.6	2	3	4	6	8	10	15	20	30	40	50	60
2.Max load regulation (0.015% of rated Vo+5mV)(*7)		6.2	6.5	7.4	8	9.5	11	14	17.7	20	27.5	35	50	65	80	95
3.Ripple and noise p-p 20MHz (*8)	mV	75	75	70	75	70	70	70	80	90	120	200	200	350	300	450
4.Ripple r.m.s 5Hz~1MHz	mV	8	8	10	10	10	8	8	15	15	20	45	60	70	70	100
5.Remote sense compensation/wire	V	2	2	2	2	5	5	5	5	5	5	5	5	5	5	5
6.Temp. coefficient	PPM/°C	50PPM									P	. 1 10				
7.Temp. stability							llowing					e, load &	temp.			
8.Warm-up drift 9.Up-prog. response time, 0~Vo Rated (*9)	mS	Less tha	in 0.05%		output v 0	oitage+.	2mV ove	r 30 minu	ites folio		<u>wer On. </u> 50			65	80	100
10.Down-progresponse Full-load (*9)	mS	15		<u></u>	U		80				100			135	170	200
time No-load (*10)	mS	400	500	600	700	800	900	1000	1200	1500		2000	2500	3000	3000	3000
, , ,														utput cui		
11.Transient response time	mS													above 10		tputset
1.2 CONSTANT CURRENT MODE		point.	0 10070,	iocai scri	JC. EC33 1	indir iiii.	JCC 101 111	очен ир	to una i	riciaanig	1001.21	11300101	models	above 10	-	
1.Max.line regulation (0.05% of rated Io)(*6)	mA	300	250	155	125	85	62.5	42.5	32.5	25	17	12.5	8.5	6.5	5	4.25
2.Max.load regulation (0.1% of rated Io)(*11)		600	500	310	250	170	125	85	65	50	34	25	17	13	10	8.5
3.Ripple r.m.s 5Hz~1MHz . (*12)	mA	1700		1000	700	350	180	120	80	50	50	50	20	15	10	10
4.Load regulation thermal drift		Less tha	n 0.1% o	f rated o	utput cu	rrent ove	er 30 min	utes foll	owing lo		ge.					
5.Temp. coefficient	PPM/°C	70PPM	/°C fron	rated o	output o	urrent,	following	g 30 min	utes war	m-up.						
6.Temp. stability							llowing							iture.		
7.Warm-up drift							output c									
·		20V~60	0V mode	ls: Less t	han ±0.2	25% of ra	ted outp	ut currer	nt over 3	0 minute	s followi	ing powe	er On.			
1.3 PROTECTIVE FUNCTIONS								_			-			-	_	
1. OCP			Constar													
2. OCP Foldback							ange fro									
3. OVP type							put recy								E 5501	15 6601
4. OVP trip point													5~330V	5~440V	5~550V	5~660V
5. Output Under Voltage Limit							ort. Prev	ents fror	n adjusti	ing Vout	below lir	nit.				
6. Over Temp. Protection	UTODINI		ectable ,	latched	or non-la	atched.										
1.4 ANALOG PROGRAMMING AND MON	IIIORING		0 51/	0 101/				12 24	. 0 50/	C						
1.Vout Voltage Programming							racy and									
2.lout Voltage Programming (*13)							racy and t.,Accura									
3.Vout Resistor Programming 4.lout Resistor Programming (*13)							t. Accura									
5.On/Off control (rear panel)							contact				rated lot	ıı.				
6.Output Current monitor (*13)			0~10V ,					,user ser	естаріе	iogic.						
7.Output Voltage monitor			0~10V ,													
8. Power Supply OK signal							es resista	nce								
9. CV/CC Indicator							ff, Maxin		aue. 30/	/ maximi	ım sink c	urrent: 1	OmΔ			
10. Enable/Disable							tage at E				alli Sillik C	direit. i	OIII/			
11. Local/Remote analog control							or short				Local.					
12. Local/Remote analog control Indicate	or						ximum					nt: 10mA				
1.5 FRONT PANEL					,				,							
		Vout/ lo	ut manu	al adjust	by sepa	rate ence	oders (co	arse and	fine adj	ustment	selectab	le).				
		OVP/UV	L manua	l adjust l	by Volt. A	djust en	coder.									
1.Control functions		On/Off,	Output o	on/off, Re	e-start m	odes (au	ito, safe),					local co	ntrol.			
							adjust en	coder. N	umber c	f addres	ses:31.					
			modes (
							and 19,2									
2.Display							ed outpu									
. ,							output				11. 2	6) (6.5				
3.Indications							dback, L				nel Lock,	CVCC.				
1.6 Interface Specifications for the GEN	ESYS Sei	ries with	RS-232/	RS-485 (Or Optio	nal GPI	3/LAN In	terface I	nstalled							
1. Remote Voltage Programming (16 bit)	V	8	10	16	20	30	40	60	80	100	150	200	300	400	500	600
Resolution (0.002% of Vo Rated)	mV	0.16	0.20	0.32	0.40	0.60	0.80	1.20	1.60	2.0	3.0	4.0	6.0	8.0	10.0	12.0
Accuracy (0.05% of Vo Rated) (*14)	mV	4	5	8	10	15	20	30	40	50	75	100	150	200	250	300
2. Remote Current Programming (16 bit)																
Resolution (0.002% of lo Rated)	mA	12	10	6.20	5.00	3.40	2.50	1.70	1.30	1.00	0.68	0.50	0.34	0.26	0.20	0.17
Accuracy (0.3% of lo Rated+0.1% of lo Actual Output) (*13)		2400	2000	1240	1000	680	500	340	260	200	136	100	68	52	40	34
	111/4	_ 	2000	1270	1000	1 000	500	J-10		200	130	100	_ 50	JZ	1 -10	דכן
3. Readback Voltage		0.000	0.000	0.00=	0.001	0.00:	0.000	0.000	0.000	0.011	0.00=	0.001	10000	0.000	0.000	0.000
Resolution (% of Vo Rated)	%	0.002	0.011	0.007	0.006	0.004		0.002	0.002	0.011	0.007		0.004		0.003	0.002
Resolution (Readback Voltage)	mV	0.16	1.10	1.12	1.20	1.20	1.20	1.20	1.60	11.00	10.50			12.00		12.00
Accuracy (0.05%Vo Rated)	mV	4	5	8	10	15	20	30	40	50	75	100	150	200	250	300
4. Readback Current																
Resolution (% of lo Rated)	%	0.002	0.003	0.004	0.005	0.006		0.002	0.002	0.003	0.004		0.006		0.011	0.002
Resolution (Readback Current)	mA	12.00	15.00	12.40	12.50	10.20	11.25	1.70	1.30	1.50	1.36	1.25	1.02	1.04	40	34
Accuracy (0.3% of Io Rated) (*13)	mA	1800	1500	930	750	510	375	255	195	150	102	75	51	39	30	25.5
5. OVP/UVL Programming														1		
Resolution (0.1% of Vo Rated)	mV	8	10	16	20	30	40	60	80	100	150	200	300	400	500	600
		80	100	160	200	300	400	600	800	1000	1500	2000	3000	4000	5000	6000
Accuracy (1% of Vo Rated)	mV	00														

^{*1:} Minimum voltage is guaranteed to maximum 0.2% of rated output voltage.



^{*2:} Minimum current is guaranteed to maximum 0.4% of rated output current.

^{*3:} For cases where conformance to various safety standards (UL, IEC, etc.) is required, to be described as 190-240Vac (50/60Hz) for 3-Phase 208V models, and 380~415Vac (50/60Hz) for 3-Phase 400V models.

^{*4: 3-}Phase 208V models: At 208Vac input voltage, 3-Phase 400V: At 380Vac input voltage. With rated output power.
*5: Not including EMI filter inrush current, less than 0.2mSec.
*6: 3-Phase 208V models: 170~265Vac, constant load. 3-Phase 400V models: 342~460Vac,

constant load.

*7: From No-Load to Full-Load, constant input voltage. Maximum drop in Remote Sense.

^{*8:} For 8V~300V models: Measured with JEITA RC-9131A (1:1) probe.

For 600V model: Measured with 10:1 probe.

^{*9:} From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated, resistive load. *10:From 90% to 10% of Rated Output Voltage. *11: For load voltage change, equal to the unit voltage rating, constant input voltage.

^{*12}: For 8V \sim 16V models the ripple is measured from 2V to 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.

^{*13:} The Constant Current programming readback and monitoring accuracy does not include the warm-up and Load regulation thermal drift. *14: Measured at the sense point.

General Specifications Genesys™ 5kW

2.1 INPUT CH	ARACTERISTICS	GEN	8-600	10-500	16-310	20-250	30-170	40-125	60-85	80-65	100-50	150-34	200-25	300-17	400-13	500-10	600-8.5
1	/f=0 == (*2)	VAC	3-Phase	, 208V m	odels: 17	′0~265Va	ac, 47~63	3Hz				1					
1. Input voltage	/freq. (*3)	VAC	3-Phase	, 400V m	odels: 34	12~460V	ac, 47~6	3Hz									
2. Maximum	3-Phase, 208V models:		21	22	22	22	22	22	22	22	22	22	22	22	22	22	22
Input current at 100% load	3-Phase, 400V models:	A	10.5	11	11	12	11	11	11	11	11	11	11	11	11	11	11
3. Power Factor	(Typ)		3-Phase	models:	0.94@20	08/380Va	c, rated	output p	ower.								
4. Efficiency (*4))	%	83	84	84	86	86	88	88	88	88	88	88	88	88	88	88
5. Inrush Curren	t (*5)	Α		208V m													
2.2 POWER SU	JPPLY CONFIGURATION		15 Thuse	1001111	oucis. Ec	33 (11411 2	.071										
1. Parallel Opera			Up to 4	identical	units in	master/s	lave mo	de									
2. Series Operat	ion		Up to 2	identical	units. w	ith exter	nal diod	es. 600V l	Max to C	hassis qı	round						
	MENTAL CONDITIONS		100														
1. Operating ten			0~50°C.	100% lo	ad.												
2. Storage temp	<u> </u>		0~50°C, 100% load. -20~85°C														
3. Operating hu			20~90% RH (non-condensing).														
4. Storage humi			10~95% RH (non-condensing).														
5. Vibration	~···,			1% RH (non-condensing). 10F, method 514.5 , The EUT is fixed to the vibrating surface.													
6. Shock			 					inpacked		arrace.							
								ut curren		100m ah	ove 2000	m Alter	natively	derate n	naximum	amhien	t temn
7. Altitude			by 1°C/	100m ab	ove 2000	m. Non	operatin	g: 40000	ft (12000		000 2000	m, Aitei	natively,	derate ii	IIaxiiiiuii	Tamblen	it temp
8. RoHS Complia	ance		Compli	es with th	ne requir	ements o	of RoHS	directive.									
2.4 EMC																	
1. Applicable Sta	andards:																
2.ESD			IEC1000	-4-2. Air-	disch8	KV, conta	act disch	ı4KV									
3. Fast transients	5		IEC1000	-4-4. 2K\	/												
4.Surge immuni	ity		IEC1000-4-5. 1KV line to line, 2KV line to ground														
5.Conducted im	ımunity		IEC1000	-4-6, 3V													
6.Radiated imm	unity		IEC1000-4-3, 3V/m														
7.Magnetic field	limmunity		EN61000-4-8, 1A/m														
8.Voltage dips	•		EN61000-4-11														
9.Conducted en	nission		EN55022A, FCC part 15-A, VCCI-A.														
10. Radiated em	ission			2A, FCC r													
2.5 SAFETY			UL 60950-1, CSA 22.2 No. 60950-1,IEC 60950-1, EN 60950-1														
1. Applicable sta	indards:		UL 6095	0-1. CSA	22.2 No.	60950-1	JEC 609	50-1. EN 6	50950-1								
			Models		t 50V: Ou	tput is SE	LV, all co	mmunic		ntrolinte	erfaces (R	S232/48	5, IEEE, Iso	olated Ar	nalog, LA	N, Sense,	Remot
2.Interface class	sification		Remote	with 60\ Program re Hazaro	ning and	00V: Out Monitor	put is Ha	azardous 5 1-3, pins	, commı 14-16) ar	unication e SELV, S	n/control ense, Re	interfac mote Pro	es: RS232 ogrammi	2/485, IE ng and M	EE, Isolat Ionitorin	ed Analog (pins 8	og, LAN -13, pin
								azardous, ring) are			on/contr	ol interfa	aces (RS2	32/485,1	EEE, Isola	ted Anal	og, LAN
			Vout 5 Input-G	0V mod round: 2	els : In 828VDC	put-Out 1min,	tput (SI	ELV): 42	42VDC	1min, lı	nput-co	mmunio	ation/c	ontrol ((SELV):	4242VD	C 1mir
3.Withstand vol	tage		4242VD	C 1min, (Output(H	lazardou	tput (Ha s)-SELV:	izardous) 1900VDC	: 2600VE : 1min, O	OC 1min, utput(H	Input-co azardous	mmunic)-Groun	ation/co d: 1200VI	ntrol (SEI DC 1min,	LV):		
		Input-Ground: 2828VDC 1min. 100V< Vout 600V models: Input-Output(Hazardous): 3550VDC 1min, Input-communication/control (SELV): 4242VDC 1min, Hazardous. Output-communication/control(SELV): 4242VDC 1min, Output(Hazardous)-Ground: 2670VDC 1min, Input-Ground: 2828VDC 1min.															
3.Insulation resi	stance		More th	an 100M	ohm at 2	25°C, 709	% RH.										
2.6 MECHANIC	CAL CONSTRUCTION																
1. Cooling			Forced a	air flow: f	rom fror	nt to rear	. No ven	tilation h	oles at th	ne top or	bottom	of the ch	nassis; Va	riable fai	n speed.		
2. Dimensions (\	WxHxD)		W: 423n	nm, H: 88	mm, D: 4	142.5mm	(exclud	ing conn	ectors, e	ncoders	, handles	, etc.)					
3. Weight			13 kg.														
4. AC Input conr	nector (with Protective Cov	er)						on PC 6-									
5.Output conne	ctors		-					nm). 150\						noeniy D	/N·FR∩N	T-4-H-7	52
2.7 RELIABILIT			124 10 10	o v mode	Dus L	(11010		,. 1501		. models	C.Id	p com		.JCIIIA I /			
1. Warranty		-	5 years.														
			Ju yeurs.														

1. Warranty 5 years.
All specifications subject to change without notice.



Genesys™ Power Parallel and Series Configurations

Parallel operation - Master/Slave:

Active current sharing allows up to four identical units to be connected in an auto-parallel configuration for four times the output power. In Advanced Parallel Master/Slave Mode, total current is programmed and reported by the Master, Up to four supplies act as one.

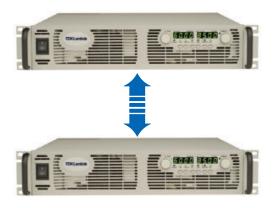


Series operation

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

Remote Programming via RS-232 & RS-485 Interface

Standard Serial Interface allows daisy-chain control of up to 31 power supplies on the same communication bus with built-in RS-232 & RS-485 Interface.



P/N: IEEE

Programming Options (Factory installed)

Digital Programming via IEEE Multi-Drop Interface

- Allows IEEE Master to control up to 30 slaves over RS-485 daisy-chain
- Only the Master needs be equipped with IEEE Interface
- IEEE 488.2 SCPI Compliant
- Program Voltage
- Measure Voltage
- Over Voltage setting and shutdown
- Error and Status Messages

- Program Current
- Measure Current
- Current Foldback shutdown

Isolated Analog Programming

Four Channels to Program and Monitor Voltage and Current. Isolation allows operation with floating references in harsh electrical environments. Choose between programming with Voltage or Current.

Connection via removable terminal block: Phoenix MC1,5/8-ST-3.81.

- Voltage Programming, user-selectable 0-5V or 0-10V signal. Power supply Voltage and Current Programming Accuracy $\pm 1\%$ Power supply Voltage and Current Monitoring Accuracy $\pm 1.5\%$
- Current Programming with 4-20mA signal.
 Power supply Voltage and Current Programming Accuracy ±1%
 Power supply Voltage and Current Monitoring Accuracy ±1.5%

P/N: LAN

P/N: IS510

P/N: IS420

- VISA & SCPI Compatible
- LAN Fault Indicators
- Auto-detects LAN Cross-over Cable
- Fast Startup

LAN Interface (Compliant to Class C

- Meets all LXI-C Requirements
- Address Viewable on Front Panel
- Fixed and Dynamic Addressing
- Compatible with most standard Networks
- TCP / UDP Socket Programming

Power Supply Identification / Accessories How to order

GEN	8 -	600	-	-
			Factory Options:	Factory AC Input Options:
Series	Output	Output	Option: IEEE	3P208 (Three Phase 170~265VAC)
Name	Voltage	Current	IS510	3P400 (Three Phase 342~460VAC)
	(0~8V	(0~600A)	IS420	
NA - J - I - E	-1-147		LAN	

Models 5kW

Model	Output Voltage VDC	Output Current (A)	Output Power (W)
GEN 8-600	0~8V	0~600	4800
GEN 10-500	0~10V	0~500	5000
GEN 16-310	0~16V	0~310	4960
GEN 20-250	0~20V	0~250	5000
GEN 30-170	0~30V	0~170	5100
GEN 40-125	0~40V	0~125	5000

Factory option	P/N
RS-232/RS-485 Interface built-in Standard	-
GPIB Interface	IEEE
Voltage Programming Isolated Analog Interface	IS510
Current Programming Isolated Analog Interface	IS420
LAN Interface (Complies with L / Class C)	LAN

Model	Output Voltage VDC	Output Current (A)	Output Power (W)
GEN 60-85	0~60V	0~85	5100
GEN 80-65	0~80V	0~65	5200
GEN 100-50	0~100V	0~50	5000
GEN 150-34	0~150V	0~34	5100
GEN 200-25	0~200V	0~25	5000
GEN 300-17	0~300V	0~17	5100
GEN 400-13	0~400V	0~13	5200
GEN 500-10	0~500V	0~10	5000
GEN 600-8.5	0~600V	0~8.5	5100

Accessories

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	RS-232
PC Connector Communication Cable Power Supply Connector	DB-9F Shield Ground L=2m EIA/TIA-568A (RJ-45)	DB-9F Shield Ground L=2m EIA/TIA-568A (RJ-45)	DB-25F Shield Ground L=2m EIA/TIA-568A (RJ-45)
P/N	GEN/485-9	GEN/232-9	GEN/232-25

2. Serial link cable*

Daisy-chain up to 31 Genesys[™] power supplies.

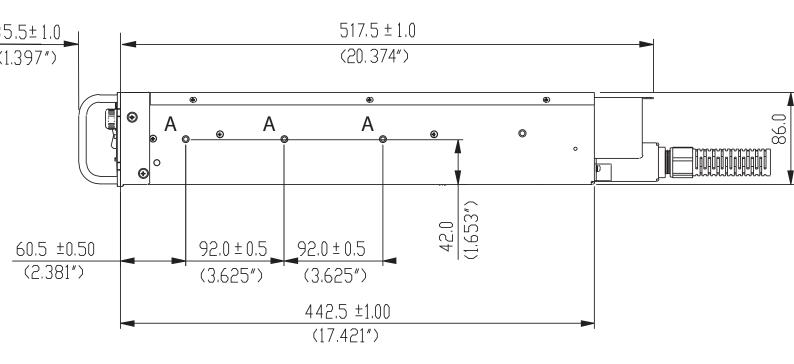
Mode	Power Supply Connector	Communication Cable	P/N
RS-485	EIA/TIA-568A (RJ-45)	Shield Ground L=50cm	GEN/RJ45

^{*} Included with power supply



Also available, Genesys™ 1U Half Rack 750W 1U full Rack 750W/1500W/2400W 2U full Rack 3300W

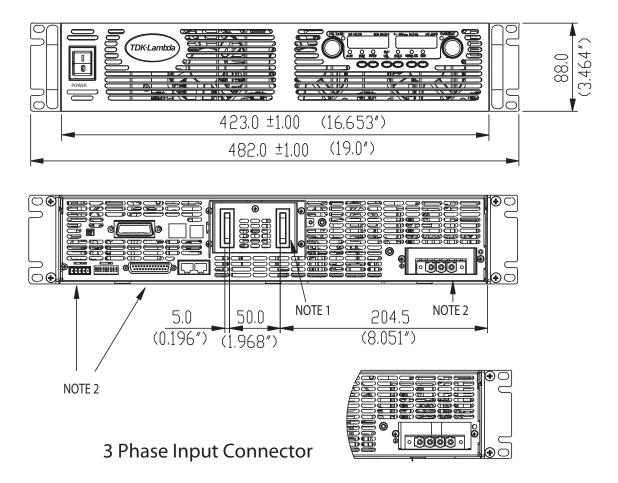




NOTE

- 1. Bus bars for 8V to 100V models (shown)
 Wire clamp connector for 150V to 600V models
- 2. Plug connectors included with the power supply
- 3. Chassis slides mounting holes #10-32 marked "A" GENERAL DEVICES P/N: C-300-S-116 or equivalent

Outline Drawing Genesys™ 5kW Units





enesi

New! 800V, 1000V, 1250V and 1500V models - 10kW/15kW - 208VAC/400VAC/480VAC Programmable DC Power Supplies Full-Rack 10kW/15kW in 3U Height Built in RS-232 & RS-485 Interface Parallel Operation (Basic or Advanced)

Optional Interfaces: LAN ([X] compliant w/ Multi-Drop) IEEE (488.2 & SCPI compliant w/ Multi-Drop) USB (2.0 w/ Multi-Drop) Isolated Analog (5V/10V or 4-20mA Pgm/Mon)



Genesys™ Family

GENH-1U 750W Half-Rack

GEN-1U 750W/1.5kW/2.4kW Full-Rack

GEN-2U 3.3kW/5.0kW Full-Rack

GEN-3U 10kW/15kW Full-Rack

TDK·Lambda

www.us.tdk-lambda.com/hp



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:

- High Power Density 10kW/15kW in full-rack 3U package
- High Output Current (up to 1000ADC)
- Popular worldwide 3Φ AC inputs, (208VAC, 400VAC, 480VAC)
- Power Factor 0.88 (Passive PFC on all 3Φ AC Inputs)
- Output Voltage from 7.5V (1000A) to 1500V (10A)
- Built-in RS-232/RS-485 Serial Interface (standard)
- Last Setting Memory, Safe/Auto-ReStart, Front Panel Lock/Unlock
- "Advanced Parallel" configuration reports total system current (up to four identical units)
- Global Commands for RS-232/RS-485 Serial Interface
- Continuous Encoders for Voltage and Current Adjustment (Coarse & Fine mode)
- Independent Remote SHUTOFF and Remote ENABLE/DISABLE
- 19" Rack Mounted for ATE and OEM Applications, zero-stack capability
- Optional Interfaces

Light compliant LAN (Class C) w/ Multi-Drop capability: option for all models IEEE (488.2 & SCPI compliant) w/ Multi-Drop capability: option for all models USB (2.0) w/ Multi-Drop capability: option for all models Isolated Analog Programming and Monitoring Interface

0-5V/0-10V: option for models with Vout ≤ 600V, standard for models with Vout ≥ 800V 4-20mA: option for all models

- LabView[™] and LabWindows[™] Software Drivers
- Worldwide Safety Agency Approvals; UL Recognized and CE Mark for LV, EMC and RoHS2 Directives (208VAC (all models), 400VAC (all models) and 480VAC models (30V ≤ Vout ≤ 1500V))
- Five Year Warranty



Applications

GenesysTM power supplies are designed for demanding applications.

Test & Measurement systems using GPIB control save significant costs by incorporating the optional IEEE Multi-Drop Interface (IEMD) in the Master unit. This allows up to 30 Slave units to be used with the standard RS-485 Multi-Drop Serial interface.

Automated System designers will appreciate new, standard, remote programming features such as Global commands. Also, new high-speed status monitoring is available for the standard RS-485 and optional LAN (LXI compliant) Interface.

Industrial & Military high power systems can be configured with up to four identical units in parallel (up to 60kW). No space is required above or below each power supply (zero-stack). The Master unit can be configured by the user to report the total Output current of the combined system. Applications include Heaters, Magnets and Laser Diodes.

Aerospace & Satellite Testing systems use the complete Genesys™ Family: <u>1U</u>-750W Half-Rack, <u>1U</u>-750W/ 1.5kW/2.4kW Full-Rack, <u>2U</u>-3.3kW/5kW Full-Rack and <u>3U</u>-10kW/15kW Full-Rack. All are identical in Front Panel, Rear Panel Analog and Digital Interface commands. A wide variety of Outputs (voltage and current) allows testing of many different user configurations.

Component Device Testing is simplified because of the many user-friendly control options in the Analog and Digital interfaces. Lamps, capacitors, motors and actuators are typical devices tested.

Medical Imaging and Treatment systems require reliable power. Modular construction, SMT and thoroughly proven designs assure continuous performance at full rated power.

Semiconductor Processing & Burn-in equipment designers appreciate the wide variety of worldwide AC Inputs and DC Outputs from which to select, depending on application. Selectable Safe-Start and Auto Re-Start protects loads and process integrity. Typical applications include Magnets, Filaments and Heaters.



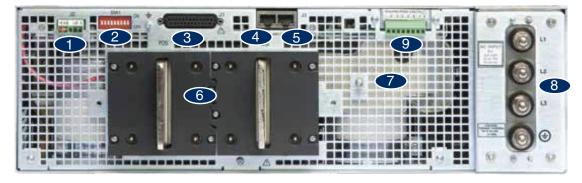
Front Panel Description (7.5V < Vout < 25V)



- 1. AC ON/OFF Switch (circuit breaker for Vout < 25V; rocker switch for Vout > 30V models)
- 2. Air Intake allows zero-stacking for maximum system flexibility and power density.
- 3. Continuous encoder controls Output Voltage, Address, OVP and UVL settings.
- 4. Voltage Display shows Output Voltage and directly displays OVP, UVL and Address settings.
- 5. Continuous encoder controls Output Current, sets Baud rate and Advanced Parallel mode.
- 6. Current Display shows Output Current and displays Baud rate. Displays total current in Parallel Master/Slave Mode.
- 7. Function/Status LEDs:
 - Alarm
- Fine Control
- Preview Settings

- Foldback Mode
- Remote Mode
- Output On
- 8. Pushbuttons allow flexible user configuration
 - Coarse and Fine adjustment of Output Voltage/Output Current and Advanced Parallel Master or Slave select.
 - Preview Settings and set Voltage/Current with Output OFF, Front Panel Lock/Unlock.
 - Parallel Master/Slave (Basic and Advanced).
 - Set Output OVP and UVL Limits.
 - Set Output Current Foldback Protection.
 - Go to Local Mode and select unit Address and Baud rate.
 - Output ON/OFF and Safe-Start/Auto Re-Start mode.

Rear Panel Description (7.5V < Vout < 25V)



- 1. Remote/Local Output Voltage Sense Connections.
- 2. DIP Switches select 0-5V or 0-10V Programming and other functions.
- 3. DB25 (Female) connector allows Analog Program and Monitor (non-isolated) and other functions.
- 4. RS-485 OUT to other Genesys™ Power Supplies.
- 5. RS-232/RS-485 IN Remote Serial Programming.
- 6. Output Connectors: Rugged 2 hole busbars (shown) for models where Vout < 30V, single hole busbars for 30V ≤ Vout ≤ 300V Output, and threaded-stud terminals for models where Vout > 300V.
- 7. Exit air assures reliable operation when zero-stacked.
- 8. Input Terminals L1, L2, L3, and Ground (threaded studs).
- 9. Optional location for LAN (LXI Class C), IEEE (488.2 & SCPI compliant), USB (2.0) or Isolated Analog Interface.



Genesys™ 3U 10kW Specifications

40 MODEL	OFN.	175 4000	40 4000	10 5 000	00 500	05 400	00.000	40.050	F0 000	00.407	00.405	400 400	105.00	10k\
1.0 MODEL	GEN			12.5-800			30-333	40-250	50-200		80-125	100-100	125-80	X
1.Rated Output Voltage	VDC	7.5	1000	12.5	20	25	30	40	50	60	80	100	125 80	X
2.Rated Output Current 3.Rated Output Power	ADC kW	1000 7.5	1000	10.0	500 10.0	400 10.0	333 10.0	250 10.0	200 10.0	167 10.0	125 10.0	100	10.0	X
4.Efficiency (min) at low AC line, 100% Rated Load	% %	7.5	10.0	10.0	10.0	10.0	10.0	83	10.0	10.0	10.0	10.0	10.0	 ^
4. Elliciency (Illin) at low AC line, 100 % Hated Load	/6		l		С	ontact Fa	ctory for o		els					 ^
1.1 CONSTANT VOLTAGE MODE (CV)						ornaor r a	0.0.7 .0. 0	<u> </u>	0.0					
1. Max. Line Reg (0.1% - Vor ≤ 30V; 0.05% - 30V < Vor ≤	T ,,	T												T .,
600V; 0.05% - 600V < Vor ≤ 1500V)	mV	7.5	10	12.5	20	25	30	20	25	30	40	50	62.5	X
2. Max. Load Reg (0.1% for Vor ≤ 30V; 0.05% for 30V < Vor	mV	7.5	10	10.5	20	25	20	20	25	20	40	F0	60.5	X
≤ 600V; 0.1% for 600V < Vor ≤ 1500V); (*5)	mv	7.5	10	12.5	20	25	30	20	25	30	40	50	62.5	<u> </u>
3. Output Ripple, rms (5Hz~1MHz), CV mode; (*1)	mV	20	20	20	20	20	20	20	20	20	25	25	25	X
4. Output Noise, p-p (20MHz), CV mode; (*1)	mV	60	60	60	60	60	60	60	75	75	100	100	125	X
5.Remote Sense Compensation / Wire	V	1	1	1	1	1	1.5	2	3	3	4	5	5	X
6. Temperature Stability						ter 30 mir	nute warm	up (cons	stant Line	, Load &	Temperat	ure)		ļ X
7. Temperature Coefficient	ppm / °C	± 200 (:	± 0.02% c	of Vo(rated	i)) / °C									X
8. Up-Prog. Response Time, 0 ~ Vomax, full-load	ms							100						X
9. Up-Prog. Response Time, 0~Vomax, no-load	ms							50						X
10. Transient Response Time (CV mode); (*2), (*4)	ms						Les	s than 3						X
1.2 CONSTANT CURRENT MODE (CC)														
1. Max. Line Reg. (0.1% - $lor \ge 333A$; 0.050% - 17A < $lor < 333A$; 0.15% - $lor < 17A$)	mA	1000	1000	800	500	400	333	125	100	83.5	62.5	50	40	X
2. Max. Load Reg (0.1% - lor ≥ 333A; 0.075% - 17A ≤ lor <	1	4000	1000	000	F02	400	000	100	450	40-				١.
333A; 0.2% - lor < 17A); (*3), (*5)	mA	1000	1000	800	500	400	333	188	150	125	94	75	60	X
3. Output Ripple, rms (5Hz~1MHz), CC mode	mA	5300	4000	2560	1000	640	444	250	160	67	50	40	32	X
4. Temperature Stability		± 0.05%	of lo(rate	ed) over 8	hours, at	ter 30 mir	nute warm	n up (cons	stant Line	, Load &	Temperat	ure)		Х
5. Temperature Coefficient	ppm/°C	± 300 (:	± 0.03% c	of lo(rated))) / °C									X
1.3 PROTECTIVE FUNCTIONS														
1. OCP	%	0 ~ 100												X
2. OCP type			nt current											T X
3. Foldback Protection (FOLD)	†			; Manual	reset by fr	ont panel	OUT but	ton or Dia	ital comn	nunication	n, user-se	lectable		X
4. Foldback Response Time	s			= 0.25 / N							,			✝ x
5. OVP type		Inverter	shut-dow	n; Manua	I reset by	AC On/O	ff recycle,	OUT but	ton, Rem	ote Analo	g or Digita	al commuin	cation	l x
6. OVP Programming Accuracy	%		Vo(rated)								<u> </u>			Тx
7. OVP Trip Point	V	5% to 1	05% of Vo	(rated) fo	r Vor ≤ 60	0V; 10% t	to 105% c	of Vo(rated	d) for 600	V < Vor <	1500V			X
7. OVF HIP FOIR	v			greater tha					of Vo(ra	ted)				^
8. OVP Response Time	ms			Output to r Output to					V					x
9. Max. OVP Reset Time	S	7 (from	AC On/O	ff switch to	urn On)									X
10. Over-Temperature Protection (OTP)		Shut do	wn if inter	rnal tempe	erature ex	ceeds sat	fe operatii	ng levels	(Latched:	Safe / U	nlatched: /	Auto)		X
11. Phase-Loss Protection		Yes, po	wer suppl	y shutdow	n (Latche	d: Safe-S	tart / Unla	atched: A	uto-Resta	ırt)				X
1.4 REMOTE ANALOG CONTROLS & SIGNALS														
1. Vout Voltage Programming	0~100%,	0 ~ 5V or	0 ~ 10V,	user-selec	ctable., Ac	curacy &	Linearity:	±1% of V	o(rated)					T X
2. lout Voltage Programming		0 ~ 5V or												l x
3. Vout Resistor Programming		0 ~ 5/10k							<u> </u>	ated)				│ x
4. lout Resistor Programming	0~100%,	0 ~ 5/10k	ohm full-s	cale, use	r-selectab	le, Accura	cy & Line	arity: ± 1	% of lo(ra	ated)				X
5. Shut-Off (SO) Control (rear panel)	By Voltag	je: 0.6V =	DIS, 2-15	V = ENA	(default) d	or by Dry	Contact: 0	Open = El	NA, Shor	t = DIS (ι	ser-selec	table logic)		X
6. Output Current Monitor	0 ~ 5V oı	10 ~ 10V, A	Accuracy:	± 1% of I	o(rated), ı	user-selec	ctable							X
7. Output Voltage Monitor	0 ~ 5V oı	0 ~ 10V, A	Accuracy:	± 1% of \	/o(rated),	user-sele	ctable							X
8. Power Supply OK (PS_OK) Signal	Yes. TTL	High = Oł	<, 0V = Fa	ail (500ohi	m series i	mpedanc	e)							X
9. CV/CC Signal	CV: TTL	High (4 ~	5V), Max	source cu	rrent = 10	mA; CC:	TTL Low	(0 ~ 0.4V), Max sir	nk current	= 10mA			X
10. Enable/Disable		act; Open								acts = 6V	'			X
11. Remote/Local Selection		Remote or												X
12. Remote/Local Signal	Signals of	perating r	node; Ope	en collecto	or: Local =	Open (N	lax voltag	je = 30V)	Remote	= On (Ma	ax sink cu	rrent = 10m	A)	X
1.5 FRONT PANEL	<u> </u>		· <u></u>		· <u></u>	· <u></u>			· <u></u>	· <u></u>		<u></u>		
1.Control Functions	Vout/ Iou	t manual a	adjust by s	separate e	encoders	(COARSE	and FIN	E adjustn	nent seled	ctable)				T X
		_ manual a				•		-		,				X
	1	selection I			-									X
	1	FF, Outpu	-						CV to CC	, Go-to-L	.ocal			X
		RS-485, L							,					X
		e selection		. ,						URREN	Γ Adjust e	ncoder)		X
	1	d Parallel									-	,		$\overline{}$
2.Display		4 digits, A					5. (,);	, . 5.4	(0)			X
-17 TV	_	4 digits, A			. ,									$\frac{1}{x}$
		E meter di	-		. ,		sense) or	at load (I	Remote s	ense)				X
3.Indications		D's: PRE								,		-		1
		: ALARM						, . IIIL						X
1.6 DIGITAL PROGRAMMING & READBACK	*		· ·											
Vout Programming Accuracy	+ 0.5% ^	f Vo(rated	`	-					-					X
2. lout Programming Accuracy		f lo(rated)		with Io < 1	I875∆·+ (7% of Io	(rated) to	r lo >187	5Δ					 ^
Vout Programming Resolution		Vo(rated)	ioi uillis l	**************************************	101.UA, I	J.1 /0 UI IU	<u> </u>	1 10 ≥ 10/.	<u> </u>					+
Vout Programming Resolution I lout Programming Resolution	0.02% of													+
•		. ,	al) + 0.00/	of Volrat	od))									-
5. Vout Readback Accuracy	- ` 	of Vo(actua												X X
6. lout Readback Accuracy		of lo(actua		oi io(rate	u))									-
7. Vout Readback Resolution		Vo(rated)												<u> </u>
8. lout Readback Resolution	0.02% of		otwoon \/	out overs	ding IEEE	Limit	l cunchi l	nhihit torr	ing Oal		-			 ×
9. OV Response Time 10. Other Functions		ximum (b										-		 X
	- Set UVP	UVI IIMITS	s, sei Loc	ar nemote	. Operati	nu baram	eters and	Status, G	aet identii	ιy				>



10kW

^{*1} Ripple and Noise at Vo(rated) and rated Load, Ta = +25C and nominal AC Input per EIJ R900A.

*2. Time for the Output voltage to recover within 2% of rating for a load current change of 50~100% or 100-50% of lo(rated).

*3 .From 20% - 100% for models with lor < 17A.

*4 Operating with a load that continuously pulses the current (or voltage) can reduce the operating life of the Power Supply. Please contact TDK-Lambda Sales/Technical Support to discuss the

application in detail.
*5. CV Mode: from 5% to 100% of Irated (over 5% to 100% of Prated); CC Mode: from 20% to 100% of Vrated (over 20% to 100% of Prated).

Genesvs™ 3U 10kW Specifications

1.0 MODEL	GEN	150-66	200-50	250-40	300-33	400-25	500-20	600-17	800-12.5	1000-10	1250-8	1500-6.7	
1.Rated Output Voltage	VDC	150	200	250	300	400	500	600	800	1000	1250	1500	
2.Rated Output Current	ADC	66	50	40	33	25	20	17	12.5	10	8.0	6.7	
3.Rated Output Power	kW	9.9	10.0	10.0	9.9	10.0	10.0	10.2	10.0	10.0	10.0	10.0	
1.Efficiency (min) at low AC line, 100% Rated Load	%				83						3.5		
I.1 CONSTANT VOLTAGE MODE (CV)					Con	act Factor	y for othe	r models					
I. Max. Line Reg (0.1% - Vor ≤ 30V; 0.05% - 30V < Vor ≤													三
600V; 0.05% - 600V < Vor ≤ 1500V)	mV	75	100	125	150	200	250	300	400	500	625	750	
2. Max. Load Reg (0.1% - Vor ≤ 30V; 0.05% - 30V < Vor ≤ 600V; 0.1% - 600V < Vor ≤ 1500V); (*5)	mV	mV 75 100 125 150 200 250 300 800 1000 1250 1500											
3. Output Ripple, rms (5Hz~1MHz), CV mode; (*1)	mV	25	35	35	60	60	60	60	80	100	120	140	П
4. Output Noise, p-p (20MHz), CV mode; (*1)	mV	150	175	200	200	300	350	350	700	800	1000	1400	
5.Remote Sense Compensation / Wire	V	5	5	5	5	5	5	5	5	5	5	5	
6. Temperature Stability						fter 30 mi	nute warn	n up (cons	stant Line,	Load & Te	mperature))	\vdash
7. Temperature Coefficient	ppm / °C	± 200 (0.02% of	Vo(rated)									Ш
3. Up-Prog. Response Time, 0~Vomax, full-load	ms				100					1			╙
9. Up-Prog. Response Time, 0~Vomax, no load	ms				50					1			┡
0. Transient Response Time (CV mode); (*2), (*4)	ms				ess than	3				Less t	han 1		L
1.2 CONSTANT CURRENT MODE (CC)													
. Max. Line Reg. (0.1% - Ior ≥ 333A; 0.050% - 17A < Ior < 33A; 0.15% - Ior < 17A)	mA	33	25	20	17	13	10	9	19	15	12	10	
2. Max. Load Reg (0.1% - lor ≥ 333A; 0.075% - 17A ≤ lor < 133A; 0.2% - lor < 17A); (*3), (*5)	mA	50	38	30	25	19	15	13	25	20	15	14	Г
B. Output Ripple, rms (5Hz~1MHz), CC mode	mA	26	20	16	13	10	8	7	15	10	6	4	Н
4. Temperature Stability											mperature)		┝
5. Temperature Stability	ppm / °C	-		lo(rated))		00 11111	.3.0 110111	~P (00113	=1110,		porature)		H
'	Гррпіт О	1 ± 000 (0.00 /0 01	io(rateu))	7 0								_
1.3 PROTECTIVE FUNCTIONS	T 6'	10 400											_
I. OCP	%	0 ~ 100											\vdash
2. OCP type			nt current		rocet l-	front	I OUT !	tton or D'	nital ac	aunicati	1100* 0-1-	toble	\vdash
3. Foldback Protection (FOLD)						<u>-</u> _					user-selec	lavie	\vdash
4. Foldback Response Time	S					/ Default :					or Dicital -	omm	\vdash
5. OVP type					ii ieset by	, AC On/C	п тесусте	JOI DUT	ion, nemo	ne Arialog	or Digital c	OHIIII.	\vdash
6. OVP Programming Accuracy	%		f Vo(rated		for Vor	600\/- 100	4 to 1059/	of Volvet	ed) - 600)	/ < Vor ≤ 15	500\/		\vdash
7. OVP Trip Point	V	Shall al	ways be	greater tha	an 105%	of Vo(setti	ng); Defa	ult = 105%			JUU V		L
3. OVP response time	ms					drop) for or drop) for			V				
9. Max. OVP reset time	S	7 (from	AC On/C	ff switch t	urn On)								L
10. Over-Temperature Protection (OTP)				<u> </u>							atched: Aut	to)	
11. Phase-Loss Protection		Yes, po	wer supp	ly shutdov	vn (Latch	ed: Safe-S	Start / Unl	atched: Au	uto-Restar	rt)			
1.4 REMOTE ANALOG CONTROLS & SIGNALS													
1. Vout Voltage Programming	0~100%,	0 ~ 5V or	0 ~ 10V,	user-sele	ctable, Ad	curacy &	Linearity:	± 1% of V	o(rated)				Π
2. lout Voltage Programming	0 ~ 100%	, 0~5V or	0 ~ 10V,	user-sele	ctable. Ac	curacy &	Linearity :	± 1% of Ic	(rated)				
3. Vout resistor programming	0~100%,	0~5/10ko	hm full-so	cale, user-	selectabl	e. Accurad	y & Linea	rity ± 1%	of Vo(rate	ed)			
4. Iout Resistor Programming						e. Accurac							L
5. Shut-Off (SO) Control (rear panel)					` 			en = ENA	, Short =	DIS (user-s	selectable I	logic)	Ļ
6. Output Current Monitor						user-sele							ㄴ
7. Output Voltage Monitor						, user-sele							┞
8. Power Supply OK (PS_OK) Signal						impedanc		(0 0 0			10 :		┝
9. CV/CC Signal										k current =	10mA		\vdash
10. Enable/Disable						m voltage				icts = 6V	-		\vdash
11. Remote/Local Selection						0 ~ 0.6V =				- On /Ma:-	oink ours	at _ 10~ ^\	\vdash
12. Remote/Local Signal 1.5 FRONT PANEL	j Signais 0	perating i	noue; Op	en collect	or: Local	= Open (N	viax voita(je = 30V),	, nemoté :	= On (Max	sink currer	it = IUMA)	_
1.Control Functions	Vout/ lour	t manual -	adjust by	senarato	encodere	(COARSI	and FIN	F adjustm	nent salso	table)	-	-	г
						ncoder, Fi							H
	!		, ,		•	of Addres			-				Г
			, ,	•				Control (C	CV to CC).	Go-to-Loc	al		Г
					•	selection b							Г
	Baud rate	e selection	n (RS-232	2/RS-485	only): 120	0, 2400, 4	1800, 960	0 and 19,	200 (by C	URRENT A	Adjust enco	oder)	Г
	1										ave unit(s)	,	Г
2.Display	Voltage: 4	4 digits, A	ccuracy:	± 0.5% of	Vo(rated) ±1 count	ı						
	Current: 4 digits, Accuracy: ± 0.5% of lo(rated) ±1 count												
						ply (Local				ense)			
3.Indications						OUT ON ENA, SO		CC, FINE					
I.6 DIGITAL PROGRAMMING & READBACK													_
I. Vout Programming Accuracy	± 0.5% o	f Vo(rated)										Г
2. lout Programming Accuracy	-			with lo <	187.5A; ±	0.7% of Id	o(rated) fo	r lo ≥187.	5A				Г
3. Vout Programming Resolution	0.02% of	Vo(rated)											
4. lout Programming Resolution	0.04% of	lo(rated)											
5. Vout Readback Accuracy	± (0.1% c	of Vo(actu	al) + 0.2%	6 of Vo(ra	ted))								
6. lout Readback Accuracy				6 of Vo(ra	ted))								
7. Vout Readback Resolution	0.02% of Vo(rated) X 0.02% of lo(rated) X												
8. lout Readback Resolution	0.02% of												-
9. OV Response Time	20ms maximum (between Vout exceeding IEEE Limit and supply Inhibit turning On) X									上			
10. Other Functions	-					ing Param							ı



^{*1.} Ripple and Noise at Vo(rated) and rated Load, Ta = +25C and nominal AC input, per EIJ R9002A
*2. Time for the Output voltage to recover within 2% of rating for a load current change of 50~100% or 100~50% of lo(rated).
*3. From 20% - 100% for models with lor < 17A.
*4 Operating with a load that continuously pulses the current (or voltage) can reduce the operating life of the Power Supply. Please contact TDK-Lambda Sales/Technical Support to discuss the application in detail.
*5. CV Mode: from 5% to 100% of Irated (over 5% to 100% of Prated); CC Mode: from 20% to 100% of Vrated (over 20% to 100% of Prated).
All specifications subject to change without notice.

Genesys[™] 3U 15kW Specifications

1.0 MODEL	GEN	N/A	N/A	N/A	N/A	N/A	30-500	40-375	50-300	60-250	80-187.5	100-150	125-120	Τ
1.Rated Output Voltage	VDC						30	40	50	60	80	100	125	Ť
2.Rated Output Current	ADC						500	375	300	250	187.5	150	120	╈
B.Rated Output Power	kW						15.0	15.0	15.0	15.0	15.0	15.0	15.0	Ť
4.Efficiency (min) at low AC line, 100% Rated Load	%							10.0		88	10.0	10.0	10.0	十
F. Emiciency (min) at low AC line, 100 % Hated Load	/6						actory for o	ther mod	lels	- 00				+
I.1 CONSTANT VOLTAGE MODE (CV)						ornaot r	201019 101 0							_
I. Max. Line Reg (0.1% - Vor ≤ 30V; 0.05% - 30V < Vor ≤	mV						30	20	25	30	40	50	62.5	Τ
600V; 0.05% - 600V < Vor ≤ 1500V)	1117							20			40		02.5	ļ
2. Max. Load Reg (0.1% - Vor \leq 30V; 0.05% - 30V < Vor \leq	mV						30	20	25	30	40	50	62.5	1
600V; 0.1% - 600V < Vor ≤ 1500V); (*5)	!													
3. Output Ripple, rms (5Hz~1MHz), CV mode; (*1)	mV						20	20	20	20	25	25	25	4
4. Output Noise, p-p (20MHz), CV mode; (*1)	mV						60	60	75	75	100	100	125	4
5.Remote Sense Compensation / Wire	V						1.5	2	3	3	4	5	5	4
6. Temperature Stability						ter 30 m	inute warm	up (cons	stant Line	, Load &	Temperatu	ire)		1
7. Temperature Coefficient	ppm / °C	± 200 (:	± 0.02% c	of Vo(rated)) / °C									4
B. Up-Prog. Response Time, 0 ~ Vomax, full-load	ms							00						4
9. Up-Prog. Response Time, 0~Vomax, no load	ms							50						ļ
0. Transient Response Time (CV mode); (*2), (*4)	ms						Less	s than 3						⅃
.2 CONSTANT CURRENT MODE (CC)														
. Max. Line Reg. (0.1% - lor ≥ 333A; 0.050% - lor < 333A)	mA						500	375	334	125	94	75	60	Т
2. Max. Load Reg (0.1% - lor ≥ 333A; 0.075% - 25A ≤ lor <	ĺ													+
133A; 0.2% - lor < 25A); (*3), (*5)	mA						500	375	334	188	141	113	90	1
B. Ripple, rms (5Hz~1MHz), CC mode	mA						350	200	150	100	100	100	50	+
I. Temperature Stability							nute warm						- 30	+
i. Temperature Stability i. Temperature Coefficient						or 30 IIII	iule Wd[[]]	up (CONS	tant LINE	LUAU &	remperatul	<i>U)</i>		+
	ppm/°C	± 300 (:	± U.U3% (of lo(rated))/ · C									_
.3 PROTECTIVE FUNCTIONS														_
. OCP	%	0 ~ 100												I
2. OCP type		Constar	nt current											7
B. Foldback Protection (FOLD)		Output	shutdown	; Manual r	eset by fr	ont pane	I OUT butte	on or Dig	ital comr	nunicatio	n, user-sele	ectable		1
I. Foldback Response Time	s	Less tha	an 1 (Min	= 0.25 / N	Max = 25 /	Default	= 0.25); Se	ttable via	"FBD" c	ommand				1
i. OVP type							Off recycle,				og or Digita	l communi	cation	1
S. OVP Programming Accuracy	%	_					,				3 - 3			t
, , , , , , , , , , , , , , , , , , ,	E9/ to to 1059/ of Volvated) for Vor < 600V/ 109/ to 1059/ of Volvated) 600V/ vVor < 1500V													
7. OVP Trip Point	V Shall always be greater than 105% of Vo(setting); Default = 105% of Vo(rated) - 600V < Vor ≤ 1500V Shall always be greater than 105% of Vo(setting); Default = 105% of Vo(rated)													
OVB Bosponos Timo	Leasthan 10 (for Output to basin to dran) for Vor < 600V													
3. OVP Response Time	ms Less than 10 (for Output to begin to drop) for 600V < Vor ≤ 1500V													
9. Max. OVP Reset Time	s	7 (from	AC On/O	ff switch to	ırn On)									T
10. Over-temperature Protection (OTP)		Shut do	wn if inte	rnal tempe	erature ex	ceeds sa	afe operatin	ng levels	(Latched:	Safe / U	nlatched: A	uto)		Ť
11. Phase-Loss Protection							Start / Unla							1
1.4 REMOTE ANALOG CONTROLS & SIGNALS	•			-										_
	I o 1000/	O 51/0*	0 101/		toble As	011500110	Lincoritu	. 10/ of \	/o/rotod\					т
1. Vout Voltage Programming							Linearity:							+
2. lout Voltage Programming							Linearity: ±							+
3. Vout Resistor Programming							acy & Line							4
4. lout Resistor Programming							acy & Line							4
5. Shut-Off (SO) Control (rear panel)							ntact: Ope	n = ENA	, Short =	DIS (use	r-selectable	e logic)		4
S. Output Current Monitor	0 ~ 5V or													⇃
COutput Voltage Monitor	0 ~ 5V or	0 ~ 10V, A	Accuracy:	± 1% of V	o(rated),	user-sele	ectable							
B. Power Supply OK (PS_OK) Signal	Yes. TTL	High = Oł	K, $OV = Fa$	ail (500ohr	n series i	mpedan	ce)							T
D. CV/CC Signal	CV: TTL I	ligh (4 ~ !	5V), Max	source cu	rrent = 10	mA; CC	TTL Low (0 ~ 0.4V), Max sir	nk current	t = 10mA			J
0. Enable/Disable	Dry conta	ct; Open	= OFF, SI	nort = ON;	Maximur	n voltage	across En	nable/Dis	able cont	acts = 6V	/			1
11. Remote/Local Selection							= Local / 2							1
12. Remote/Local Signal							Max voltage			= On (Ma	ax sink cur	rent = 10m	A)	1
	5		, - р			- 1 (9			\-				_
.5 FRONT PANEL	1 ,, .,,		p			00:55		- 1: :						_
Control Functions						•	E and FINE			ctable)				ŀ
	1						ront Panel		OCK					ļ
	1		,	,			lresses = 3							ļ
						, .	Foldback (), Go-to-L	ocal			Į
				. ,			by rear pan							Į
	Baud rate	selection	n (RS-232	/RS-485 c	only): 1200), 2400,	4800, 9600	and 19,	200 (by C	Current Ad	djust encod	ler)		ſ
	Advanced	Parallel	Master/SI	ave: Hx =	Master ur	nit, where	e x = # of S	lave unit	s (0 to 4)	; S = Slav	e unit(s)			I
2.Display				0.5% of \										1
. ,		0 ,	,	0.5% of \	` ,									t
	1		,		' '		sense) or	at load (Remote s	ense)				Ì
B.Indications							N/OFF, CV/			/				†
-				P, FOLD, /				_ O, 1 11VL	_					
C DICITAL DEOCEDAMAINO O DEADRACIO			<u>, , - · · </u>	,, -	,	,	·							_
.6 DIGITAL PROGRAMMING & READBACK	1 . 0.50/	N-(- · ·												_
. Vout Programming Accuracy	± 0.5% of				075:	701	1							4
2. lout Programming Accuracy	 		tor units	with lo < 1	87.5A; ± ()./% of I	o(rated) for	10 ≥187.	5A					1
. Vout Programming Resolution	0.02% of													ļ
1. lout Programming Resolution	0.04% of													╝
5. Vout Readback Accuracy	± (0.1% c	f Vo(actua	al) + 0.2%	of Vo(rate	ed))									J
6. lout Readback Accuracy	± (0.1% c	f lo(actua	l) + 0.4%	of lo(rate	d))									Î
7. Vout Readback Resolution	0.02% of	Vo(rated)												Ī
3. lout Readback Resolution	0.02% of Vo(rated) X 0.02% of lo(rated) X													
			,		ii IEEE		al according law	la Ha Ha A	ina Onl					+
9. OV Response Time	20ms ma	ximum (bo	etween vo	out exceed	ing ieee	Limit an	a supply in	ınıbit türr	iirig Off)					- 1



^{*1.} Ripple and Noise at Vo(rated) and rated Load, Ta = 25C and nominal AC input, per EIJ R9002A.

*2. Time for the Output voltage to recover within 2% of rating for a load current change of 50~100% or 100-50% of rated Output.

*3. From 20% - 100% for models with lor < 25A.

*4. Operating with a load that continuously pulses the current (or voltage) can reduce the operating life of the Power Supply. Please contact TDK-Lambda Sales/Technical Support to discuss the application in detail.

*5. CV Mode: from 5% to 100% of Irated (over 5% to 100% of Prated); CC Mode: from 20% to 100% of Vrated (over 20% to 100% of Prated).

All specifications subject to change without notice.

Genesys™ 3U 15kW Specifications

VDC

ADC

kW

150

100

15.0

200

75

15.0

250

60

15.0

300

50

15.0

88

1.Rated Output Voltage

2.Rated Output Current

3.Rated Output Power

4.Efficiency (min) at low AC line, 100% Rated Load

.1 CONSTANT VOLTAGE MODE (CV) . Max. Line Reg (0.1% - Vor ≤ 30V; 0.05% - 30V < Vor ≤ 00V; 0.05% - 600V < Vor ≤ 1500V) . Max. Load Reg (0.1% - Vor ≤ 30V; 0.05% - 30V < Vor ≤ 00V; 0.1% - 600V < Vor ≤ 1500V); (*5)	mV	75	100		Cont	act Factor	y for othe	r models)
.00V; 0.05% - 600V < Vor ≤ 1500V) . Max. Load Reg (0.1% - Vor ≤ 30V; 0.05% - 30V < Vor ≤	mV	75	100										
. Max. Load Reg (0.1% - Vor ≤ 30V; 0.05% - 30V < Vor ≤			100	125	150	200	250	300	400	500	625	750)
UUV: U.1% - 6UUV < VOr < 1500V): (*5)	mV	75	100	125	150	200	250	300	800	1000	1250	1500	,
S. Output Ripple, rms (5Hz~1MHz), CV mode; (*1)	mV	25	35	35	60	60	60	60	80	100	120	140	'
Output Noise, p-p (20MHz), CV mode; (*1)	mV	150	175	200	200	300	350	350	700	800	1000	1400	
Remote Sense Compensation / Wire	V	5	5	5	5	5	5	5	5	5	5	5	
Temperature Stability											emperature		
Temperature Stability Temperature Coefficient	ppm / °C		02% of Vo			iller 50 iiii	ilule wall	ii up, con	Statit Line	, Luau & I	emperature		
<u> </u>		200 (0.	02% OI VO	(rated)) /							7		1
Up-Prog. Response Time, 0~Vomax, full-load	ms				100								+
Up-Prog. Response Time, 0~Vomax, no load	ms				50	0					7		
0. Transient Response Time (CV mode); (*2), (*4)	ms				ess than	3				Less	than 1		
.2 CONSTANT CURRENT MODE (CC)													
. Max. Line Reg (0.1% - Ior ≥ 333A; 0.050% - Ior < 333A)	mA	50	38	30	25	19	15	13	28	23	18	15	
. Max. Load Reg (0.1% - lor ≥ 333A; 0.075% - 25A ≤ lor < 33A; 0.2% - lor < 25A); (*3), (*5)	mA	75	57	45	38	28	23	19	38	30	24	20	
B. Output Ripple, rms (5Hz~1MHz), CC mode	mA	50	20	20	20	10	10	10	15	10	6	4	
. Temperature Stability			-			er 30 min	ute warm	up (cons	tant Line,	Load & Te	mperature)		
. Temperature Coefficient	ppm / °C	± 300 (± 0.03% o	f lo(rated	I)) / °C								
.3 PROTECTIVE FUNCTIONS													
OCP	%	0 ~ 100)										
. OCP type			nt current				-						
s. Foldback Protection				· Manual	rocet by	ront none	I OUT hou	ton or Di	nital com	munication	, user-selec	table	
											, user-selec	aule	
Foldback Response Time	S		an 1 (Min										_
. OVP type					al reset by	On/Off re	cycle, OL	F button,	Remote	Analog or I	Digital comn	nunication	_
. OVP Programming Accuracy	%		f Vo(rated)										
OVP Trip Point	٧		to 105% of lways be g							600V < Vor ated)	≤ 1500V		
S. OVP response time	ms	Less th	an 10 (for	Output to	begin to	drop) for '	Vor ≤ 600	V			,		
			an 2.0 (for			arop) for	ουυν < V	or ≤ 1500	· V				
. Max. OVP reset time	S		AC On/Of										
0. Over temperature Protection		Shut do	own if inter	nal temp	erature ex	ceeds sa	fe operati	ng levels	(Latched:	Safe / Unl	atched: Auto)	;
1. Phase Loss Protection		Yes, po	wer supply	y shutdov	vn (Latche	ed: Safe-S	tart / Unla	atched: A	uto-Resta	ırt)			
.4 REMOTE ANALOG CONTROLS & SIGNALS													
. Vout Voltage Programming	01009/	0 5\/	r 0 ~ 10V, ı	icor oola	otable ^-	ouroov o	incorit	± 10/ aft	/o(rotod)				Т
			r 0 ~ 10V, t r 0 ~ 10V, t										+
. lout Voltage Programming													
. Vout resistor programming			hm full-sc										
. lout Resistor Programming			hm full-sc										
. Shut-Off (SO) Control (rear panel)								n = ENA	, Short-D	IS (user-se	lectable log	ic)	
. Output Current Monitor			Accuracy:										
Output Voltage Monitor			Accuracy:										
. Power Supply OK (PS_OK) Signal	Yes. TTL I	High = Ol	K, 0V = Fa	il (500oh	m series	mpedanc	e)						
. CV/CC Signal	CV: TTL F	ligh (4 ~	5V), Max	source cu	urrent = 10	mA; CC:	TTL Low	$(0 \sim 0.4V)$), Max sin	nk current =	= 10mA		
0. Enable/Disable	Dry conta	ct; Open	= OFF, Sh	ort = ON	l; Max. vol	tage acro	ss Enable	/Disable	contacts =	= 6V			
Remote/Local Selection	Selects R	emote or	Local ope	ration by	voltage:) ~ 0.6V =	Local / 2	- 15V = F	Remote				
2. Remote/Local Signal										= On (Max	sink curren	t = 10mA)	
	0.3	· · · · · · · · · · · · · · · · · ·	, -р.			- (/				,	
.5 FRONT PANEL													
.Control Functions			adjust by s			•		•		ctable)			
	•		adjust by \		-				ock				
!	Address s	election	by VOLTAG	GE Adjus	t encoder	# of Add	esses = 3	31					
	AC ON/O	FF, Outpo	ut On/Onn	, Restart	Modes (A	uto/Safe)	, Foldback	Control	(CV to CC	C), Go-to-L	ocal		
· ·	RS232/RS	S-485, LA	AN, IEEE (IEMD) ar	nd USB se	election by	rear pan	el DIP-sw	ritch				
				,						URRENT	Adjust enco	der)	
			•							; S = Slave	•	- /	
Display			ccuracy: ±					- aro unit	- (0 10 1),	, <u>3 = 31476</u>	(-)		+
Diopiay			ccuracy: ±		. ,								-
			-		. ,		aana -\	at la! "	Dam-+-				_
Indications			isplays Vol							ense)			
Indications			VIEW, FO (OVP, OTI					OU, FINE	=				
.6 DIGITAL PROGRAMMING & READBACK			, ,	, . 320,	,	, 55							
. Vout Programming Accuracy	± 0.5% of	Vo(rated	l)										T
. lout Programming Accuracy) for units v	with Io <	187.5A· ±/	-0.7% of I	o(rated) fo	or lo >187	.5A				1
. Vout Programming Resolution	0.02% of				. J . J . J . T /	J., 70 OI I	Strateu) II	. 10 = 107					
. lout Programming Resolution	0.02 % of												
<u> </u>			ol) + 0.004	of \/o/	tod)\		-						_
. Vout Readback Accuracy			al) + 0.2%										
. lout Readback Accuracy			al) + 0.4%	of Io(rate	ed))								
Vout Readback Resolution	0.02% of	-)										Ц
. lout Readback Resolution	0.02% of												
	20ms max	ximum (b	etween Vo	out excee	ding OVP	Limit and	supply in	hibit turni	ng On)				
OV Response Time				./5	Oneret	n = n = r = m	otoro and	Status C	et Identit	tv			
	Set OVP/	UVL limit	s, Set Loc	al/Remot	e, Operat	ng param	eleis and	Olalus, C	act ideitin	· y			

150-100 200-75 250-60 300-50 400-37.5 500-30 600-25 800-18.8 1000-15 1250-12

400

37.5

15.0

500

30

15.0

600

25

15.0

800

18.8

15.04

^{*4.} Operating with a load that continuously pulses the current (or voltage) can reduce the operating life of the Power Supply. Please contact TDK-Lambda Sales/Technical Support to discuss the application in detail.



15kW

Χ

Χ

Х

1500-10

1500

10

15.0

1250

12

15.0

93.5

1000

15

15.0

General Specifications, Genesys™ 3U 10kW/15kW

2.1 INPUT CHARACTERISTICS		
1. Input Voltage / Frequency (range)		208VAC (180-253), 400VAC (342-440 for Vout ≥ 30V; 360-440 for Vout < 30V), 480VAC (432-528); 47-63Hz (all)
2. No. of phases		3-Phase (Wye or Delta) 4 wire total (3 phases and 1 Protective Earth (PE) ground)
3. Dropout Voltage	V	180 / (342/360) / 432
4. Input Current (180VAC/342VAC or 360VAC/432VAC)	Arms	10kW - 45/23/20 (Vout ≤ 600V); 40/23/20 (800V ≤ Vout ≤ 1500V) - at full rated Output power 15kW - 64/32/27 (Vout ≤ 600V); 55/32/27 (800V ≤ Vout ≤ 1500V) - at full rated Output power
5. Inrush Current	Α	Not to exceed full rated Input current (see 2.1.4 (Input Current))
6. Power Factor, passive (typical)		Vout < 600V: 0.88 (passive), 10kW/15kW (208VAC, 400VAC, 480VAC) Vout > 600V: 0.90/0.93 - 10kW/15kW (208VAC), 0.89/0.92 - 10kW/15kW (400VAC), 0.84/0.88 - 10kW/15kW (480VAC)
7. Leakage Current	mA	3.5 maximum (EN60950)
8. Input Protection		Circuit breaker: 208VAC, (Vout ≤ 30V); Line fuse: 208VAC (Vout ≥ 30V) and 400VAC/480VAC (all models)
10. Phase Imbalance	%	≤ 5% on three-phase Input

2.2 POWER SUPPLY CONFIGURATION

1. Parallel Operation; (*6)	Up to four (4) identical units may be connected in Master/Slave Mode with Single-Wire/Two-Wire connection. In "Advanced-Parallel", the current of Master unit multiplied by number of units connected in parallel is available via digital interface and displayed on the front panel display of the Master unit. Remote Analog current monitor of Master unit is scaled to the Output current of the Master unit (only)
2. Series Operation (*6)	Possible (with external diodes); Up to two identical units with total Output voltage not to exceed ± 600V from Chassis ground (for Vor ≤ 600V) or not to exceed ± 1500V from Chassis ground (for 600V < Vor ≤ 1500V)

2.3 ENVIRONMENTAL CONDITIONS

Operating Temperature	0 to +50°C, 100% load
2. Storage Temperature	-20 to +70°C
Operating Humidity	20 to 80% RH (non-condensing)
4. Storage Humidity	10 to 90% RH (non-condensing)
5. Vibration & Shock	ASTM D4169, Standard Practice for Performance Testing of Shipping Containers and Systems, Shipping Unit: Single Package Assurance Level: Level II; Acceptance Criteria: Criterion 1 - No product damage Criterion 2 - Packaging is intact, Distribution Cycle: 12 - Air (intercity) and motor freight (local), unitized is used.
6. Altitude	Operating: +50°C up to 7500ft. (2500m), +45°C from 7501 to 10,000ft (2501m - 3000m), Non-Operating 40,000ft (12,000m)
7. Audible Noise	70dBA at lo(rated) (measured 1m from front panel) for Vout < 30V; 65dBA at lo(rated) (measured 1m from front panel) for Vout ≥ 30V

2.4 EMC	
1. 208VAC Input (all models)	CE Mark
1. ESD	EN61000-4-2 (IEC 801-2): Air-discharge ± 8kV , Contact-discharge ± 4kV
2. Fast Transients	EN61000-4-4 (IEC 1000-4-3)
3. Surge Immunity	EN61000-4-5 (IEC 1000-4-5)
Conducted Immunity	EN61000-4-6 (IEC 1000-4-6)
5. Radiated Immunity	EN61000-4-3 (IEC 1000-4-3)
Power Frequency Magnetic Field	EN61000-4-8
7. Conducted Emissions	EN55011A, FCC part 15J-A
8. Radiated Emissions	EN55011A, FCC part 15J-A
2. 400VAC (all models) /480VAC Input (Vout ≥ 30V)	CE Mark
1. ESD	EN61000-4-2 (IEC 801-2): Air-discharge ± 8kV , Contact-discharge ± 4kV
2. Fast Transients	EN61000-4-4 (IEC 1000-4-3)
3. Surge Immunity	EN61000-4-5 (IEC 1000-4-5)
Conducted Immunity	EN61000-4-6 (IEC 1000-4-6)
5. Radiated Immunity	EN61000-4-3 (IEC 1000-4-3)
Power Frequency Magnetic Field	EN61000-4-8
7. Voltage Dips, Short Interruptions and Voltage Variations Immunity Test (400VAC Only)	IEC 61000-4-11
8. Conducted Emissions	EN55011A, FCC part 15J-A
9. Radiated Emissions	EN55011A, FCC part 15J-A

2.5 SAFETY

2.5 SAFETT	
1.Applicable Standards	UL/cUL 60950-1, EN60950-1 recognized, CB Scheme, CE Mark (208VAC, 400VAC and 480VAC) 7.5V ≤ Vout ≤ 400V: Output is Hazardous; LAN/IEEE/USB/Isolated Analog are SELV 400V < Vout ≤ 600V: Output is Hazardous; LAN/IEEE/USB/Isolated Analog are Not SELV 600V < Vout ≤ 1500V: Output is Hazardous; LAN/IEEE/USB/Isolated Analog are SELV
2. Withstand Voltage: (208VAC/400VAC/480VAC; for 60 seconds); (*7)	Vout < 80V: Input - Ground: 2200VDC/2900VDC/2900VDC, Input-Hazardous Output: 2200VDC/3100VDC, Input - SELV: 2200VDC/2900VDC/2900VDC/2900VDC 80V ≤ Vout ≤ 300V: Input - Ground: 2200VDC/2900VDC, Hazardous Output - Ground: 2200VDC/2900VDC, Input - SELV: 2200VDC/2900VDC, Input - Ground: 2200VDC/
3.Insulation Resistance	20Megohms (typical) at 500VDC. Ta = +25°C

2.6 MECHANICAL CONSTRUCTION	
1. Cooling	Fan-driven with airflow from front to rear. Fan-speed control on models with Vout ≥ 30V "Zero Stackable" top and bottom. Vents on side shall not be blocked. Chassis slides or suitable rear support required. EIA rack mounting
2. Dimensions (W x H x D)	Width: 429mm / 16.9"; Height: 3U - 133mm / 5.22" Depth: 564mm / 22.2" for Vout ≤ 600V, 581mm / 22.9" for 800V ≤ Vout ≤ 1500V; excluding connectors, encoders, handles, etc.
3. Weight	43kg / 97 lbs (Vout ≤ 600V); 32kg / 70lbs (Vout > 600V)
AC Input connector (with Protective Cover)	M6 x 1" (25.4mm) threaded studs (L1, L2, L3 and Chassis GND) and terminal cover.
5.Output Connectors (busbar)	Busbars: Vout \leq 25V: (two-hole busbars); 30V \leq Vout \leq 300V: busbars (one hole busbars) Threaded-stud terminals: 400V \leq Vout \leq 600V: M6 x 0.5" (12.7mm) threaded-stud; 800V \leq Vout \leq 1500V: M6 x 1.0" (25.4mm) threaded-stud
6.Control Connectors	Analog Programming: DB25, plastic connector, AMP747461-5, Female on Supply; Male on Mating connector, 747321, 25 pin Sub-D connector.
7. Mounting Method	Standard 19" Rack-Mount, provision for standard chassis slides. Side/Rear Support is required; Do not mount by front panel only
8. Output Ground Connection	M5 x 0.91" (23mm) threaded-stud

2.7 WARRANTY 1. Warranty

5 years

*6. Please contact TDK-Lambda Sales/Technical Support to discuss your Parallel or Series application in more detail.

*7 Please contact TDK-Lambda Sales/Technical Support to discuss your System-Level Withstand Voltage requirements in more detail.

All specifications subject to change without notice.





Genesys™ Power Parallel and Series Configurations

Parallel Operation - Master/Slave (*6)

Active current sharing allows up to four identical units to be connected in an Auto-parallel configuration for the Output power. In Advanced Parallel Master/Slave Mode, total current is programmed and reported by the Master, Up to four 10kW/15kW Power Supplies in parallel act as one 40kW/60kW Power Supply.



Series Operation (*6)

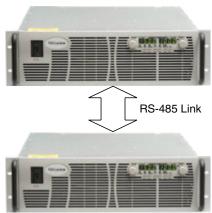
Up to two units may be connected in series to increase the Output voltage or to provide bipolar output. (Max 600V to Chassis GND for Vor \leq 600V; Max 1500V to Chassis GND for 600V < Vor \leq 1500V).

Remote Programming via RS-232 & RS-485 Interface

Standard Serial Interface allows daisy-chain control of up to 31 power supplies on the same communication bus with built-in RS-232 & RS-485 Interface or optional LAN, USB or IEEE Interface.







P/N: "----

Programming Options (Factory installed)

Standard RS-232/RS-485 (Multi-Drop) Interface

- Standard Units are equipped with the RS-485 Multi-Drop function
- Allows RS-232 or RS-485 Master unit to control up to 30 (standard) Slave units using RS-485 daisy-chain

LAN Interface (LXI Compliant w/ Multi-Drop)

- Meets all LXI Class C Requirements
- Address Viewable on Front Panel
- Fixed and Dynamic Addressing
- Fast Startup

- VISA & SCPI Compatible
- LAN Fault Indicators
- Auto-detects LAN Cross-over Cable
- Compatible with most standard Networks

IEEE (Multi-Drop) Interface

- IEEE 488.2 & SCPI compliant
- Allows IEEE Master to control up to 30 (standard) Slave units using RS-485 daisy-chain
- Program/Measure Voltage
- Over-Voltage setting and shutdown
- Error and Status Messages

- Program/Measure Current Current Foldback shutdown

P/N: USB (for all models)

P/N: LAN (for all models)

P/N: IEMD (for all models)

USB (Multi-Drop) Interface

- USB 2.0 compliant
- Allows serial connection to computer USB port
- Allows USB Master to control up to 30 (standard) Slaves using RS-485 daisy-chain
- Uses same command set as standard RS-232/RS-485 interface

Isolated Analog Programming

- Option for models with Vout ≤ 600V (IS510 & IS420); IS510 built-in for models where 800V ≤ Vout ≤ 1500V
- Four Channels total (Two channels to Program Voltage and Current; Two channels to Monitor Voltage and Current)
- Isolation allows operation with floating references in harsh electrical environments
- Choose between programming with Voltage or Current
- Connection via removable terminal block: Phoenix MC1,5/8-ST-3.81
- Voltage Programming, User-selectable 0-5V or 0-10V signal

Power supply Voltage and Current Programming Accuracy: ±1.0% Power supply Voltage and Current Monitoring Accuracy: ±1.5%

Current Programming with 4-20mA signal

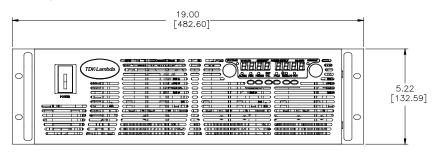
Power supply Voltage and Current Programming Accuracy: ±1.0%

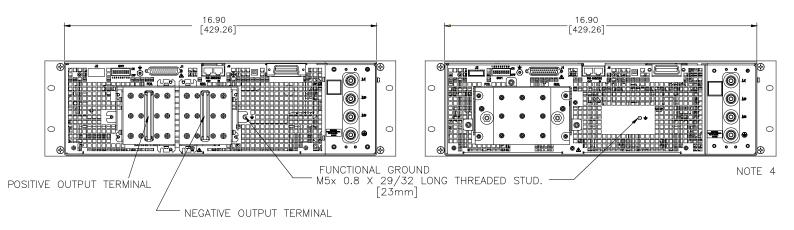
P/N: IS510 (for Vout \leq 600V)

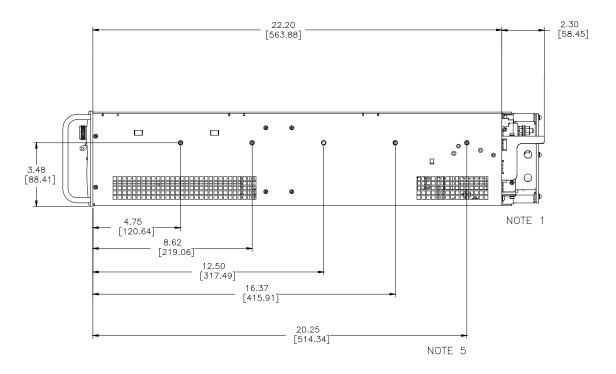
P/N: IS420 (for all models)



Outline Drawing: Genesys™ 10kW/15kW (7.5V to 25V - 208VAC/400VAC/480VAC)



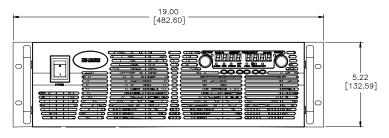


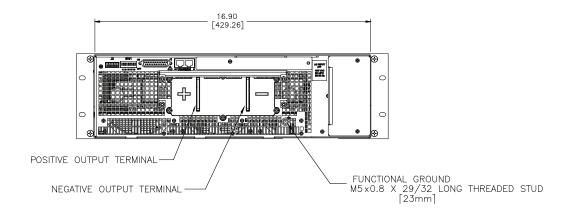


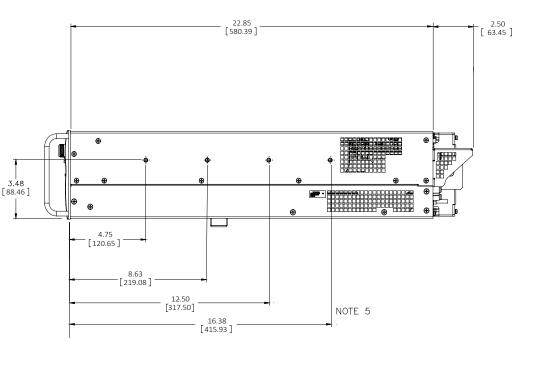
- 1. Busbars for models where Vout < 30V Output: two holes 0.42" (10.72mm) diameter.
- 2. N/A
- 3. N/A
- 4. Input Terminals: M6 x 1" (Qty = 3); Ground Terminal: M5 x 1" (Qty = 2)
- 5. Mounting for Slide Mounts (not included).
 Recommend: General Devices, Chassis Trak P/N C230-S-122; Verify requirements with slide manufacturer.
 Secure with pan head screw: M5 x 0.8-8mm long (max).

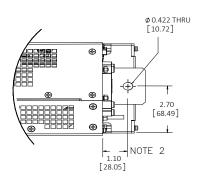


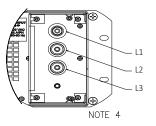
Outline Drawing: Genesys™ 10kW/15kW (30V to 300V - 208VAC/400VAC/480VAC)







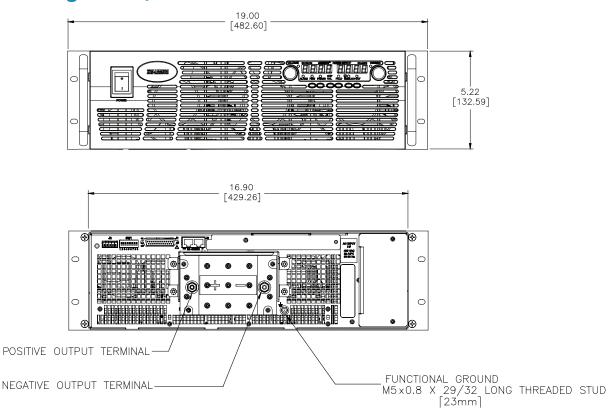


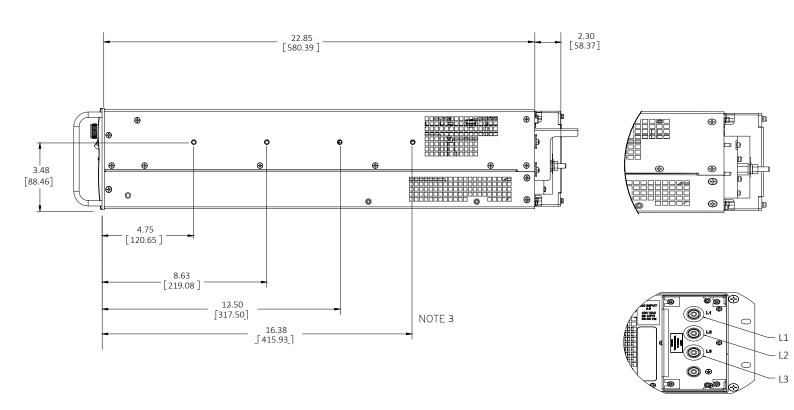


- 1. N/A
- 2. Bus bars for models 30-300V Output (10kW/15kW): one hole 0.42" (10.72mm) diameter.
- 3. N/A
- 4. Input Terminals: M6 x 1" (Qty = 3) + Ground M5 x 1" (Qty = 2)
- 5. Mounting for Slide Mounts (not included).
 Recommend General Devices, Chassis Trak P/N C230-S-122; Verify requirements with slide manufacturer.
 Secure with pan head screw: M5 x 0.8-8mm long (max).



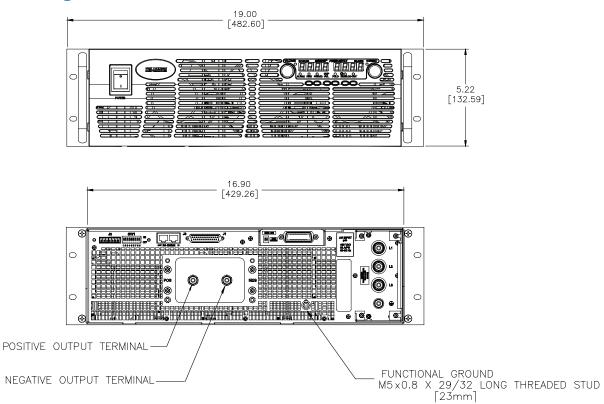
Outline Drawing: Genesys™ 10kW/15kW (400V to 600V - 208VAC/400VAC/480VAC)

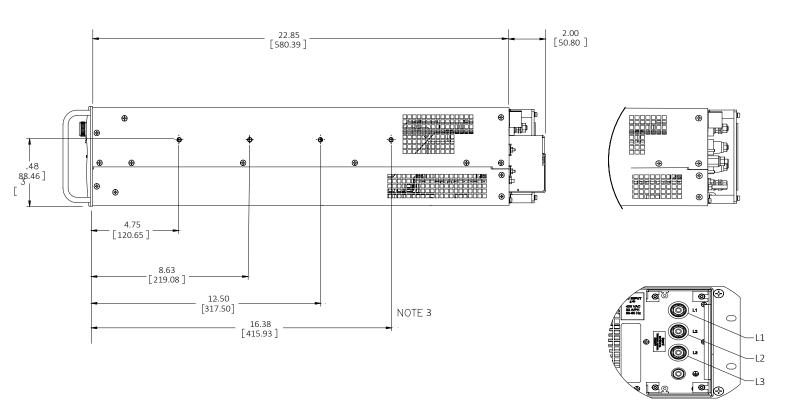




- 1. N/A
- 2. N/A
- 3. Threaded-stud terminals for models with 300V < Vout \leq 600V (M5 x 1").
- 4. Input Terminals M6 x 1" (Qty = 3) + Ground M5 x 1" (Qty = 2)
- 5. Mounting for Slide Mounts (not included).
 Recommend General Devices, Chassis Trak P/N C230-S-122; Verify requirements with slide manufacturer.
 Secure with pan head screw: M5 x 0.8-8mm long (max).

Outline Drawing: Genesys™ 10kW/15kW (800V to 1500V - 208VAC/400VAC/480VAC)





- 1. N/A
- 2. N/A
- 3. Threaded stud terminals for models with $800V \le Vout \le 1500V$ Output (M5 x 1").
- 4. Input Terminals M6 x 1" (Qty = 3) + Ground M5 x 1" (Qty = 2)
- 5. Mounting for Slide Mounts (not included).

 Recommend General Devices, Chassis Trak P/N C230-S-122; Verify requirements with slide manufacturer.



Power Supply Identification / Accessories (Genesys™ 3U 10kW/15kW) How to Order:

10 **GEN** 1000 LAN Factory Options Series Output Output Option: LAN Name Voltage Current (0~10V) (0~1000A)**IEMD** USB

IS510 IS420 3P208

AC Input Options 3P208 (Three-Phase 208VAC) 3P400 (Three-Phase 400VAC) 3P480 (Three-Phase 480VAC)

Model	Output Voltage (Vdc)	Output Current (Adc)	Output Power (kW)
GEN 7.5-1000	0~7.5	0~1000	7.5
GEN 10-1000	0~10	0~1000	10
GEN 12.5-800	0~12.5	0~800	10
GEN 20-500	0~20	0~500	10
GEN 25-400	0~25	0~400	10
GEN 30-333	0~30	0~333	10
GEN 30-500	0~30	0~500	15
GEN 40-250	0~40	0~250	10
GEN 40-375	0~40	0~375	15
GEN 50-200	0~50	0~200	10
GEN 50-300	0~50	0~300	15
GEN 60-167	0~60	0~167	10
GEN 60-250	0~00	0~250	15
GEN 80-125	0~80	0~125	10
GEN 80-187.5	0~80	0~187.5	15
GEN 100-100	0~100	0~100	10
GEN 100-150	0~100 	0~150	15
GEN 125-80	0~125	0~80	10
GEN 125-120	0~125	0~120	15
GEN 150-66	0~150	0~66	10
GEN 150-100	0~150	0~100	15

Model	Output Voltage (Vdc)	Output Current (Adc)	Output Power (kW)	
GEN 200-50	0~200	0~50	10	
GEN 200-75	0~200	0~75	15	
GEN 250-40	0~250	0~40	10	
GEN 250-60	0~250	0~60	15	
GEN 300-33	0.000	0~33	10	
GEN 300-50	0~300	0~50	15	
GEN 400-25	0~400	0~25	10	
GEN 400-37.5	0~400	0~37.5	15	
GEN 500-20	0~500	0~20	10	
GEN 500-30	0~500	0~30	15	
GEN 600-17	0.000	0~17	10	
GEN 600-25	0~600	0~25	15	
*GEN 800-12.5	0~800	0~12.5	10	
*GEN 800-18.8	0~800	0~18.8	15	
*GEN 1000-10	0. 1000	0~10	10	
*GEN 1000-15	0~1000	0~15	15	
*GEN 1250-8	0.1050	0~8	10	
*GEN 1250-12	0~1250	0~12	15	
*GEN 1500-6.7	0. 1500	0~6.7	10	
*GEN 1500-10	0~1500	0~10	15	

Factory options

RS-232/RS-485 Multi-Drop Interface (built-in standard) LAN Interface (LXI Class C compliant w/ Multi-Drop) GPIB (488.2 w/ Multi-Drop) Interface USB (2.0 w/ Multi-Drop) Interface Isolated Analog Interface (Voltage Program/Monitor) Isolated Analog Interface (Current Program/Monitor)

P/N

LAN

IEMD USB

IS510 *(built-in standard on 800-1500V models)

IS420

Accessories

1. Serial Communication cable (optional)

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

Mode	RS-485	RS-232	RS-232	
PC Connector	DB-9F	DB-9F	DB-25F	
Communication Cable	Shield Ground, L=2m	Shield Ground, L=2m	Shield Ground, L=2m	
Power Supply Connector	EIA/TIA-568A (RJ-45)	EIA/TIA-568A (RJ-45)	EIA/TIA-568A (RJ-45)	
P/N	GEN/485-9	GEN/232-9	GEN/232-25	

2. Serial Link cable (optional)

Daisy-chain up to 31 Genesys™ power supplies.

	Mode	Power Supply Connector	Communication Cable	P/N
Γ	RS-485	EIA/TIA-568A (RJ-45)	Shield Ground, L=50cm	GEN/RJ45



Genesys™ Family - Output Voltage / Output Current

Model	GENH		GEN-1U		GE	N-2U	GE	EN 3U
Rated Power	750W	750W	1.5kW	2.4kW	3.3kW	5.0kW	10kW	15kW
Voltage Range Output Current Range								
0~6V	0~100A	0~100A	0~200A					
0~7.5V							0~1000A	
0~8V	0~90A	0~90A	0~180A	0~300A	0~400A	0~600A		
0~10V				0~240A	0~330A	0~500A	0~1000A	
0~12.5V	0~60A	0~60A	0~120A				0~800A	
0~15V					0~220A			
0~16V				0~150A		0~310A		
0~20V	0~38A	0~38A	0~76A	0~120A	0~165A	0~250A	0~500A	
0~25V							0~400A	
0~30V (15kW) - NEW !	0~25A	0~25A	0~50A	0~80A	0~110A	0~170A	0~333A	0~500A
0~40V (15kW) - NEW !	0~19A	0~19A	0~38A	0~60A	0~85A	0~125A	0~250A	0~375A
0~50V (15kW) - NEW !			0~30A				0~200A	0~300A
0~60V	0~12.5	0~12.5A	0~25A	0~40A	0~55A	0~85A	0~167A	0~250A
0~80V	0~9.5A	0~9.5A	0~19A	0~30A	0~42A	0~65A	0~125A	0~187.5A
0~100V	0~7.5A	0~7.5A	0~15A	0~24A	0~33A	0~50A	0~100A	0~150A
0~125V							0~80A	0~120A
0~150V	0~5A	0~5A	0~10A	0~16A	0~22A	0~34A	0~66A	0~100A
0~200V - NEW !					0~16.5A	0~25A	0~50A	0~75A
0~250V							0~40A	0~60A
0~300V	0~2.5A	0~2.5A	0~5A	0~8A	0~11A	0~17A	0~33A	0~50A
0~400V (5.0kW) - NEW !						0~12.5A	0~25A	0~37.5A
0~500V (5.0kW) - NEW !						0~10A	0~20A	0~30A
0~600V	0~1.3A	0~1.3A	0~2.6A	0~4A	0~5.5A	0~8.5A	0~17A	0~25A
0~800V - NEW !							0~12.5A ⁽⁵⁾	0~18.8A (5)
0~1000V - NEW !							0~10A ⁽⁵⁾	0~15A (5)
0~1250V - NEW !							0~8A ⁽⁵⁾	0~12A (5)
0~1500V - NEW !							0~6.7A ⁽⁵⁾	0~10A (5)
Weight (kg/lb)	4.5 / 9.9	7.0 / 15.0	8.5 / 18.0	10 .0 / 22.0	13.0 / 29.0	16.0 / 35.0	43.0 / 97.0	43.0 / 97.0 32.0 / 70.0 ⁽⁶⁾

^{(6) 800}V - 1500V models only (10kW/15kW)

AC Inputs

85-265Vac, 1Ø	• (1)	• (1)	• (1)					
230Vac, 1Ø				• (1	• (1)			
208Vac, 3Ø				• (1	• (1)	• (1)	• (3)	• (3)
400Vac, 3Ø					• (1)	• (1)	• (3)	• (3)
480Vac, 3Ø					• ⁽²⁾ - NEW !	• ⁽²⁾ - NEW !	• (3), (4)	• (3), (4)

 $^{(1) \ \ \}text{UL Listed; CE Mark (\textbf{RoHS2}); (2) UL Listed (\textbf{RoHS2}); (3) \ \ \text{UL Recognized, CE Mark (\textbf{RoHS2}) - (Vout $\geq 25V$);} \ \ 4) \ \ \text{UL Recognized, RoHS2 (Vout $< 25V$)}$

Options (All Models)

""	Standard RS-232/RS-485 Master with RS-485 Multi-Drop capability installed
LAN	LXI Compliant LAN Interface (Class C) with RS-485 Multi-Drop capability installed
IEMD	IEEE Master (IEEE 488.2 & SCPI compliant) with RS-485 Multi-Drop capability installed
USB	USB (2.0) Master with RS-485 Multi-Drop capability installed
IS510	Isolated Analog Program/Monitor (0-5V or 0-10V, user-selectable) for 6V-600V models; *(5)
IS420	Isolated Analog Program/Monitor (4-20mA)

All "Options" are factory installed and limited to one "option" per power supply *(5) Isolated 5V/10V (IS510) Interface is bulit-in standard for 800V-1500V models All specifications are subject to change without notice



www.uk.tdk-lambda.com/zplus





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Features	Benefits
• 2U high	Minimises system rack height
Built-in USB, RS232 & RS485	Highly flexible system integration
Optional LAN, GPIB & isolated analogue programming interfaces	Choice of additional communications
Outputs up to 650Vdc	Wide application coverage
Arbitrary function generation	Convenient for repeated test processes
• 5 year warranty	High reliability

200W, 400W, 600W and 800W Programmable DC Power Supplies



Model Selec	ctor							
Model	Voltage Adjust Range	Current Adjust Range	Max Power (W)	Ripple 5Hz-1MHz (mV)	Noise 20MHz BW (mV)	Ripple 5Hz-1MHz (mA)	Efficiency % (100-200VAC)	Front Panel Output Jacks (Option)
Z10-20	0 - 10	0 - 20	200	5	50	25	80 / 82	L/L2
Z10-40	0 - 10	0 - 40	400	5	50	70	80 / 82	L/L2*
Z10-60	0 - 10	0 - 60	600	5	50	150	80 / 82	L/L2*
Z10-72	0 - 10	0 - 72	720	5	50	180	80 / 82	L/L2*
Z20-10	0 - 20	0 - 10	200	6	50	15	82 / 84	L/L2
Z20-20	0 - 20	0 - 20	400	6	50	40	81 / 83	L/L2
Z20-30	0 - 20	0 - 30	600	5	50	75	82 / 84	L/L2*
Z20-40	0 - 20	0 - 40	800	5	50	100	82 / 84	L/L2*
Z36-6	0 - 36	0 - 6	216	6	50	8	83 / 85	L/L2
Z36-12	0 - 36	0 - 12	432	6	50	15	83 / 85	L/L2
Z36-18	0 - 36	0 - 18	648	5	50	25	84 / 85	L/L2
Z36-24	0 - 36	0 - 24	864	5	50	31	84 / 85	L/L2
Z60-3.5	0 - 60	0 - 3.5	210	7	50	4	83 / 85	L/L2
Z60-7	0 - 60	0 - 7	420	7	50	8	83 / 85	L/L2
Z60-10	0 - 60	0 - 10	600	12	50	8	83 / 85	L/L2
Z60-14	0 - 60	0 - 14	840	12	60	28	83 / 85	L/L2
Z100-2	0 - 100	0 - 2	200	8	80	3	83 / 85	L2
Z100-4	0 - 100	0 - 4	400	8	80	3	84 / 86	L2
Z100-6	0 - 100	0 - 6	600	15	80	5	84 / 86	L2
Z100-8	0 - 100	0 - 8	800	15	80	12	84 / 86	L2
Z160-1.3	0 - 160	0 - 1.3	208	10	100	1.2	79 / 81	L2
Z160-2.6	0 - 160	0 - 2.6	416	10	100	1.5	84 / 86	L2
Z160-4	0 - 160	0 - 4	640	10	100	2	86.5 / 88.5	L2
Z160-5	0 - 160	0 - 5	800	10	100	2	86.5 / 88.5	L2
Z320-0.65	0 - 320	0 - 0.65	208	25	150	0.8	79 / 81	L2
Z320-1.3	0 - 320	0 - 1.3	416	25	150	1	84 / 86	L2
Z320-2	0 - 320	0 - 2	640	30	150	1.5	87 / 88.5	L2
Z320-2.5	0 - 320	0 - 2.5	800	30	150	1.5	86.5 / 89	L2
Z375-2.2	0 - 375	0 - 2.2	825	30	150	1.5	87.5 / 89.5	L2
Z650-0.32	0 - 650	0 - 0.32	208	60	150	0.5	79 / 81	L2
Z650-0.64	0 - 650	0 - 0.64	416	60	150	0.6	84 / 86	L2
Z650-1	0 - 650	0 - 1	650	60	250	1	86.5 / 88.5	L2
Z650-1.25	0 - 650	0 - 1.25	812	60	250	1	87 / 89	L2

^{*} Note: Front panel output jacks fuse limited to 24A



Model		Z10	Z20	Z36	Z60	Z100
Load Regulation	CV	2m\	/ + 0.01% of rated	d voltage over 0 - 1	00% load change	
Line Regulation	CV	2mV + 0.01%	of rated voltage	over a 85 - 132 or	170 - 265VAC line	e change
Recovery Time (1)	CV		ū	1ms		
Temperature Coefficient	CV		30ppm/C fo	llowing 30 minute v	warm up	
Temperature Stability	CV	0.02% of r	* *	8 hours following	•	p time
Warm up Drift (2)	CV		-	tage + 2mV of rate		
Load Regulation	CC			d current over 0 - 10		
Load Regulation thermal drift	CC			ent over 30 minutes	-	
Line Regulation	CC			over a 85 - 132 or	-	
Temperature Coefficient	CC			urrent after 30 minu		, o.i.a.i.go
Temperature Stability	CC			8 hours following		n time
Warm up Drift (2)	CC	0.0070 011		.1% of rated currer		p unio
Vout & lout programming & readback resolution	Digitally			of rated voltage/cu		
Vout & lout programming & readback resolution Vout & lout programming & readback accuracy	Digitally			voltage, < 0.1% of		
Voltage & Current Programming	Analog			or 0-10V) or Resist		Ok)
Voltage & Current Monitoring	Analog	•		e (user selectable)		OK)
Overvoltage Shutdown (user programmable)	V	0.5 - 12	1 - 24	2 - 40	5 - 66	5 - 110
Overtemperature Protection	V	0.5 - 12		ble - latched or nor		5-110
•	-	A diait		of rated voltage or	•	nt
Display - Voltage Remote On/Off	-	•	•	ry contact relay (us		
	-	Бу ар	plied voltage of d		ser selectable logi	C)
Output Good	-	4	4	Low on fail	2	F
Remote Sense Compensation (per wire)	V	7	1	2	3	5
Communication Interface	-	RS232,		andard, IEEE488 (onai
Series Operation	-		•	cal units (with exte		
Parallel Operation	-		•	in master-slave co	infiguration	
Input Voltage / Frequency (3)	VAC		85-	265VAC, 47-63Hz		
Inrush Current	A			< 30A		
Hold Up Time (Typical)	ms			16ms		
Power Factor Correction	-		Complies with E	EN61000-3-2 Class	A (0.99 typ)	
Operating Temperature	°C			0 - 50°C		
Storage Temperature	°C			-20 to +85°C		
Humidity (non condensing)	%RH			90%RH, Storage 1	10 - 95%RH	
Cooling	-			ariable speed fan		
Withstand Voltage	VAC	I/P to GN		O/P 3kVAC, O/P to		min
Insulation Resistance	Ω		>100N	IΩ at 25°C & 70%F	RH	
Vibration (non operating)	-			IEC60068-2-64		
Shock	G		<20G, half s	ine, 11ms. IEC600	068-2-27	
Safety Agency Certifications	-	UL61010-1	, EN61010-1, IEC	C61010 (Designed	to meet UL/EN60	950-1)
Immunity	-			IEC61326		
Conducted Emission	-	IEC/EN	l61326-1 Industri	al Location - B, FC	C part 15-B, VCC	I-B
Radiated Emission	-	IEC/EN	N61326-1 Industri	al Location - A, FC	C part 15-A, VCC	I-A
Size (H x W x D) (Excluding handles and busbars)	mm			350mm; Wide Boo	•	
, , , ,			•	andard body 1.9kg,	•	
Weight	kg			andard body 2.1kg,		
Warranty	yrs			5	, , =	,

Notes

- (1) Recovery to within 0.5% of rated voltage after a load change of 10-90% (Output current 10-100% of Imax)
- (2) During 30 minute warm up time after power on

See www.emea.tdk-lambda.com/zplus for further information



Specification					
Model		Z160 Z320 Z650			
Load Regulation	CV	0.01% of rated voltage over 0 - 100% load change			
Line Regulation	CV	0.01% of rated voltage over 0 - 100% input change			
Recovery Time (1)	CV	2ms			
Temperature Coefficient	CV	30ppm/°C following 30 minute warm up			
Temperature Stability	CV	0.02% of rated voltage over 8 hours following 30 minute warm up time			
Warm up Drift (2)	CV	<0.05% of rated voltage of rated output voltage			
Load Regulation	CC	0.09% of rated current over 0 - 100% Vout change			
Load Regulation thermal drift	CC	< 0.05% of rated current over 30 minutes after load change			
Line Regulation	CC	<0.02% of rated current over a 85 - 132 or 170 - 265VAC line change			
Temperature Coefficient	CC	100ppm/°C of rated current after 30 minute warm up time			
Temperature Stability	CC	0.05% of rated current over 8 hours following 30 minute warm up time			
Warm up Drift(2)	CC	<±0.1% of rated current			
Vout & lout programming & readback resolution	Digitally	< 0.012% of rated voltage/current			
Vout & lout programming & readback accuracy	Digitally	0.05% of rated voltage + 0.05% of actual, 0.2% of rated current			
Voltage & Current Programming	Analog	By either Voltage (0-5V or 0-10V) or Resistance (0-5k or 0-10k)			
Voltage & Current Monitoring	Analog	0-5V or 0-10V Voltage (user selectable), ±1% accuracy			
Overvoltage Shutdown (user programmable)	V	5 - 176 5 - 353 5 - 717			
Overtemperature Protection	-	User selectable - latched or non-latching			
Display - Voltage	-	4 digits. Accuracy 0.5% of rated voltage or current ± 1 count			
Remote On/Off	-	By applied voltage or dry contact relay (user selectable logic)			
Output Good	-	Low on fail			
Remote Sense Compensation (per wire)	V	5 5 5			
Communication Interface	-	RS232, RS485 & USB standard, IEEE488 (GPIB) & LAN optional			
Series Operation	-	Up to two identical units (with external diodes)			
Parallel Operation	-	Up to six units in master-slave configuration			
Input Voltage / Frequency	-	85-265VAC, 47-63Hz			
Inrush Current	-	< 30A			
Hold Up Time (Typical)	ms	16ms			
Power Factor Correction	-	Complies with EN61000-3-2 Class A (0.99 typ)			
Operating Temperature	°C	0 - 50°C			
Storage Temperature	°C	-20 to +85°C			
Humidity (non condensing)	%RH	Operating: 20 - 90%RH, Storage 10 - 95%RH			
Cooling	-	Variable speed fan			
Withstand Voltage	-	I/P to GND 2kVAC, I/P to O/P 3kVAC, O/P to GND 1380VDC 1 min			
Insulation Resistance	-	>100M at 25°C & 70%RH			
Vibration (non operating)	-	IEC60068-2-64			
Shock	-	<20G, half sine, 11ms. IEC60068-2-27			
Safety Agency Certifications	-	UL61010-1, EN61010-1, IEC61010 (Designed to meet UL/EN60950-1)			
Immunity	-	IEC61326			
Conducted EMI	-	IEC/EN61326-1 Industrial location B, FCC part 15-B, VCCI-B			
Radiated EMI	-	IEC/EN61326-1 Industrial location A, FCC part 15-A, VCCI-A			
Size (H x W x D) (Excluding handles and busbars)	mm	Standard body 83 x 70 x 350mm; Wide Body 83 x 105 x 350mm			
Weight	kg	200W & 400W Standard body 1.9kg; Wide Body 2.4kg			
Warranty	yrs	5			

Notes:

- (1) Recovery to within 0.5% of rated voltage after a load change of 10-90% (Output current 10-100% of Imax)
- 2) Over 30 minute warm up time after power on

See www.emea.tdk-lambda.com/zplus for further information



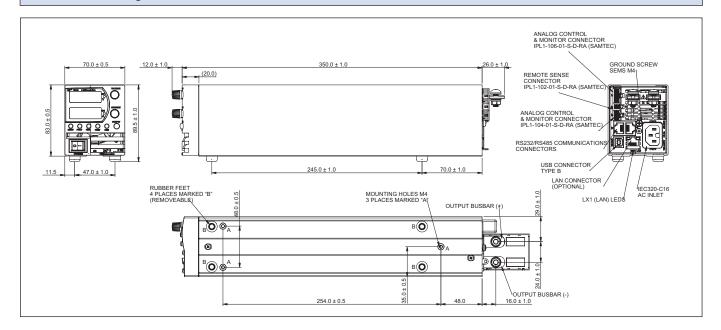
Factory Installed Options	
	Option Code
For models up to 60V only: Front panel output jacks (binding post style ø 4mm) ¹	-L
For all models: ² Front panel insulated output sockets (ø 4mm) ¹	-L2
Only one of the options below can be included: GPIB Interface ¹ Voltage Programming Isolated Analog Interface ¹ Current Programming Isolated Analog Interface ¹ LAN Interface (Complies with "LXI" Class C)	-IEEE -IS510 -IS420 -LAN

^{1:}Requires wide body (105mm) case style 2:Front panel output jacks fuse limited to 24A

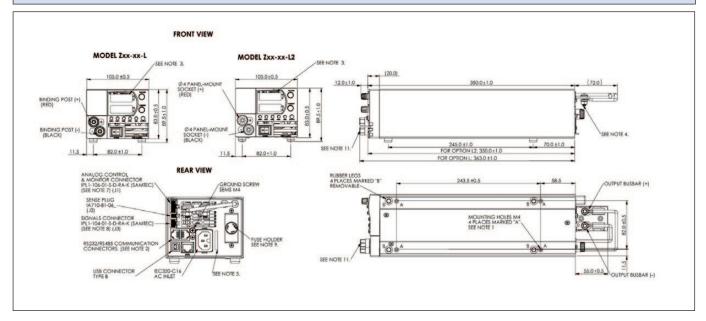
Part Number Examples
Z10-20-LAN-L Z650-0.64

Accessories	
	Part Number
19" Rack Housing (Accepts four 105mm width units or six 70mm width units) 70mm Blanking Panel For 19" Rack	Z-NL100 Z-BP
105mm Blanking Panel For 19" Rack	Z-WBP
Dual/Triple Housing (Accepts two 105mm case units or three 70mm case units)	Z-NL200
Serial Link Cable (One is included with each power supply)	Z-RJ45
Communication Cable RS485	Z-485-9
Communication Cable RS232	Z-232-9
British AC Cord	Z-GB
European AC Cord	Z-E

Z+ Outline Drawing

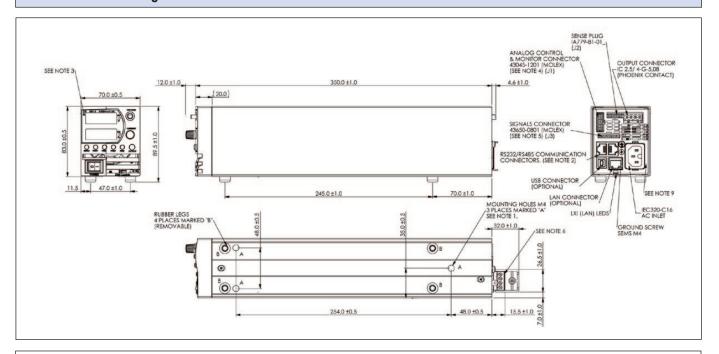


Z+ with L or L2 Option Outline Drawing



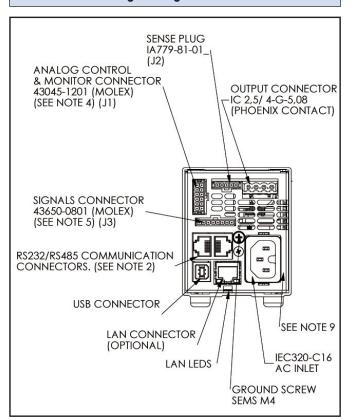


Z+ HV Outline Drawing

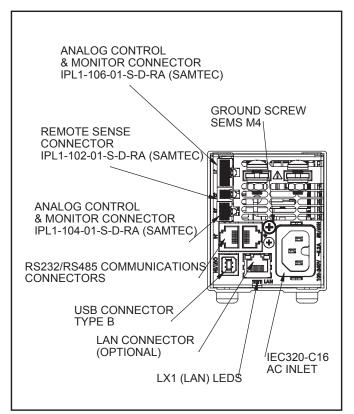


See Longform Datasheet for rack & wide body dimensions www.emea.tdk-lambda.com/zplus

Z+ Connections high voltage models 160V and above



Z+ Connections low voltage models up to 100V





- Constant Voltage / Constant Current
- Last Setting Memory
- Digital Meters
- Built-in RS232 & RS485
- Bench or Rack Mount
- Embedded Microprocessor Controller
- Voltage up to 120V, Current up to 132A

ZUP Series

Zero Up Programmable Power Supplies

MODELS		ZUP6	ZUP10	ZUP20	ZUP36	ZUP60	ZUP80	ZUP120
ITEMS	Cond.							
Load Regulation	CV	2mV + 0.005% over 0 - 100% load change						
Line Regulation	CV		1mV +	0.005% over 8	5 - 132 or 170 - 2	265VAC constan	it load	
Recovery Time (1)	CV	1ms	0.5ms			0.2ms		
Temperature Coefficient	CV			30ppm/°C fo	ollowing 30 minu	te warm up		
Temperature Drift (2)	CV			0.01% -	+ 2mV change in	output		
Up programming response time	CV			50 - 60ms			80ms	120ms
Down prog. resp. time (CV)	Full			50m	s (70ms ZUP60-	-14)	'	
Down prog. resp. time (CV)	Zero	250ms	350ms	400ms	500ms	750ms	800ms	1000ms
Load Regulation	CC		0.01% + 5mA	on 200W and 40	00W models, 0.0	7% + 10mA on 8	800W models	
Line Regulation	CC				00W models, 0.0			
Temperature Coefficient	CC				current after 30			
Temperature Drift (2)	CC				00W models, 0.0			
Prog Voltage resolution	-				n 0.028% of rate			
Prog Voltage accuracy	-	.02%+5mV.	.02%+8mV.		.02%+20mV	.02%+35mV	.02%+50mV	.02%+80mV
Prog Current resolution	-				n 0.03% of rate	1	1	
Prog Current accuracy	- 1				0.4% + 40mA			
Overvoltage Shutdown	V	0 - 7.5	0 - 13	0 - 24	0 - 40	0 - 66	0 - 88	0 - 132
Thermal Protection	-			Over t	emperature prot	ected	I	
Display - Voltage	-	3 digits (6, 20, 36, 60, 80V models), 3.5 digits (10, 120V models). Accuracy 0.2% ± 2 digits						
Display - Current	- 1		3 dig	its, (3.5 digits 13	32A model). Accu	racy 0.5% ± 3 c	ligits	
Display - Status	-	CV / CC, Alarm, Foldback, Local/Remote, On/Off						
Remote On/Off	- 1	TTL signal or dry contact relay						
Output Good	-	Open Collector						
Voltage & Current Programming	- 1	By either Voltage (0-4V) or Resistance (0-4k)						
Remote Sense	-	Up to 0.5V compensation per output cable						
Communication Interface	-	RS232 & RS485 standard						
Series & Parallel Operation	-		Series: Up to to	wo units; Paralle	l: Up to five units	s in master-slave	e configuration	
AC Input Voltage range	-			85-	265VAC (47-63F	łz)		
Inrush Current (100/200VAC) (3)	-	15/30A, 200W models, 15A, 400W models, 30A, 800W models						
Hold Up Time (Typ) at 100VAC	ms	20						
Power Factor Correction	-	Complies with EN61000-3 Class A (0.99 typ)						
Temperature Range	-	Operating: 0°C - 50°C; Storage: -20°C to +70°C						
Humidity (non condensing)	-	Operating: 30°C - 90% RH, Storage 10°C - 95%RH						
Cooling	-	Internal fan						
Withstand Voltage	-	Input to Ground 2kVAC, Input to Output 3kVAC, Output to Ground 500VAC for 1 min.						
Isolation Resistance	Ω	>100MΩ at 25°C & 70%RH						
Vibration & Shock (non-op.)	-	Vil	oration:10-55Hz(1 min.) 2G cons	tant X, Y, Z, whe	n correctly mour	nted; Shock: <20	G
Safety Agency Approvals	-	UL3111-1, EN61010-1, CE Mark						
Conducted & Radiated EMI	-	EN55022-B conducted, A radiated, FCC Class B conducted,						
				A radiated, V	CCI-B conducted	d, -A radiated		
Warranty	yrs				3			

(1) Recovery to within +/-50mV after load change of 50-100% (2) Over 8 hour period following 30 minute warm up time (3) 25°C ambient (cold start)

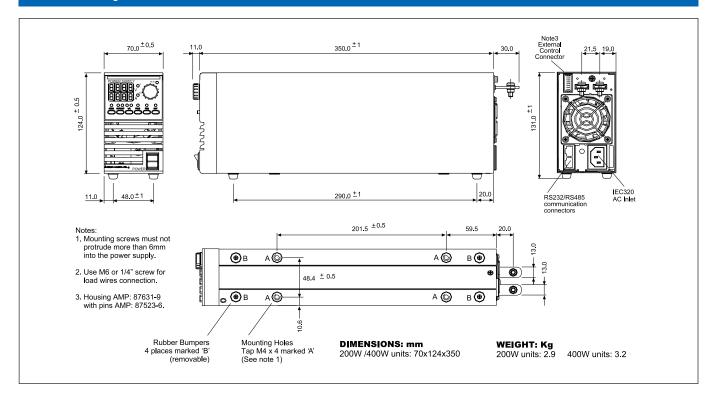


TDK-Lambda

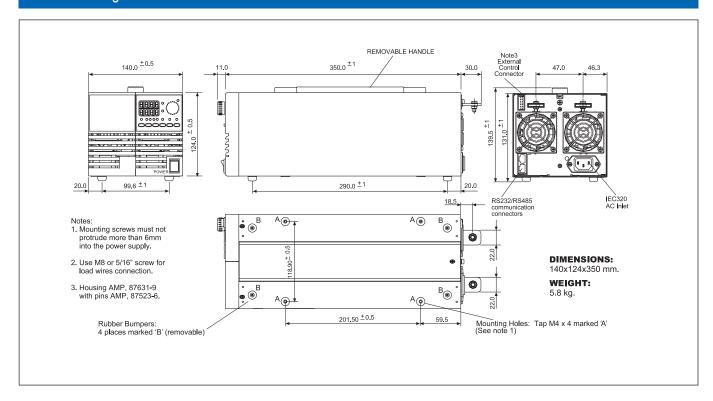
Model Select	tor							
Model	Voltage Adjust Range	Current Adjust Range	Max Power	Ripple 5Hz-1MHz mV	Noise 20MHz BW mV	Ripple 5Hz-1MHz mA	Efficiency % (100/200VAC)	Weight kg
ZUP6-33	0-6V	0-33	198	5	50	50	69 / 72	2.9
ZUP6-66	0-6V	0-66	396	5	50	100	74 / 77	3.2
ZUP6-132	0-6V	0-132	792	8	100	200	74 / 77	5.8
ZUP10-20	0-10	0-20	200	5	50	25	73 / 77	2.9
ZUP10-40	0-10	0-40	400	5	50	50	79 / 82	3.2
ZUP10-80	0-10	0-80	800	8	90	100	77 / 81	5.8
ZUP20-10	0-20	0-10	200	5	50	15	74 / 78	2.9
ZUP20-20	0-20	0-20	400	5	50	30	79 / 83	3.2
ZUP20-40	0-20	0-40	800	5	80	60	79 / 82	5.8
ZUP36-6	0-36	0-6	216	5	50	7.5	76 / 80	2.9
ZUP36-12	0-36	0-12	432	5	50	15	80 / 84	3.2
ZUP36-24	0-36	0-24	864	5	70	30	80 / 84	5.8
ZUP60-3.5	0-60	0-3.5	210	5	50	5	75 / 79	2.9
ZUP60-7	0-60	0-7	420	5	50	10	80 / 84	3.2
ZUP60-14	0-60	0-14	840	5	60	20	80 / 84	5.8
ZUP80-2.5	0-80	0-2.5	200	20	70	5	78 / 82	2.9
ZUP80-5	0-80	0-5	400	20	70	10	83 / 87	3.2
ZUP120-1.8	0-120	0-1.8	216	20	80	5	78 / 82	2.9
ZUP120-3.6	0-120	0-3.6	432	20	80	10	82 / 86	3.2

Options and Accessories	Martal Coffin	Don't November
Option	Model Suffix	Part Number
Front panel terminals (20A max) ⁵	/L ⁴	ZUP200/400/L4
Front panel terminals (20A max) ⁶	/L ⁴	ZUP800/L ⁴
IEC320 cable Europe plug	/E	ZUP/E
Serial link cable RJ-45	/W	ZUP/W
Dual Unit Assembly		NL200*
(accepts 200W or 400W models)		
19" 3U rack (accepts up to 6 200/400W models)	NL100*	
Blanking panels for NL100 (19 in. rack)	NL101*	
RS232 Communications Cable DB-9F	ZUP/NC401	
RS232 Communications Cable DB-25F	ZUP/NC403	
RS485 Communications Cable DB-9F	ZUP/NC402	
RS485 Communications Cable DB-25F	ZUP/NC404	
User Manual		NL102
* (See website for more details)		
4 Not available with ZUP80 or ZUP120 models.		
⁵ 200W and 400W models		
6 800W models		

Outline Drawing 200/400W



Outline Drawing 800W







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