Identical User Interfaces

New 15kW Models: 30V, 40V and 50V (400VAC/480VAC)

Genesys™

Programmable DC Power Supplies
10kW/15kW in 3U
Built in RS-232 & RS-485 Interface
Advanced Parallel Operation

Optional Interfaces:
LXI Compliant LAN
GPIB (IEEE 488.2 & SCPI Compliant)
Isolated Analog Program/Monitor

Genesys™ Family

GEN H	750W Half-Rack
GEN 1U	750W/1500W/2400W Full-Rack
GEN 2U	3.3kW/5kW
GEN 3U	10kW/15kW

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 3U package**
- **High Output Current up to 1000ADC**
- **Wide Range of popular worldwide 3Φ AC inputs, (208VAC, 400VAC, 480VAC)**
- **Power Factor 0.88 (Passive PFC on all AC Inputs)**
- **Output Voltage up to 600V; Output Current up to 1000A**
- **Built-in RS-232/RS-485 Interface Standard**
- **Last Setting Memory; Front Panel Lockout**
- **"Advanced Parallel" configuration reports total system current (up to four identical units)**
- **Global Commands for Serial RS-232/RS-485 Interface**
- Continuous Encoders for Voltage and Current Adjustment
- Independent Remote ON/OFF and Remote ENABLE/DISABLE
- Reliable Modular and SMT Design
- 19" Rack Mounted for ATE and OEM Applications, zero-stack
- Optional Interfaces
  - LXI Compliant LAN (Class C)
  - GPIB (IEEE 488.2 & SCPI Compliant) w/ Multi-Drop capability
  - Isolated Analog Programming and Monitoring Interface (0-5V/0-10V & 4-20mA)
- LabView™ and LabWindows™ Software Drivers
- Worldwide Safety Agency Approvals; UL Recognized and CE Mark for LVD and EMC Regulation (208VAC and 400VAC Input and select 480VAC models)
- Five Year Warranty

Applications

Genesys™ 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. Then up to 30 Slave units may be used with the standard RS-485 Multi-Drop 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 RS-485 interface as well as the 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.

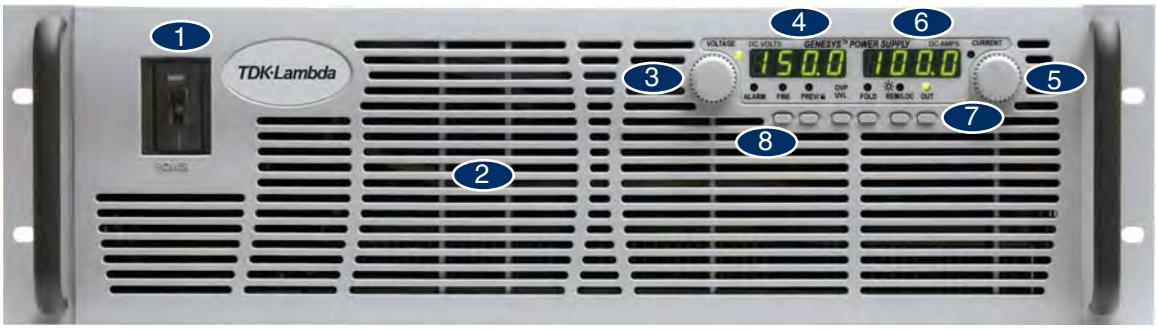
Aerospace & Satellite Testing systems use the complete Genesys™ Family: **1U**-750W Half-Rack, **1U**-750W/1.5kW/2.4kW Full-Rack, **2U**-3.3kW/5kW Full-Rack and **3U**-10kW/15kW Full-Rack. All are identical in Front Panel, Rear Panel Analog and Digital Interface Commands. A wide variety of Outputs (voltage 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.

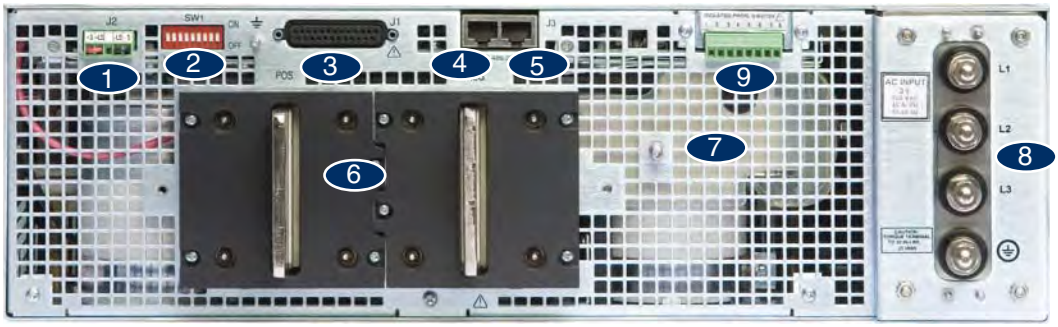
Semiconductor Processing & Burn-in equipment designers appreciate the wide variety of worldwide AC Inputs and Outputs from which to select, depending on application. Selectable Safe and Auto Re-start protects loads and process integrity. Typical applications include Magnets, Filaments and Heaters.

Front Panel Description



1. AC ON/OFF Switch
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.
   - Parallel Master/Slave (Basic and Advanced).
   - Set OVP and UVL Limits.
   - Set Current Foldback Protection.
   - Go to Local Mode and select Address and Baud rate.
   - Output ON/OFF and Safe-Start/Auto 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 Remote 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 Connections: Rugged 2 hole busbars (shown) for models < 30V Output, single hole busbars for 30V to 300V Output, threaded stud terminals models > 300V Output.
7. Exit air assures reliable operation when zero stacked.
8. Input Terminals L1, L2, L3 and Ground (threaded studs).
9. Optional Interface Position for LAN (LXI Class C), GPIB (IEEE 488.2 & SCPI) or Isolated Analog Interface.

LAN Interface complies with LXI Class C Specification

Genesys™ 3U 10kW/15kW Specifications

1.0 MODEL	GEN	7.5-1000	10-1000	12.5-800	20-500	25-400	30-333	40-250	50-200	60-167	80-125	100-100	10kW	15kW
1.Rated Output Voltage	VDC	7.5	10	12.5	20	25	30	40	50	60	80	100	X	
2.Rated Output Current	ADC	1000	1000	800	500	400	333	250	200	167	125	100	X	
3.Rated Output Power	kW	7.5	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	X	
4.Efficiency (min) at low line, 100% Rated Load	%	77	83										X	

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		
1.Rated Output Voltage*	VDC	---	---	---	---	---	30*	40*	50*	60	80	100		X
2.Rated Output Current	ADC	---	---	---	---	---	500	375	300	250	187.5	150		X
3.Rated Output Power	kW	---	---	---	---	---	15.0	15.0	15.0	15.0	15.0	15.0		X
4.Efficiency (min) at low line, 100% Rated Load	%	---					88							X
1.1 CONSTANT VOLTAGE MODE (CV)	Contact Factory for other models													
1. Max. Line Reg (0.1% - Vor ≤ 30V; 0.01% - Vor > 30V)	mV	7.5	10	12.5	20	25	30	4	5	6	8	10	X	X
2. Max. Load Reg (0.1% - Vor ≤ 30V; 0.02% - Vor > 30V)	mV	7.5	10	12.5	20	25	30	8	10	12	16	20	X	X
3. Ripple r.m.s, 5Hz~1MHz, CV (*1)	mV	20	20	20	20	20	20	20	20	20	25	25	X	X
4. Output Noise p-p, (20MHz), CV (*1)	mV	60	60	60	60	60	60	60	75	75	100	100	X	X
5.Remote Sense Compensation / Wire	V	1	1	1	1	1	1.5	2	3	3	4	5	X	X
6. Temperature Stability	---	± 0.05% of Vo(rated) over 8 hours after 30 minute warm up (constant Line, Load & Temperature)											X	X
7. Temperature Coefficient	ppm / °C	± 200 (± 0.02% of Vo(rated) / °C)											X	X
8. Up-Prog. Response Time, 0 ~ Vomax, full-load	ms	100											X	X
9. Up-Prog. Response Time, 0~Vomax, no load	ms	50											X	X
10. Transient Response Time (CV mode) (*2)	ms	Less than 3											X	X
1.2 CONSTANT CURRENT MODE (CC)														
1. Max. Line Reg. (0.1% - Ior ≥ 333A;0.050% - Ior < 333A)	mA	1000	1000	800	500	400	333	125	100	83.5	62.5	50	X	
2. Max. Load Reg. (0.1% - Ior ≥ 333A; 0.075% - Ior < 333A)	mA	1000	1000	800	500	400	333	188	150	125	94	75	X	
1. Max. Line Reg. (0.1% - Ior ≥ 333A; 0.050% - Ior < 333A)	mA	---	---	---	---	---	500	375	334	125	94	75		X
2. Max. Load Reg. (0.1% - Ior ≥ 333A; 0.075% - Ior < 333A)	mA	---	---	---	---	---	500	375	334	188	141	113		X
3. Ripple r.m.s, 5Hz~1MHz, CC	mA	5300	4000	2560	1000	640	444	250	160	67	50	40	X	
3. Ripple r.m.s, 5Hz~1MHz, CC	mA	---	---	---	---	---	350	200	150	100	100	100		X
4. Temperature Stability	---	± 0.05% of Io(rated)over 8 hours after 30 minute warm up (constant Line, Load & Temperature)											X	X
5. Temperature Coefficient	ppm/°C	± 300 (± 0.03% of Io(rated) / °C)											X	X

1.3 PROTECTIVE FUNCTIONS				
1. OCP	%	0 ~ 100	X	X
2. OCP type	---	Constant current	X	X
3. Foldback Protection	---	Output shutdown; Manual reset by front panel OUT button or digital communication, user-selectable	X	X
4. Foldback Response Time	s	Less than 1 (Min =0.25 / Max = 25 / Default = 0.25); Settable via "FBD" command	X	X
5. OVP type	---	Inverter shut-down; Manual reset by AC On/Off recycle, OUT button, Remote Analog or DIgital comm.	X	X
6. OVP Programming Accuracy	%	± 5% of Vo(rated)	X	X
7. OVP Trip Point	V	5% to 105% of Vo(rated). Shall always be greater than 105% of Vout(setting). Default = 105% of Vo(rated)	X	X
8. OVP Response Time	ms	Less than 10 (for Output voltage to begin to drop)	X	X
9. Max. OVP Reset Time	s	7 (from AC On/Off switch turn On)	X	X
10. Over-temperature Protection	---	Shut down if internal temperature exceeds safe operating levels (Latched: Safe / Unlatched: Auto)	X	X
11. Phase-Loss Protection	---	Yes, power supply shutdown (Latched: Safe-mode / Unlatched: Auto-mode)	X	X

1.4 REMOTE ANALOG CONTROLS & SIGNALS			
1. Vout Voltage Programming	0~100%, 0 ~ 5V or 0 ~ 10V, user-selectable., Accuracy & Linearity: ±1% of Vo(rated)	X	X
2. Iout Voltage Programming	0~100%, 0 ~ 5V or 0 ~ 10V, user-selectable, Accuracy & Linearity: ± 1% of Io(rated)	X	X
3. Vout Resistor Programming	0~100%, 0 ~ 5/10kohm full-scale, user-selectable, Accuracy & Linearity: ± 1% of Vo(rated)	X	X
4. Iout Resistor Programming	0~100%, 0 ~ 5/10kohm full-scale, user-selectable, Accuracy & Linearity: ± 1% of Io(rated)	X	X
5. Shut-Off (SO) Control (rear panel)	By Voltage: 0.6V = Disable, 2-15V = Enable (default) or Dry Contact: Open = EN, Short = DIS (user-selectable logic)	X	X
6. Output Current Monitor	0 ~ 5V or 0 ~ 10V, Accuracy: ± 1%, user-selectable	X	X
7. Output Voltage Monitor	0 ~ 5V or 0 ~ 10V, Accuracy: ± 1%, user-selectable	X	X
8. Power Supply OK (PS_OK) Signal	Yes. TTL High - OK, 0V - Fail (500ohm series impedance)	X	X
9. CV/CC Signal	CV: TTL High (4 ~ 5V), Max source current = 10mA; CC: TTL Low (0 ~ 0.4V), Max sink current = 10mA	X	X
10. Enable/Disable	Dry Contact; Open = Off, Short = On; Max. voltage across Enable/Disable contacts = 6V	X	X
11. Remote/Local Selection	Selects Remote or Local operation by Voltage: 0 ~ 0.6V = Local / 2 ~ 15V = Remote	X	X
12. Remote/Local Signal	Signals operating mode; Open collector: Local = Open (Max voltage = 30V), Remote = On (Max sink current = 10mA)	X	X

1.5 FRONT PANEL			
1.Control Functions	Vout/ Iout manual adjust by separate encoders (coarse and fine adjustment selectable)	X	X
	OVP/UVL manual adjust by Voltage Adjust encoder, Front Panel Lock/Unlock	X	X
	Address selection by Voltage Adjust encoder. # of addresses: 31	X	X
	AC On/Off, Output ON/OFF, Restart Modes (Auto/Safe), Foldback Control (CV to CC), Go-to-Local	X	X
	RS-232/RS-485 and IEEE (IEMD) selection by IEEE Enable DIP switch	X	X
	Baud rate selection: 1200, 2400, 4800, 9600 and 19,200 (by Current adjust encoder).	X	X
	Advanced Parallel Master/Slave: Hx = Master unit, where x = # of Slaves (0 to 4), S = Slave unit	X	X
2.Display	Voltage: 4 digits, Accuracy: ± 0.5% of Vo(rated) ±1 count	X	X
	Current: 4 digits, Accuracy: ± 0.5% of Io(rated) ±1 count	X	X
	Voltmeter displays Voltage at power supply (Local sense) or at load (Remote sense)	X	X
3.Indications	Green LED's: PREVIEW, FOLD, REM./LOCAL, OUT ON/OFF, CC/CV, FINE Red LED: ALRM (OVP, OTP, FOLD, AC FAIL, ENA, SO)	X	X

1.6 DIGITAL PROGRAMMING & READBACK			
1. Vout Programming Accuracy	± 0.5% of rated Output voltage	X	X
2. Iout Programming Accuracy	± 0.5% of rated Output current for units with Io < 187.5A; ± 0.7% of rated Output current for Io ≥187.5A	X	X
3. Vout Programming Resolution	0.02% of Vo(rated)	X	X
4. Iout Programming Resolution	0.04% of Io(rated)	X	X
5. Vout Readback Accuracy	± (0.1% of Vo(actual) + 0.2% of Vo(rated))	X	X
6. Iout Readback Accuracy	± (0.1% of Io(actual) + 0.4% of Io(rated))	X	X
7. Vout Readback Resolution	0.02% of Vo(rated)	X	X
8. Iout Readback Resolution	0.02% of Io(rated)	X	X
9. OV Response Time	20ms maximum (between Vout exceeding IEEE Limit and supply inhibit turning On)	X	X
10. Other Functions	Set OVP/UVL limits, Set Local/Remote, Operating parameters and status, Get Identity, etc.	X	X

*30V, 40V and 50V models (15kW) only available with 400VAC and 480VAC. For 208VAC Input models please conact the factory.
*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 Io(rated).

All specifications subject to change without notice.

Genesys™ 3U 10kW/15kW Specifications

1.0 MODEL	GEN	125-80	150-66	200-50	250-40	300-33	400-25	500-20	600-17	10kW	15kW
1.Rated Output Voltage	VDC	125	150	200	250	300	400	500	600	X	
2.Rated Output Current	ADC	80	66	50	40	33	25	20	17	X	
3.Rated Output Power	kW	10.0	9.9	10.0	10.0	9.9	10.0	10.0	10.2	X	
4.Efficiency (min) at low line, 100% Rated Load	%	83								X	

1.0 MODEL	GEN	125-120	150-100	200-75	250-60	300-50	400-37.5	500-30	600-25		15kW
1.Rated Output Voltage	VDC	125	150	200	250	300	400	500	600		X
2.Rated Output Current	ADC	120	100	75	60	50	37.5	30	25		X
3.Rated Output Power	kW	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0		X
4.Efficiency (min) at low line, 100% Rated Load	%	88									X
1.1 CONSTANT VOLTAGE MODE (CV)	Contact Factory for other models										
1. Max. Line Reg (0.1% - Vor ≤ 30V; 0.01% - Vor > 30V)	mV	12.5	15	20	25	30	40	50	60	X	X
2. Max. Load Reg (0.1% - Vor ≤ 30V; 0.02% - Vor > 30V)	mV	25	30	40	50	60	80	100	120	X	X
3. Ripple r.m.s, 5Hz~1MHz, CV (*1)	mV	25	25	35	35	60	60	60	60	X	X
4. Output Noise p-p (20MHz), CV (*1)	mV	125	150	175	200	200	300	350	350	X	X
5.Remote Sense Compensation / Wire	V	5	5	5	5	5	5	5	5	X	X
6. Temperature Stability	---	± 0.05% of Vo(rated) over 8 hours after 30 minute warm up (constant Line, Load & Temperature)								X	X
7. Temperature Coefficient	ppm / °C	± 200 (± 0.02% of Vo(rated) / °C)								X	X
8. Up-Prog. Response Time, 0~Vomax, full-load	ms	100								X	X
9. Up-Prog. Response Time, 0~Vomax, no load	ms	50								X	X
10. Transient Response Time (CV mode) (*2)	ms	Less than 3								X	X
1.2 CONSTANT CURRENT MODE (CC)											
1. Max. Line Reg (0.1% - Ior ≥ 333A; 0.05% - Ior < 333A)	mA	40	33	25	20	17	13	10	9	X	
2. Max. Load Reg (0.1% - Ior ≥ 333A; 0.075% - Io < 333A)	mA	60	50	38	30	25	19	15	13	X	
1. Max. Line Reg (0.1% - Ior ≥ 333A; 0.050% - Ior < 333A)	mA	60	50	38	30	25	19	15	13		X
2. Max. Load Reg (0.1% - Ior ≥ 333A; 0.075% - Ior <333A)	mA	90	75	56	45	38	28	23	19		X
3. Ripple r.m.s, 5Hz~1MHz, CC	mA	32	26	20	16	13	10	8	7	X	
3. Ripple r.m.s, 5Hz~1MHz, CC	mA	50	50	20	20	20	10	10	10		X
4. Temperature Stability	---	± 0.05% of Io(rated o)ver 8 hours after 30 minute warm up (constant Line, Load & Temperature)								X	X
5. Temperature Coefficient	ppm / °C	± 300 (± 0.03% of Io(rated) / °C)								X	X

1.3 PROTECTIVE FUNCTIONS				
1. OCP	%	0 ~ 100	X	X
2. OCP type	---	Constant current	X	X
3. Foldback Protection	---	Output shut down; Manual reset by front panel OUT button or digital communication, user-selectable	X	X
4. Foldback Response Time	s	Less than 1 (Min = 0.25 / Max = 25 / Default = 0.25); Settable via “FBD” command	X	X
5. OVP type	---	Inverter shut-down; Manual reset by AC On/Off recycle, OUT button, Remote Analog or Digital comm.	X	X
6. OVP Programming Accuracy	%	± 5% of Vo(rated)	X	X
7. OVP Trip Point	V	5% to 105% of Vo(rated). Shall always be greater than 105% of Vout(setting). Default = 105% of Vo(rated)	X	X
8. OVP response time	ms	Less than 10 (for Output voltage to begin to drop)	X	X
9. Max. OVP reset time	s	7 (from AC On/Off switch turn On)	X	X
10. Over temperature Protection	---	Shut down if internal temp. exceeds safe operating levels. (Latched: Safe / Unlatched: Auto)	X	X
11. Phase Loss Protection	---	Yes, power supply shutdown (Latched: Safe-mode / Unlatched: Auto-mode)	X	X

1.4 REMOTE ANALOG CONTROLS & SIGNALS			
1. Vout Voltage Programming	0~100%, 0 ~ 5V or 0 ~ 10V, user-selectable, Accuracy & Linearity: ± 1% of Vo(rated)	X	X
2. Iout Voltage Programming	0 ~ 100%, 0~5V or 0 ~ 10V, user-selectable. Accuracy & Linearity ± 1% of Io(rated)	X	X
3. Vout resistor programming	0~100%, 0~5/10kohm full-scale, user-selectable. Accuracy & Linearity ± 1% of Vo(rated)	X	X
4. Iout Resistor Programming	0~100%, 0~5/10kohm full-scale, user-selectable. Accuracy & Linearity ± 1% of Io(rated)	X	X
5. Shut-Off (SO) Control (rear panel)	By Voltage: 0.6V = Disable, 2-15V = Enable (default) or Dry Contact: Open = EN, Short= DIS (user-selectable logic)	X	X
6. Output Current Monitor	0 ~ 5V or 0 ~ 10V, Accuracy: ± 1%, user-selectable	X	X
7. Output Voltage Monitor	0 ~ 5V or 0 ~ 10V, Accuracy: ± 1%, user-selectable	X	X
8. Power Supply OK (PS_OK) Signal	Yes. TTL High - OK, 0V - Fail (500ohm series impedance)	X	X
9. CV/CC Signal	CV: TTL High (4 ~ 5V), Max source current = 10mA, CC: TTL Low (0 ~ 0.4V), Max sink current: = 10mA.	X	X
10. Enable/Disable	Dry Contact; Open = Off, Short = On; Max. voltage across Enable/Disable contacts = 6V	X	X
11. Remote/Local Selection	Selects Remote or Local operation by Voltage: 0 ~ 0.6V = Local / 2 ~ 15V = Remote	X	X
12. Remote/Local Signal	Signals operating mode: Open collector: Local = Open (Max voltage = 30V), Remote = On (Max sink current = 10mA)	X	X

1.5 FRONT PANEL			
1.Control Functions	Vout/ Iout manual adjust by separate encoders (coarse and fine adjustment selectable)	X	X
	OVP/UVL manual adjust by Voltage Adjust encoder, Front Panel Lock/Unlock	X	X
	Address selection by Voltage Adjust encoder. # of addresses: 31	X	X
	AC On/Off, Output ON/OFF, Restart Modes (Auto/Safe), Foldback Control (CV to CC), Go-to-Local	X	X
	RS-232/RS-485 and IEEE (IEMD) selection by IEEE Enable DIP switch	X	X
	Baud rate selection: 1200, 2400, 4800, 9600 and 19,200 (by Current adjust encoder).	X	X
	Advanced Parallel Master Slave: Hx = Master unit, where x = # of slaves (0 to 4), S = Slave unit	X	X
2.Display	Voltage: 4 digits, Accuracy: ± 0.5% of Vo(rated) ±1 count	X	X
	Current: 4 digits, Accuracy: ± 0.5% of Io(rated) ±1 count	X	X
	Voltmeter displays Voltage at power supply (Local sense) or at load (Remote sense).	X	X
3.Indications	Green LED's: PREVIEW, FOLD, REM./LOCAL, OUT ON/OFF, CC/CV, FINE Red LED: ALRM (OVP, OTP, FOLD, AC FAIL, ENA, SO)	X	X

1.6 DIGITAL PROGRAMMING & READBACK			
1. Vout Programming Accuracy	± 0.5% of rated Output Voltage	X	X
2. Iout Programming Accuracy	± 0.5% of rated Output current for units with Io < 187.5A; ± 0.7% of rated Output current for Io ≥187.5A	X	X
3. Vout Programming Resolution	0.02% of Vo(rated)	X	X
4. Iout Programming Resolution	0.04% of Io(rated)	X	X
5. Vout Readback Accuracy	± (0.1% of Vo(actual) + 0.2% of Vo(rated))	X	X
6. Iout Readback Accuracy	± (0.1% of Vo(actual) + 0.4% of Io(rated))	X	X
7. Vout Readback Resolution	0.02% of Vo(rated)	X	X
8. Iout Readback Resolution	0.02% of Io(rated)	X	X
9. OV Response Time	20ms maximum (between Vout exceeding IEE Limit and supply inhibit turning On)	X	X
10. Other Functions	Set Over-Voltage Limit, Set Local/Remote, Operating parameters and status, Get Identity, etc.	X	X

*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 Io(rated).

All specifications subject to change without notice.

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

2.1 INPUT CHARACTERISTICS		
1. Input Voltage / Frequency (range)	---	208VAC (180-253), 400VAC (360-440, 342-440 (15kW-30V-50V models), 480VAC (432-528); 47-63Hz (all)
2. No. of phases	---	3-Phase (Wye or Delta) 4 wire total (3-Phase and 1 protective Earth ground)
3. Dropout Voltage	V	180 / 360, 342 (15kW-30V-50V models) / 432
4. Input Current (180VAC / 360VAC / 432VAC)	Arms	10kW - 45 / 23 / 20; 15kW - 64 / 32 / 27; All at full rated Output power
5. Inrush Current	A	Not to exceed full rated Input current (see para. above)
6. Power Factor	---	0.88 Passive (typical)
7. Leakage Current	mA	3.5 (EN60950) max.
8. Input Protection	---	208VAC: circuit breaker; 400VAC, 480VAC - line fuse
9. Input Overvoltage Protection		Unit shall not be damaged by line overvoltage of 120% nominal AC input vltage with maximum duration of 100usec.
10. Phase Imbalance	%	≤ 5% on Three-Phase Input

2.2 POWER SUPPLY CONFIGURATION	
1. Parallel Operation	Up to four (4) identical units may be connected in Master/Slave Mode with single wire connection (*3). In Advanced-Parallel mode, the current of Master unit multiplied by number of units connected in parallel is available via digital interface and displayed on the front panel of the Master unit. Remote Analog current monitor of the Master is scaled to the Output current of the Master unit (only).
2. Series Operation	Possible (with external diodes); Up to two identical units with total Output voltage not to exceed ± 600V from Chassis ground.

2.3 ENVIRONMENTAL CONDITIONS	
1. Operating Temperature	0 ~ +50°C, 100% load
2. Storage Temperature	-20 ~ +70°C
3. Operating Humidity	20 ~ 80% RH (non-condensing)
4. Storage Humidity	10 ~ 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 7500 ft. (2500m), +45°C from 7501 to 10,000ft (2501m - 3000m), Non-Operating 40,000 ft (12,000m)
7. Audible Noise	65dBA at Io(rated) (measured 1m from front panel)

2.4 EMC (*4)	
1. 208VAC Input	**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)
4. Conducted Immunity	EN61000-4-6 (IEC 1000-4-6)
5. Radiated Immunity	EN61000-4-3 (IEC 1000-4-3)
6. 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 Input	**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)
4. Conducted Immunity	EN61000-4-6 (IEC 1000-4-6)
5. Radiated Immunity	EN61000-4-3 (IEC 1000-4-3)
6. Power Frequency Magnetic Field	EN61000-4-8
7. Voltage Dips, Short Interruptions and Voltage Variations Immunity Test (400VAC models Only).	IEC 61000-4-11
8. Conducted Emissions	EN55011A, FCC part 15J-A
9. Radiated Emissions	EN55011A, FCC part 15J-A

2.5 SAFETY	
1.Applicable Standards:	**UL/cUL 60950-1, EN60950-1 recognized, CB Scheme, CE Mark (208VAC & 400VAC Inputs only)** 7.5V ≤ Vout ≤ 400V: Output is Hazardous; LAN/IEEE/Isolated Analog are SELV 400V < Vout ≤ 600V: Output is Hazardous; LAN/IEEE/Isolated Analog are not SELV
2. Withstand Voltage	**Vout ≤ 300V models**: Input - Ground: 2900VDC for 1min, Input-Hazardous Output: 3500VDC for 1min, Input - SELV: 2900VDC for 1min Hazardous Output - SELV: 2121VDC for 1min, Hazardous Output - Ground: 2121VDC for 1min **300 < Vout ≤ 600V models**: Input-Ground: 2900VDC for 1min, Input-Hazardous Output: 3900Vdc for 1min, Input-SELV: 2900Vdc for 1min. Hazardous Output - SELV: 2688Vdc for 1min, Hazardous Output - Ground: 2688Vdc for 1min
3.Insulation Resistance	> 100Megohms at 500VDC, +25C

2.6 MECHANICAL CONSTRUCTION	
1. Cooling	Fan-driven (variable speed for 15kW, 30V-50V models), Airflow from front to rear. Supplemental vents on side shall not be blocked. EIA Rack mounting, stackable. "Zero Stackable" top and bottom. Chassis slides or suitable rear support required.
2. Dimensions (WxHxD)	Width: 429mm / 16.9", Height: 3U - 133mm / 5.22", Depth - 564mm / 22.2" (excluding connectors, encoders, handles, etc.)
3. Weight	43kg / 97lbs
4. AC Input connector (with Protective Cover)	3 x M6 x 1" threaded studs and terminal cover.
5.Output Connectors	Up to and including 300V models: bus-bars. Models greater than 300V: threaded-stud terminals.
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 1" threaded stud

2.7 WARRANTY	
1. Warranty	Five (5) years

*3. GENESYS™ 30V - 50V models (15kW) require a Two-Wire Parallel Master/Slave connection. See the Product User's Manual for details.
*4 30V, 40V and 50V (15kW) models with 480VAC input have CE Mark.
All specifications subject to change without notice.

Genesys™ Power Parallel and Series Configurations

Parallel operation - Master/Slave:

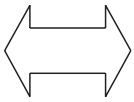
Active current sharing allows up to four identical units to be connected in an Auto-parallel configuration for four times the Output power. In Advanced Parallel Master/Slave Mode, total current is programmed and reported by the Master. Up to four supplies act as one.

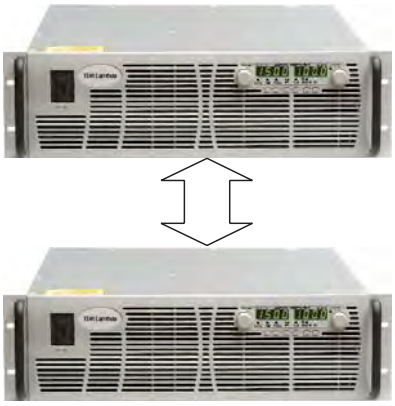
Series operation

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 Interfaces.





Programming Options (Factory installed)

IEEE Multi-Drop Interface — P/N: IEMD

- Allows IEEE Master to control up to 30 (standard) 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

Multi-Drop Slave Option is Standard — P/N: "-----"

- Standard Units are equipped with the Multi-Drop Slave (RS-485) function
- Allows RS-485 Master to control up to 30 (standard) Slaves over RS-485 Daisy-chain

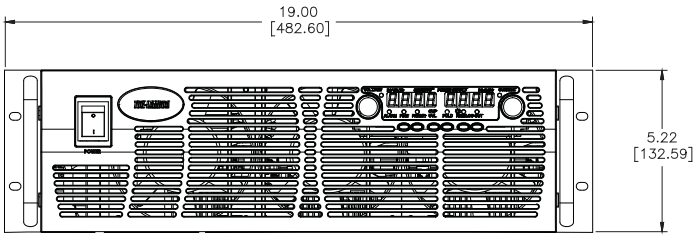
Isolated Analog Programming

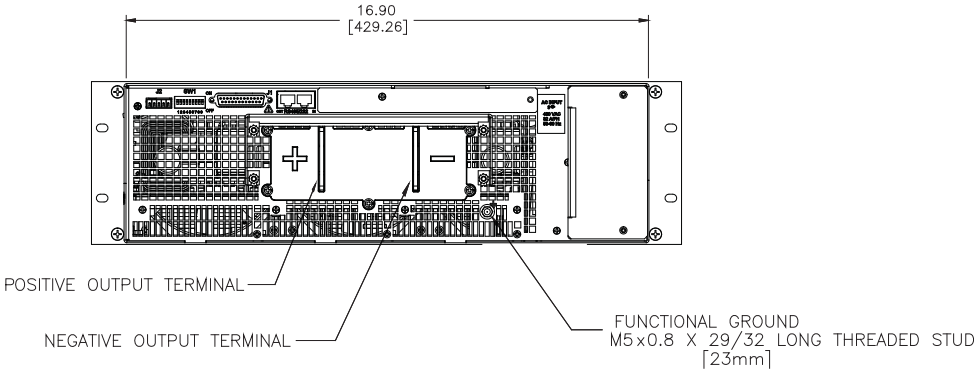
- Four Channels total (Two to Program Voltage and Current; Two to Monitor Voltage and Current)
- Isolation allows operation with floating references in harsh electrical environments
- Choose between programming with Voltage or Current
- Connection via removable terminal block: Phoenix MC1,5/8-ST-3.81
- Voltage Programming, User-selectable 0-5V or 0-10V signal — **P/N: IS510**
  - Power supply Voltage and Current Programming Accuracy: ±1%
  - Power supply Voltage and Current Monitoring Accuracy: ±1.5%
- Current Programming with 4-20mA signal — **P/N: IS420**
  - Power supply Voltage and Current Programming Accuracy: ±1%

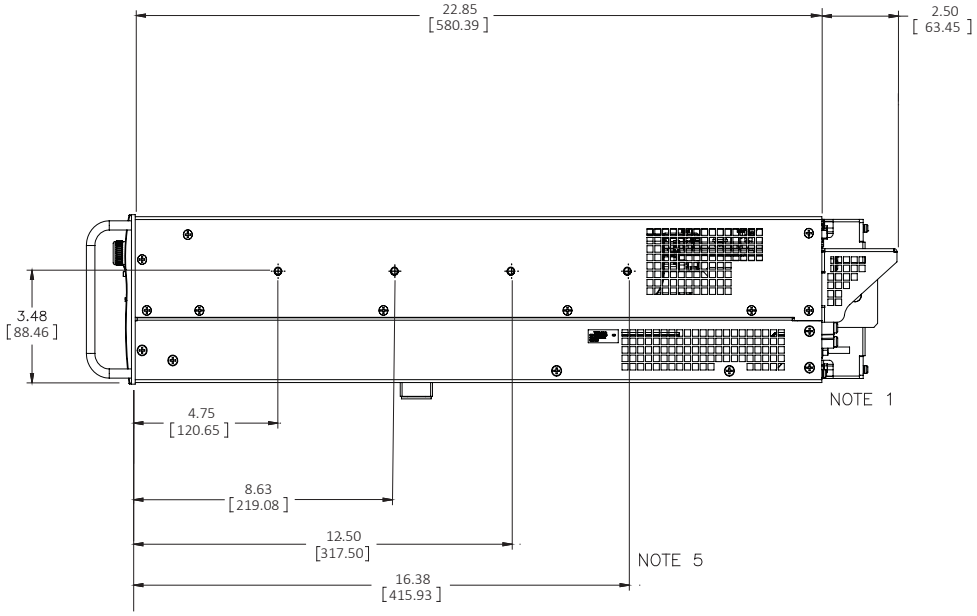
LAN Interface LXI Compliant to Class C — P/N: LAN

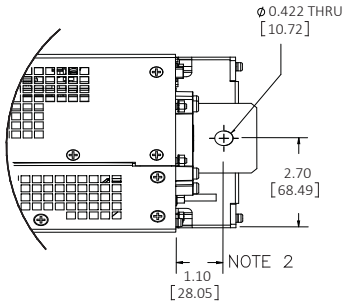
- Meets all LXI Class C Requirements
- Address Viewable on Front Panel
- Fixed and Dynamic Addressing
- Fast Startup
- VISA & SCPI Compatible
- LAN Fault Indicators
- Auto-detects LAN Cross-over Cable

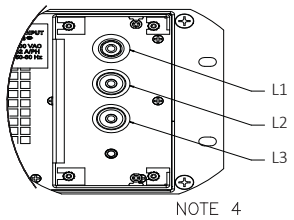
Outline Drawings: Genesys™ 15kW (30V to 50V - 400VAC/480VAC)







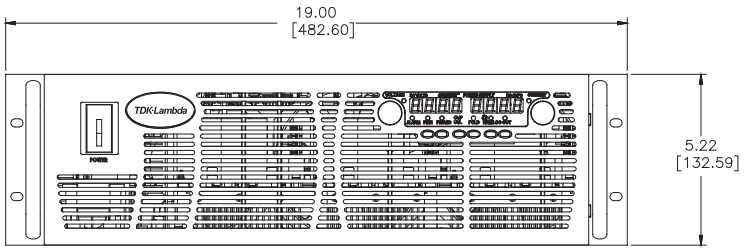


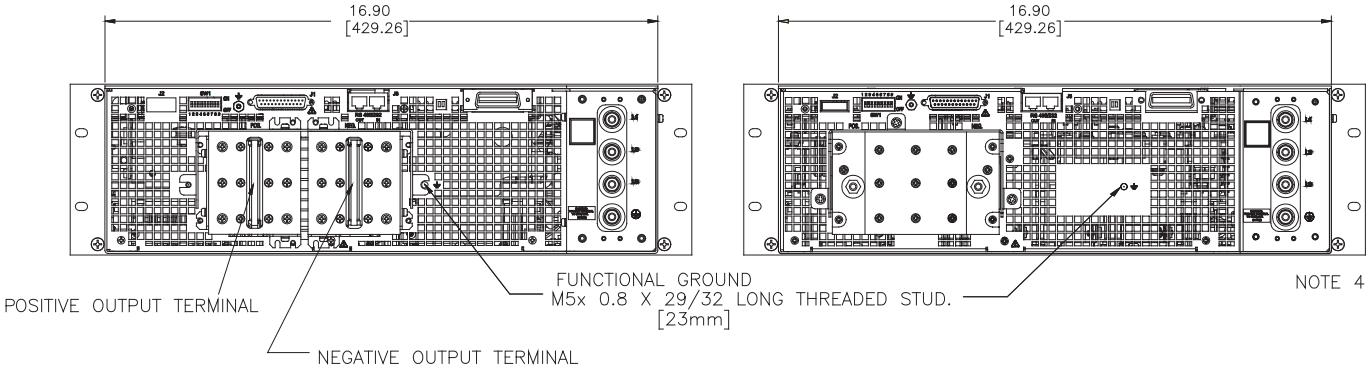


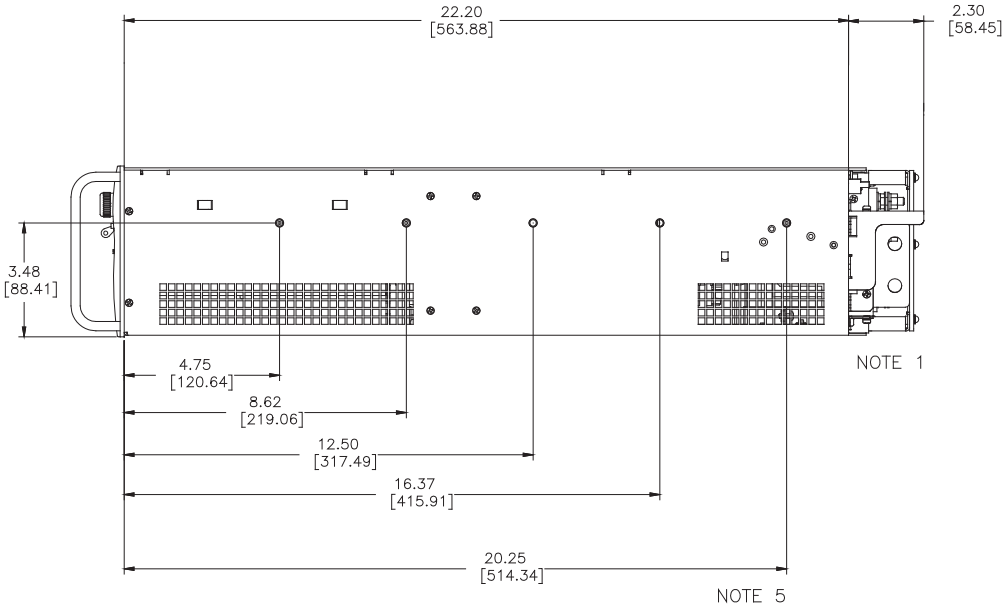
NOTES:

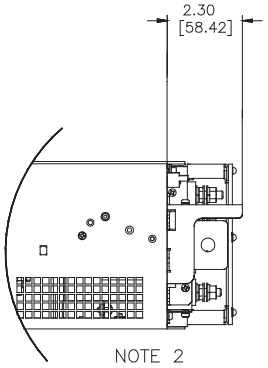
1. N/A
2. Busbars for models 30V-50V Output: one hole, 0.42” (10.72mm) diameter.
3. N/A
4. Input Terminals M6 x 1” (3) + Ground M5 x 1” (2).
5. Mounting for Slide Mounts (not included).
   Recommend General Devices, Chassis Trak P/N C230-S-122.
   Secure with pan head screw M5 x 0.8-8mm long (max).

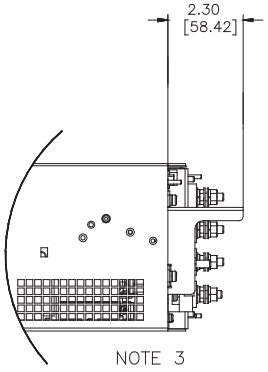
Outline Drawings: Genesys™ 10kW (All - 208VAC) , 10kW/15kW (60V to 600V - 208/400/480VAC)











NOTES:

1. Busbars for models < 30V Output: two holes, 0.42” 10.72mm) diameter.
2. Busbars for models 60V-300V Output: one hole 0.42” (10.72mm) diameter.
3. Threaded stud terminals for models > 300V Output.
4. Input Terminals M6 x 1” (3) + Ground M5 x 1” (2).
5. Mounting for Slide Mounts (not included).
   Recommend General Devices, Chassis Trak P/N C230-S-122.
   Secure with pan head screw M5x0.8-8mm long (max).

Power Supply Identification / Accessories (Genesys™ 3U 10/15kW)

How to Order:

GEN **10** - **1000** - **LAN** - **3P208**

Series Name	Output Voltage (0~10V)	Output Current (0~1000A)	Factory Options Option: "----" LAN IEMD IS510 IS420	AC Input Options 3P208 (Three-Phase 208VAC) 3P400 (Three-Phase 400VAC) 3P480 (Three-Phase 480VAC)

Models 10kW/15kW

Model	Output Voltage (VDC)	Output Current (A)	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		0~500	15
GEN 40-250	0~40	0~250	10
GEN 40-375		0~375	15
GEN 50-200	0~50	0~200	10
GEN 50-300		0~300	15
GEN 60-167	0~60	0~167	10
GEN 60-250		0~250	15
GEN 80-125	0~80	0~125	10
GEN 80-187.5		0~187.5	15
GEN 100-100	0~100	0~100	10
GEN 100-150		0~150	15
GEN 125-80	0~125	0~80	10
GEN 125-120		0~120	15

Model	Output Voltage (VDC)	Output Current (A)	Output Power (kW)
GEN 150-66	0~150	0~66	10
GEN 150-100		0~100	15
GEN 200-50	0~200	0~50	10
GEN 200-75		0~75	15
GEN 250-40	0~250	0~40	10
GEN 250-60		0~60	15
GEN 300-33	0~300	0~33	10
GEN 300-50		0~50	15
GEN 400-25	0~400	0~25	10
GEN 400-37.5		0~37.5	15
GEN 500-20	0~500	0~20	10
GEN 500-30		0~30	15
GEN 600-17	0~600	0~17	10
GEN 600-25		0~25	15

Factory options

P/N

Factory options	P/N
RS-232/RS-485 Multi-Drop Interface built-in Standard	------
LAN Interface (LXI Class C compliant)	LAN
GPIB (Multi-Drop Master) Interface	IEMD
Voltage Programming Isolated Analog Interface	IS510
Current Programming Isolated Analog Interface	IS420

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	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.

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

* Included with GENESYS™-1U, -2U power supply

Genesys™ Family - Output Voltage / Output Current

Model	GENH	GEN-1U			GEN-2U		GEN 3U	
Rated Power	**750W**	**750W**	**1500W**	**2400W**	**3300W**	**5000W**	**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	0~25A	0~25A	0~50A	0~80A	0~110A	0~170A	0~333A	0~500A(3), (4)
0~40V	0~19A	0~19A	0~38A	0~60A	0~85A	0~125A	0~250A	0~375A(3), (4)
0~50V			0~30A				0~200A	0~300A(3), (4)
0~60V	0~12.5A	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					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							0~25A	0~37.5A
0~500V							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
Weight (kg/lb)	4.5 / 9.9	7 / 15	8.5 / 18	10 / 22	13 / 29	16 / 35	43 / 97	43 / 97

(4) Available in 400VAC and 480VAC input. For 208VAC input please contact the factory.

AC Inputs

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

(1) UL Listed; CE Mark, **RoHs** (2) UL Recognized; CE Mark (3) UL Recognized only (CE Mark for select 15kW (30V-50V) models).

Options (All Models)

"----"	Standard (with Multi-Drop Slave installed)
LAN	LXI Compliant LAN Interface (Class C)
IEMD	IEEE Master (IEEE 488.2 & SCPI compliant) with Multi-Drop Slave installed
IS510	Isolated Analog Programming (0-5V or 0-10V, User-selectable)
IS420	Isolated Analog Programming (4-20mA)

(All options are factory installed and limited to one per power supply).
All specifications subject to change without notice.

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