Advanced Test Equipment Corp.

www.atecorp.com 800-404-ATEC (2832)

GENESYS™

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

! Advanced Features Built-In !

- *Arbitrary Waveform Generator with Auto-Trigger Capability*
- *Programmable Slew Rate Control (Vout/Iout)*
- *Constant Power Limit Operation*
- *Internal Resistance Programming*
- *Built-In Remote Isolated Analog Interface*
- *Built-In LAN (LXI 1.5), USB, and RS-232/RS-485 Interfaces*
- *Optional EtherCAT, Modbus-TCP, IEEE (488.2) Interfaces*
- *Blank Front Panel Option Available*

TDK·Lambda

Trusted • Innovative • Reliable

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

Features include:

- Wide Range of popular worldwide AC inputs:
  3ø 208VAC (170VAC ~ 265VAC), Wide-range 3ø 480VAC (342VAC ~ 528VAC)
- Active PFC (0.94 typical)
- Output Voltage up to 600V, Current up to 4500A
- Built-in LAN (LXI 1.5), USB, RS-232/RS-485 Interface
- Multi-Drop capability (RS-485)
- Multi-functional front panel display
- Last-Setting Memory
- Auto-Start / Safe-Start: user selectable
- High Resolution 16 bit ADCs & DACs
- Arbitrary Waveform Generator with Auto-Trigger Capability
- Store up to 100 steps into four internal memory cells
- High-speed Programming
- Constant Voltage/Constant Current operation modes
- Constant Power (CP) Limit
- Slew-Rate Control (V/I)
- Internal Resistance Programming Simulation
- Local / Remote Sensing - software controlled
- Built-In Remote Isolated Analog Program/Monitor and Control Interface
- Protection functions (OVP, UVP, UVL, FOLD (CV/CC), OCL, OTP, AC FAIL)
- Fan speed controlled by ambient temperature and load
- Certified LabWindows™/CVI, LabVIEW™, and IVI Drivers
- Optional EtherCAT, Modbus-TCP, IEEE (488.2) Interfaces
- 19" Rack Mount capability for ATE and OEM application
- Scalable Power Systems of 15kW
- Parallel Systems (up to 120kW) with Auto-Configure
- Worldwide Safety Agency approvals
- CE Mark for Low Voltage, EMC and RoHS3 Directives
- Five year warranty for the Power Supply

Applications

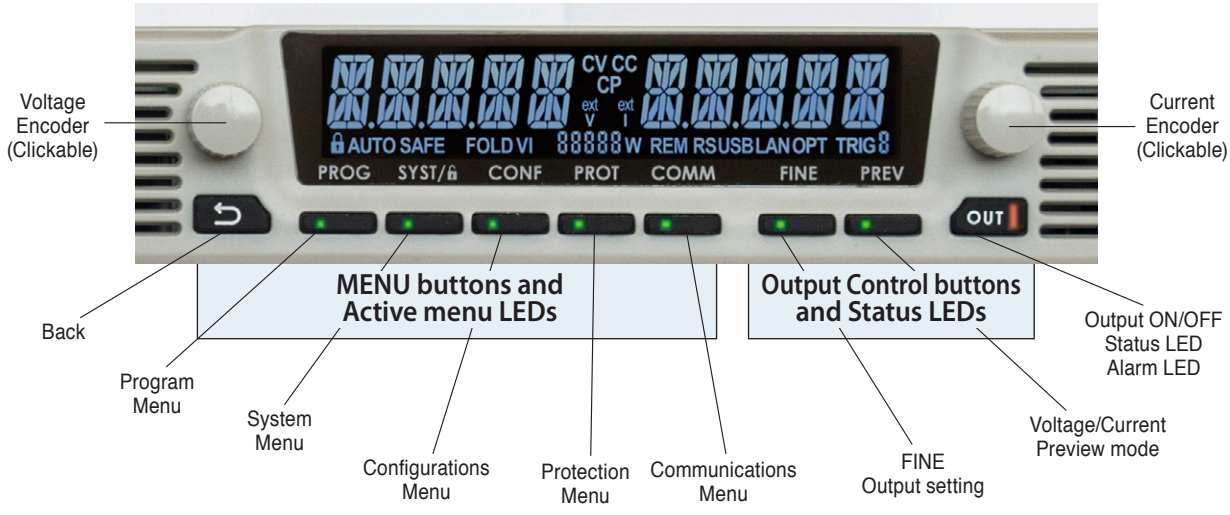
GENESYS™ power supplies have been designed to meet the demands of a wide variety of applications.

- **Test & Measurement systems**
- **Component Device Testing**
- **Industrial Automation and process control**
- **Semiconductor Processing & Burn-In**
- **Aerospace & Satellite Testing**
- **Automotive Component & HIL Testing**
- **Medical Imaging**
- **Magnets, RF Magnifiers and Beam Steering**
- **Green Technology**
- **Higher power systems** can be configured with up to twelve (12) 7.5kW units. Each unit is 1U with zero space between them (zero stack).
- **OEM Designers** have a wide variety of Inputs and Outputs from which to select depending on application and location.

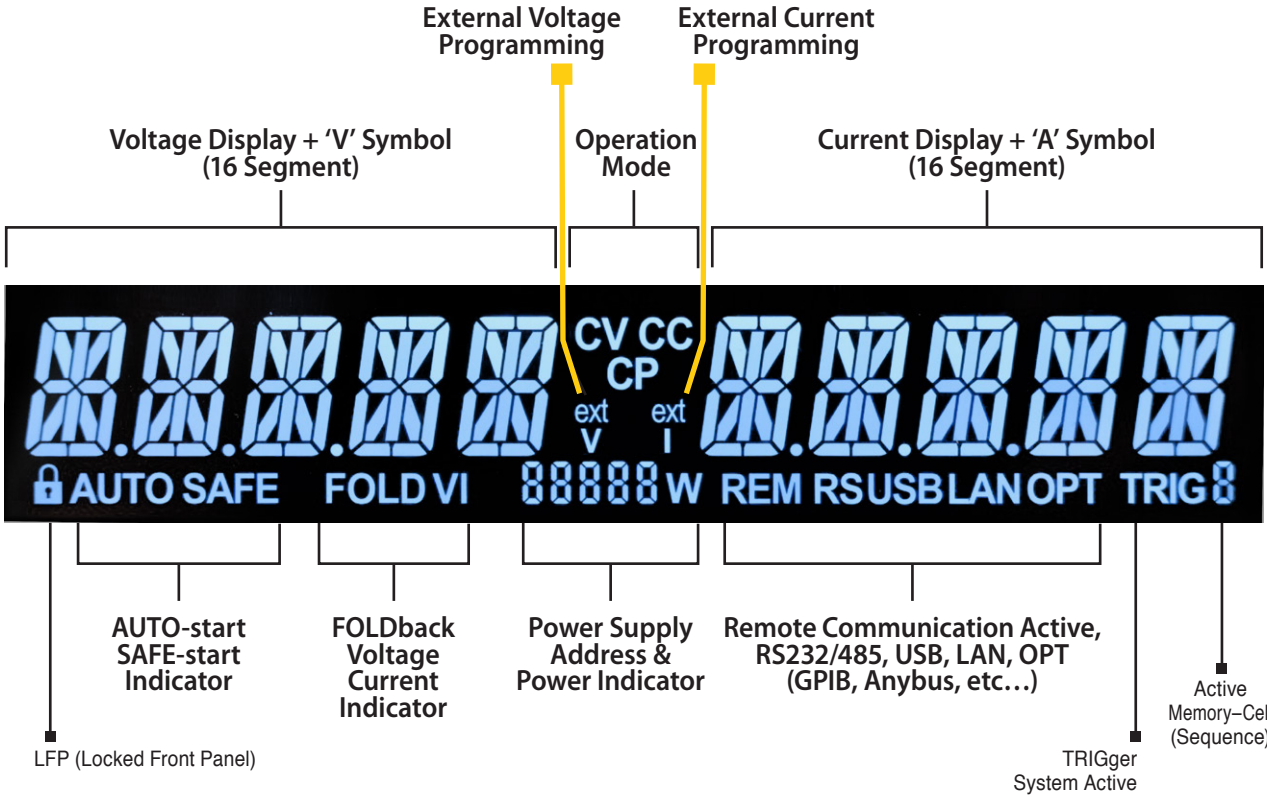

AC INPUT


TDK·Lambda
DC Power supply system
CB 1
CB 2

Front Panel Display MENU/CONTROL buttons:



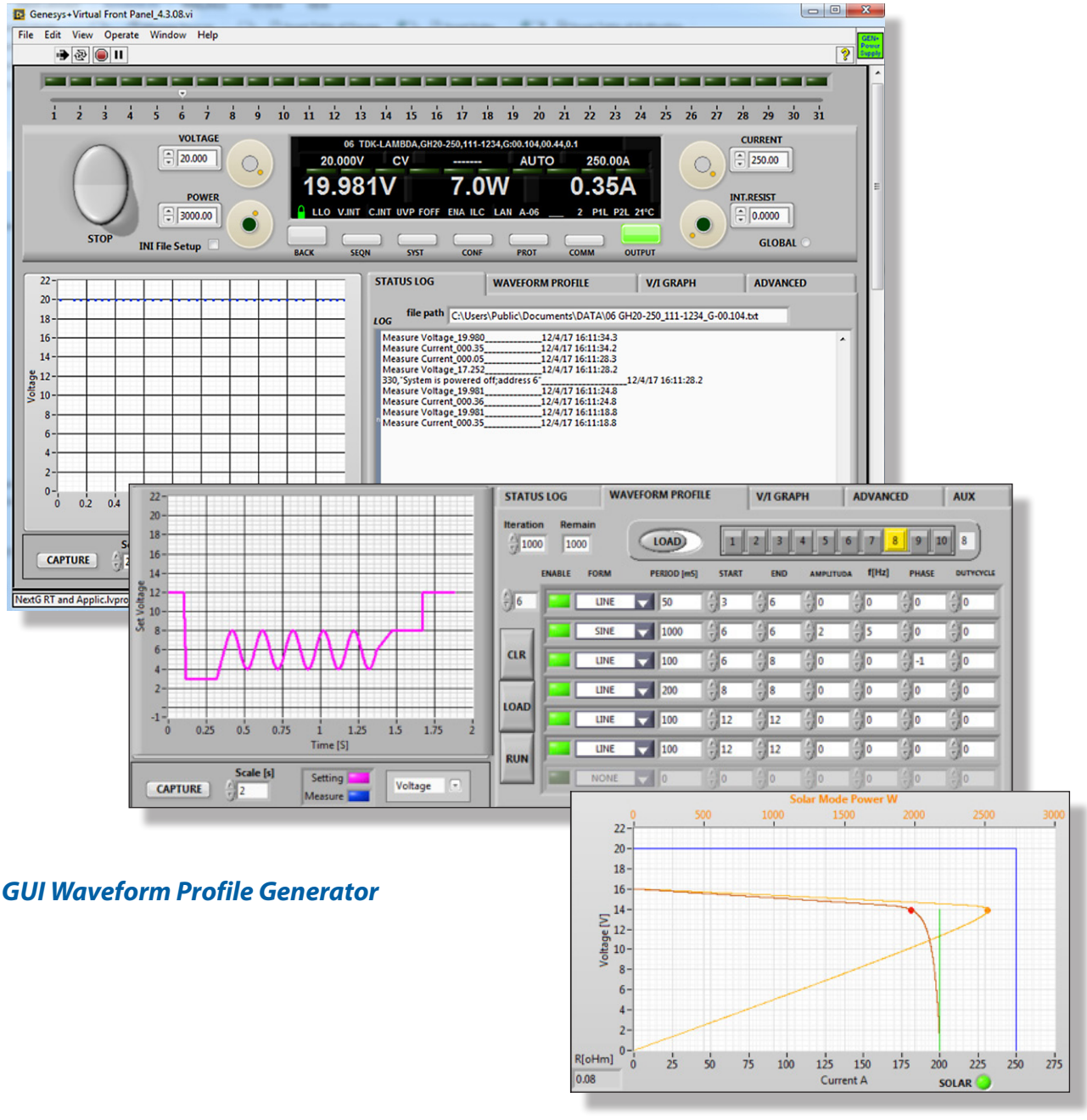
Front Panel Display indicators



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**



GUI Waveform Profile Generator

How to order GSPS Series - Configurable High Power System

G SPS 10 - 4500 - - -

Series Name	Output Voltage	Output Current	Interface Options	AC Input Options	Accessories Options
Front Panel Type				3P208 (Three Phase 170~265VAC)	M - Printed *User Manual
Empty: standard	(0~10V)	(0~1500A)		3P480 (Three Phase 342~528VAC)	* User Manual & GUI are available on the website
B: Blank Front Panel (ATE version)					

Interface Options (Factory installed)

	P/N
LAN (*LXI* 1.5 compliant with Multi-Drop capability)- built-in	-
USB 2.0 compliant with Multi-Drop capability - built-in	-
RS-232/RS-485 - built-in	-
Isolated Analog Program/Monitor Interface (5V/10V Pgm/Mon with 600V isolation) - built-in	-
IEEE (488.2 & SCPI compliant with Multi-Drop capability installed)	IEEE
Modbus-TCP	MDBS
EtherCAT	ECAT

Power (kW)	30kW	45kW	60kW
Voltage (VDC)	Current (A)		
0~10V	0~3000	-	0~4500
0~20V	0~1500	0~2250	0~3000
0~30V	0~1020	0~1530	0~2040
0~40V	0~750	0~1125	0~1500
0~50V	0~600	0~900	0~1200
0~60V	0~510	0~765	0~1020
0~80V	0~390	0~585	0~780
0~100V	0~300	0~450	0~600
0~150V	0~204	0~306	0~408
0~200V	0~150	0~225	0~300
0~300V	0~102	0~153	0~204
0~400V	0~78	0~117	0~156
0~500V	0~60	0~90	0~120
0~600V	0~51	0~76.5	0~102

60kW High Power System Series Specifications

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

OUTPUT RATING		10-4500	20-3000	30-2040	40-1500	50-1200	60-1020	80-780	100-600	150-408	200-300	300-204	400-156	500-120	600-102
1.Rated output voltage (*1)	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
2.Rated output current (*2)	A	4500(*3)	3000	2040	1500	1200	1020	780	600	408	300	204	156	120	102
3.Rated output power	KW	45.0	60.0	61.2	60.0	60.0	61.2	62.4	60.0	61.2	60.0	61.2	62.4	60.0	61.2
INPUT CHARACTERISTICS	V	**10**	**20**	**30**	**40**	**50**	**60**	**80**	**100**	**150**	**200**	**300**	**400**	**500**	**600**
1.Input voltage/freq. 3 phase, 3 wire+ground (*4)	---	3-Phase, 200V models: 170~265Vac, 47~63Hz (Covers 200/230Vac).													
		3-Phase, 480V models: 342~528Vac, 47~63Hz (Covers 380/400/415/440/460/480Vac).													
2.Maximum Input current at 100% load 3-Phase, 200V models:	---	212A @ 200Vac.													
2.Maximum Input current at 100% load 3-Phase, 480V models:	---	110.4A @ 380Vac.													
3.Power Factor (Typ.)	---	0.94 @ 200/380Vac, rated output power.													
4.Efficiency (minimum) (*5)	%	87		88	89		90								
CONSTANT VOLTAGE MODE	V	**10**	**20**	**30**	**40**	**50**	**60**	**80**	**100**	**150**	**200**	**300**	**400**	**500**	**600**
1.Max. Line regulation (*6)	---	0.01% of rated output voltage.													
2.Max. Load regulation (*7)	---	0.01% of rated output voltage +5mV.													
3.Temperature coefficient	---	50PPM/°C from rated output voltage, following 30 minutes warm-up.													
4.Temperature stability	---	0.01% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temperature.													
5.Warm-up drift	---	Less than 0.05% of rated output voltage +2mV over 30 minutes following power on.													
6.Remote sense compensation/wire (*8)	V	2	2	5	5	5	5	5	5	5	5	5	5	5	5
7.Up-prog. response time (*9)	mS	30	30	30	30	50	50	50	50	50	50	50	100	100	100
8.Down-prog. response time: Full load (*9)	mS	50	50	80	80	80	80	100	100	100	100	100	150	200	200
8.Down-prog. response time: No load (*10)	mS	300	600	800	900	950	1000	1200	1900	2000	2500	3000	4000	4000	3000
9.Transient response time	---	Time for output voltage to recover within 0.5% of its rated output for a load change 10~90% of rated output current. Output set point: 10~100%, Local sense. Less than 1mS for models up to and including 100V. 2mS for models above 100V.													
CONSTANT CURRENT MODE	V	**10**	**20**	**30**	**40**	**50**	**60**	**80**	**100**	**150**	**200**	**300**	**400**	**500**	**600**
1.Max. Line regulation (*6)	---	0.05% of rated output current.													
2.Max. Load regulation (*11)	---	0.08% of rated output current.													
3.Temperature coefficient	---	10V~100V models: 100PPM/°C from rated output current, following 30 minutes warm-up.													
		150V~600V models: 70PPM/°C from rated output current, following 30 minutes warm-up.													
4.Temperature stability	---	0.01% of rated Iout over 8hrs. interval following 30 minutes warm-up. Constant line, load & temperature.													
5.Warm-up drift	---	10V~100V models: Less than +/-0.25% of rated output current over 30 minutes following power on.													
		150V ~ 600V models: Less than +/-0.15% of rated output current over 30 minutes following power on.													

ANALOG PROGRAMMING AND MONITORING (ISOLATED FROM THE OUTPUT)

1.Vout voltage programming	---	0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.15% of rated Vout.
2.Iout voltage programming (*12)	---	0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.4% of rated Iout.
3.Vout resistor programming	---	0~100%, 0~5/10KΩ full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Vout.
4.Iout resistor programming (*12)	---	0~100%, 0~5/10KΩ full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Iout.
5.Output voltage monitor (*19)	---	0~5V or 0~10V, user selectable. Accuracy: +/-0.5% of rated Vout.
6.Output current monitor (*12) (*19)	---	0~5V or 0~10V, user selectable. Accuracy: +/-0.5% of rated Iout.

SIGNALS AND CONTROLS (ISOLATED FROM THE OUTPUT)

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

FUNCTIONS AND FEATURES

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

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

	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
1.Vout programming accuracy (*13)	---	0.05% of rated output voltage.													
2.Iout programming accuracy (*12)	---	0.3% of rated output current.													
3.Vout programming resolution	---	0.002% of rated output voltage.													
4.Iout programming resolution	---	0.002% of rated output current.													
5.Vout readback accuracy	---	0.05% of rated output voltage.													
6.Iout readback accuracy (*12)	---	0.2% of rated output current.													
7.Vout readback resolution	% of rated output voltage	0.011%	0.006%	0.004%	0.003%	0.003%	0.002%	0.002%	0.011%	0.007%	0.005%	0.004%	0.003%	0.003%	0.002%
8.Iout readback resolution	% of rated output current	0.003%	0.004%	0.005%	0.007%	0.01%	0.01%	0.0013%	0.002%	0.003%	0.004%	0.005%	0.007%	0.009%	0.01%
PROTECTIVE FUNCTIONS	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
1.Foldback protection	---	Output shut-down when power supply changes mode from CV or Power Limit to CC mode or from CC or Power Limit to CV mode. User presetable. Reset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by communication.													
2.Over-voltage protection (OVP)	---	Output shut-down. Reset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by communication.													
3.Over -voltage programming range	V	0.5~12	1~24	2~36	2~44.1	5~55.125	5~66.15	5~88.2	5~110.25	5~165.37	5~220.5	5~330.75	5~441	5~551.25	5~661.5
4.Over-voltage programming accuracy	---	+/-1% of rated output voltage													
5.Output under voltage limit (UVL)	---	Prevents from adjusting Vout below limit. Does not apply in analog programming. Preset by front panel or communication port.													
6.Over temperature protection	---	Shuts down the output. Auto recovery by autostart mode.													
7.Output under voltage protection (UVP)	---	Prevents adjustment of Vout below limit. P.S output turns Off during under voltage condition. Reset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by communication.													

FRONT PANEL

1.Control functions	---	Multiple options with 2 Encoders.
	---	Vout/Iout/Power Limit manual adjust.
	---	OVP/UVL/UVP manual adjust.
	---	Protection Functions - OVP, UVL, UVP, Foldback, OCL, ENA, ILC.
	---	Communication Functions - Selection of LAN, RS232, RS485, USB or Optional communication interface.
	---	Output ON/OFF, Front Panel Lock.
	---	Communication Functions - Selection of Baud Rate, Address, IP and communication language.
	---	Analog Control Functions - Selection Voltage/resistive programming 5V/10V, 5KΩ/10KΩ programming.
	---	Analog Monitor Functions - Selection of Voltage/Current Monitoring 5V/10V.
2.Display	---	Vout: 4 digits, accuracy: 0.05% of rated output voltage +/-1 count.
	---	Iout: 4 digits, accuracy: 0.2% of rated output current +/-1 count.
3.Front Panel Buttons Indications	---	OUTPUT ON, ALARM, PREVIEW, FINE, COMMUNICATION, PROTECTION CONFIGURATION SYSTEM, SEQUENCER.
4.Front Panel Display Indications	---	Voltage, Current, Power, CV, CC, CP, External Voltage, External Current, Address, LFP Autostart, Safetstart, Foldback V/I, Remote (communication), RS/USB/LAN/Optional communication interface, Trigger, Load/Store Cell.
5.Circuit breaker	---	The AC supply for the Power System unit is protected by 80A circuit breakers. These CB's are accessible on the front panel of the cabinet.

ENVIRONMENTAL CONDITIONS

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

MECHANICAL

1.Cooling	---	Forced air cooling by power supply internal fans. Airflow direction: From cabinet front panel to rear.
2.Weight	Kg	Less than 200Kg.
3.Dimensions (WxHxD)	mm	W: 553, H: 1028 (With Castors; Without casrors cabinet hight is 947), D: 902.
4.Vibration (Package transportation)	---	ISTA 1H: 2014, Method: ASTM D4728 Random vibration test.
5.Shock & Drop (Package transportation)	---	ISTA 1H: 2014, Drop test Method: ASTM D5276 free fall; Rotation edge drop test: ASTM D6179 Rotational drop.

SAFETY/EMC

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

NOTES:

*1: Minimum voltage is guaranteed to maximum 0.1% of rated output voltage.
*2: Minimum current is guaranteed to maximum 0.2% of rated output current.
*3: Model: 10V – Max. ambient temperature is 40°C.
*4: For cases where conformance to various safety standards (IEC, etc…) is required, to be described as 190-240Vac (50/60Hz) for 3-Phase 200V models and 380~480Vac (50/60Hz) for 3-Phase 480V models.
*5: 3-Phase 200V models: At 200Vac input voltage, 3-Phase 480V: At 380Vac input voltage. With rated output power.
*6: 3-Phase 200V models: 170~265Vac, 3-Phase 480V models: 342~528Vac. Constant load.
*7: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.
*8: The maximum voltage on the power supply terminals must not exceed the rated voltage.
*9: From 10% to 90% of Rated Output Voltage at rated resistive load.
*10: From 90% to 10% of Rated Output Voltage.
*11: For load voltage change, equal to the unit voltage rating, constant input voltage.
*12: The Constant Current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift.
*13: Measured at the sensing point.
*14: For 10V model, Ta derating 2°C/100m.
*15: Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m.
*16: Max. ambient temperature for IEEE is 40C.
*17: For 10V model only: Max. output current for IEEE is 4500A up to 40C
*18: EMC specs based on GSP15kW series.
*19: For steady state only.

45kW High Power System Series Specifications

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

OUTPUT RATING			20-2250	30-1530	40-1125	50-900	60-765	80-585	100-450	150-306	200-225	300-153	400-117	500-90	600-76.5
1.Rated output voltage (*1)	V		20	30	40	50	60	80	100	150	200	300	400	500	600
2.Rated output current (*2)	A		2250	1530	1125	900	765	585	450	306	225	153	117	90	76.5
3.Rated output power	KW		45.0	45.9	45.0	45.0	45.9	46.8	45.0	45.9	45.0	45.9	46.8	45.0	45.9
INPUT CHARACTERISTICS	V		**20**	**30**	**40**	**50**	**60**	**80**	**100**	**150**	**200**	**300**	**400**	**500**	**600**
1.Input voltage/freq. 3 phase, 3 wire+ground (*3)	---	3-Phase, 200V models: 170~265Vac, 47~63Hz (Covers 200/230Vac).													
		3-Phase, 480V models: 342~528Vac, 47~63Hz (Covers 380/400/415/440/460/480Vac).													
2.Maximum Input current at 100% load 3-Phase, 200V models:	---	160A @ 200Vac.													
2.Maximum Input current at 100% load 3-Phase, 480V models:	---	84.3A @ 380Vac.													
3.Power Factor (Typ.)	---	0.94 @ 200/380Vac, rated output power.													
4.Efficiency (minimum) (*4)	%		87		88		89				90				
CONSTANT VOLTAGE MODE	V		**20**	**30**	**40**	**50**	**60**	**80**	**100**	**150**	**200**	**300**	**400**	**500**	**600**
1.Max. Line regulation (*5)	---	0.01% of rated output voltage.													
2.Max. Load regulation (*6)	---	0.01% of rated output voltage +5mV.													
3.Temperature coefficient	---	50PPM/^{O}C from rated output voltage, following 30 minutes warm-up.													
4.Temperature stability	---	0.01% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temperature.													
5.Warm-up drift	---	Less than 0.05% of rated output voltage +2mV over 30 minutes following power on.													
6.Remote sense compensation/wire (*7)	V		2	5	5	5	5	5	5	5	5	5	5	5	5
7.Up-prog. response time (*8)	mS		30	30	30	50	50	50	50	50	50	50	100	100	100
8.Down-prog. response time: Full load (*8)	mS		50	80	80	80	80	100	100	100	100	100	150	200	200
8.Down-prog. response time: No load (*9)	mS		600	800	900	950	1000	1200	1900	2000	2500	3000	4000	4000	3000
9.Transient response time	---	Time for output voltage to recover within 0.5% of its rated output for a load change 10~90% of rated output current. Output set point: 10~100%, Local sense. Less than 1mS for models up to and including 100V. 2mS for models above 100V.													
CONSTANT CURRENT MODE	V		**20**	**30**	**40**	**50**	**60**	**80**	**100**	**150**	**200**	**300**	**400**	**500**	**600**
1.Max. Line regulation (*5)	---	0.05% of rated output current.													
2.Max. Load regulation (*10)	---	0.08% of rated output current.													
3.Temperature coefficient	---	20V~100V models: 100PPM/^{O}C from rated output current, following 30 minutes warm-up.													
		150V~600V models: 70PPM/^{O}C from rated output current, following 30 minutes warm-up.													
4.Temperature stability	---	0.01% of rated Iout over 8hrs. interval following 30 minutes warm-up. Constant line, load & temperature.													
5.Warm-up drift	---	20V~100V models: Less than +/-0.25% of rated output current over 30 minutes following power on.													
		150V ~ 600V models: Less than +/-0.15% of rated output current over 30 minutes following power on.													

ANALOG PROGRAMMING AND MONITORING (ISOLATED FROM THE OUTPUT)

1.Vout voltage programming	---	0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.15% of rated Vout.
2.Iout voltage programming (*11)	---	0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.4% of rated Iout.
3.Vout resistor programming	---	0~100%, 0~5/10KΩ full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Vout.
4.Iout resistor programming (*11)	---	0~100%, 0~5/10KΩ full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Iout.
5.Output voltage monitor (*16)	---	0~5V or 0~10V, user selectable. Accuracy: +/-0.5% of rated Vout.
6.Output current monitor (*11) (*16)	---	0~5V or 0~10V, user selectable. Accuracy: +/-0.5% of rated Iout.

SIGNALS AND CONTROLS (ISOLATED FROM THE OUTPUT)

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

FUNCTIONS AND FEATURES

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

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

	V		20	30	40	50	60	80	100	150	200	300	400	500	600
1.Vout programming accuracy (*12)	---	0.05% of rated output voltage.													
2.Iout programming accuracy (*11)	---	0.3% of rated output current.													
3.Vout programming resolution	---	0.002% of rated output voltage.													
4.Iout programming resolution	---	0.002% of rated output current.													
5.Vout readback accuracy	---	0.05% of rated output voltage.													
6.Iout readback accuracy (*11)	---	0.2% of rated output current.													
7.Vout readback resolution	% of rated output voltage		0.006%	0.004%	0.003%	0.003%	0.002%	0.002%	0.011%	0.007%	0.005%	0.004%	0.003%	0.003%	0.002%
8.Iout readback resolution	% of rated output current		0.005%	0.007%	0.009%	0.0012%	0.002%	0.002%	0.003%	0.004%	0.005%	0.007%	0.009%	0.0012%	0.0014%
PROTECTIVE FUNCTIONS	V		20	30	40	50	60	80	100	150	200	300	400	500	600
1.Foldback protection	---	Output shut-down when power supply changes mode from CV or Power Limit to CC mode or from CC or Power Limit to CV mode. User presetable. Reset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by communication.													
2.Over-voltage protection (OVP)	---	Output shut-down. Reset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by communication.													
3.Over -voltage programming range	V		1~24	2~36	2~44.1	5~55.125	5~66.15	5~88.2	5~110.25	5~165.37	5~220.5	5~330.75	5~441	5~551.25	5~661.5
4.Over-voltage programming accuracy	---	+/-1% of rated output voltage													
5.Output under voltage limit (UVL)	---	Prevents from adjusting Vout below limit. Does not apply in analog programming. Preset by front panel or communication port.													
6.Over temperature protection	---	Shuts down the output. Auto recovery by autostart mode.													
7.Output under voltage protection (UVP)	---	Prevents adjustment of Vout below limit. P.S output turns Off during under voltage condition. Reset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by communication.													

FRONT PANEL

1.Control functions	---	Multiple options with 2 Encoders.
	---	Vout/Iout/Power Limit manual adjust.
	---	OVP/UVL/UVP manual adjust.
	---	Protection Functions - OVP, UVL, UVP, Foldback, OCL, ENA, ILC.
	---	Communication Functions - Selection of LAN, RS232, RS485, USB or Optional communication interface.
	---	Output ON/OFF, Front Panel Lock.
	---	Communication Functions - Selection of Baud Rate, Address, IP and communication language.
	---	Analog Control Functions - Selection Voltage/resistive programming 5V/10V, 5KΩ/10KΩ programming.
	---	Analog Monitor Functions - Selection of Voltage/Current Monitoring 5V/10V.
2.Display	---	Vout: 4 digits, accuracy: 0.05% of rated output voltage +/-1 count.
	---	Iout: 4 digits, accuracy: 0.2% of rated output current +/-1 count.
3.Front Panel Buttons Indications	---	OUTPUT ON, ALARM, PREVIEW, FINE, COMMUNICATION, PROTECTION CONFIGURATION SYSTEM, SEQUENCER.
4.Front Panel Display Indications	---	Voltage, Current, Power, CV, CC, CP, External Voltage, External Current, Address, LFP Autostart, Safetstart, Foldback V/I, Remote (communication), RS/USB/LAN/Optional communication interface, Trigger, Load/Store Cell.
5.Circuit breaker	---	The AC supply for the Power System unit is protected by 3x80A circuit breakers for 200Vac Input & 1x40A+1x80A circuit breakers for 380Vac Input. These CB's are accessible on the front panel of the cabinet.

ENVIRONMENTAL CONDITIONS

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

MECHANICAL

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

SAFETY/EMC

1.Safety standards	---	IEC 61010-1:2010, IEC 61010-1:2010/AMD1:2016
1.1.Interface classification	---	Vout≤50V Models: Output, J1, J2, J3, J4, J5, J6, J7, J8 (sense) & J9 (communication options) are Non Hazardous.
		60≤Vout≤600V Models: Output & J8 (sense) are hazardous, J1, J2, J3, J4, J5, J6, J7 & J9 (communication options) are Non Hazardous.
1.2.Withstand voltage	---	Vout≤50V Models: Input – Output & J8 (sense), J1, J2, J3, J4, J5, J6, J7 & J9 (communication options): 4242VDC 1min, Input - Ground: 2835VDC 1min.
		60V≤Vout≤100V Models: Input – Output & J8 (sense), J1, J2, J3, J4, J5, J6, J7 & J9 (communication options): 4242VDC 1min, Output & J8 (sense) - J1, J2, J3, J4, J5, J6, J7 & J9 (communication options): 850VDC 1min, Output & J8 (sense) - Ground: 1500VDC 1min, Input - Ground: 2835VDC 1min.
		100V<Vout≤600V Models: Input – Output & J8 (sense), J1, J2, J3, J4, J5, J6, J7 and J9 (communication options): 4242VDC 1min, Output & J8 (sense) - J1, J2, J3, J4, J5, J6, J7 & J9 (communication options): 1275VDC 1min, Output & J8 (sense) - Ground: 2500VDC 1min. Input - Ground: 2835VDC 1min.
2.EMC standards (*13) (*15)	---	IEC/EN61204-3 Industrial environment
2.1.Conducted emission (*15)	---	IEC/EN61204-3 Industrial environment, Annex H table H.1, FCC Part 15-A, VCCI-A.
2.2.Radiated emission (*15)	---	IEC/EN61204-3 Industrial environment, Annex H table H.3 and H.4, FCC Part 15-A, VCCI-A.

NOTES:

*1: Minimum voltage is guaranteed to maximum 0.1% of rated output voltage.
*2: Minimum current is guaranteed to maximum 0.2% of rated output current.
*3: For cases where conformance to various safety standards (IEC, etc…) is required, to be described as 190-240Vac (50/60Hz) for 3-Phase 200V models and 380~480Vac (50/60Hz) for 3-Phase 480V models.
*4: 3-Phase 200V models: At 200Vac input voltage, 3-Phase 480V: At 380Vac input voltage. With rated output power.
*5: 3-Phase 200V models: 170~265Vac, 3-Phase 480V models: 342~528Vac. Constant load.
*6: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.
*7: The maximum voltage on the power supply terminals must not exceed the rated voltage.
*8: From 10% to 90% of Rated Output Voltage at rated resistive load.
*9: From 90% to 10% of Rated Output Voltage.
*10: For load voltage change, equal to the unit voltage rating, constant input voltage.
*11: The Constant Current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift.
*12: Measured at the sensing point.
*13: Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m.
*14: Max. ambient temperature for IEEE is 40C.
*15: EMC specs based on GSP15kW series.
*16: For steady state only.

30kW High Power System Series Specifications

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

OUTPUT RATING		10-3000	20-1500	30-1020	40-750	50-600	60-510	80-390	100-300	150-204	200-150	300-102	400-78	500-60	600-51
1.Rated output voltage (*1)	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
2.Rated output current (*2)	A	3000(*3)	1500	1020	750	600	510	390	300	204	150	102	78	60	51
3.Rated output power	KW	30.0	30.0	30.6	30.0	30.0	30.6	31.2	30.0	30.6	30.0	30.6	31.2	30.0	30.6
INPUT CHARACTERISTICS	V	**10**	**20**	**30**	**40**	**50**	**60**	**80**	**100**	**150**	**200**	**300**	**400**	**500**	**600**
1.Input voltage/freq. 3 phase, 3 wire+ground (*4)	---	3-Phase, 200V models: 170~265Vac, 47~63Hz (Covers 200/230Vac).													
		3-Phase, 480V models: 342~528Vac, 47~63Hz (Covers 380/400/415/440/460/480Vac).													
2.Maximum Input current at 100% load 3-Phase, 200V models:	---	106.8A @ 200Vac.													
2.Maximum Input current at 100% load 3-Phase, 480V models:	---	56.2A @ 380Vac.													
3.Power Factor (Typ.)	---	0.94 @ 200/380Vac, rated output power.													
4.Efficiency (minimum) (*5)	%	87		88	89		90								
CONSTANT VOLTAGE MODE	V	**10**	**20**	**30**	**40**	**50**	**60**	**80**	**100**	**150**	**200**	**300**	**400**	**500**	**600**
1.Max. Line regulation (*6)	---	0.01% of rated output voltage.													
2.Max. Load regulation (*7)	---	0.01% of rated output voltage +5mV.													
3.Temperature coefficient	---	50PPM/^{O}C from rated output voltage, following 30 minutes warm-up.													
4.Temperature stability	---	0.01% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temperature.													
5.Warm-up drift	---	Less than 0.05% of rated output voltage +2mV over 30 minutes following power on.													
6.Remote sense compensation/wire (*8)	V	2	2	5	5	5	5	5	5	5	5	5	5	5	5
7.Up-prog. response time (*9)	mS	30	30	30	30	50	50	50	50	50	50	50	100	100	100
8.Down-prog. response time: Full load (*9)	mS	50	50	80	80	80	80	100	100	100	100	100	150	200	200
8.Down-prog. response time: No load (*10)	mS	300	600	800	900	950	1000	1200	1900	2000	2500	3000	4000	4000	3000
9.Transient response time	---	Time for output voltage to recover within 0.5% of its rated output for a load change 10~90% of rated output current. Output set point: 10~100%, Local sense. Less than 1mS for models up to and including 100V. 2mS for models above 100V.													
CONSTANT CURRENT MODE	V	**10**	**20**	**30**	**40**	**50**	**60**	**80**	**100**	**150**	**200**	**300**	**400**	**500**	**600**
1.Max. Line regulation (*6)	---	0.05% of rated output current.													
2.Max. Load regulation (*11)	---	0.08% of rated output current.													
3.Temperature coefficient	---	10V~100V models: 100PPM/^{O}C from rated output current, following 30 minutes warm-up.													
		150V~600V models: 70PPM/^{O}C from rated output current, following 30 minutes warm-up.													
4.Temperature stability	---	0.01% of rated Iout over 8hrs. interval following 30 minutes warm-up. Constant line, load & temperature.													
5.Warm-up drift	---	10V~100V models: Less than +/-0.25% of rated output current over 30 minutes following power on.													
		150V ~ 600V models: Less than +/-0.15% of rated output current over 30 minutes following power on.													

ANALOG PROGRAMMING AND MONITORING (ISOLATED FROM THE OUTPUT)

1.Vout voltage programming	---	0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.15% of rated Vout.
2.Iout voltage programming (*12)	---	0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.4% of rated Iout.
3.Vout resistor programming	---	0~100%, 0~5/10KΩ full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Vout.
4.Iout resistor programming (*12)	---	0~100%, 0~5/10KΩ full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Iout.
5.Output voltage monitor (*19)	---	0~5V or 0~10V, user selectable. Accuracy: +/-0.5% of rated Vout.
6.Output current monitor (*12) (*19)	---	0~5V or 0~10V, user selectable. Accuracy: +/-0.5% of rated Iout.

SIGNALS AND CONTROLS (ISOLATED FROM THE OUTPUT)

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

FUNCTIONS AND FEATURES

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

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

	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
1.Vout programming accuracy (*13)	---	0.05% of rated output voltage.													
2.Iout programming accuracy (*12)	---	0.3% of rated output current.													
3.Vout programming resolution	---	0.002% of rated output voltage.													
4.Iout programming resolution	---	0.002% of rated output current.													
5.Vout readback accuracy	---	0.05% of rated output voltage.													
6.Iout readback accuracy (*12)	---	0.2% of rated output current.													
7.Vout readback resolution	% of rated output voltage	0.011%	0.006%	0.004%	0.003%	0.003%	0.002%	0.002%	0.011%	0.007%	0.005%	0.004%	0.003%	0.003%	0.002%
8.Iout readback resolution	% of rated output current	0.004%	0.008%	0.01%	0.0014%	0.002%	0.002%	0.003%	0.005%	0.005%	0.001%	0.001%	0.0014%	0.002%	0.002%

PROTECTIVE FUNCTIONS	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
1.Foldback protection	---	Output shut-down when power supply changes mode from CV or Power Limit to CC mode or from CC or Power Limit to CV mode. User presetable. Reset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by communication.													
2.Over-voltage protection (OVP)	---	Output shut-down. Reset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by communication.													
3.Over -voltage programming range	V	0.5~12	1~24	2~36	2~44.1	5~55.125	5~66.15	5~88.2	5~110.25	5~165.37	5~220.5	5~330.75	5~441	5~551.25	5~661.5
4.Over-voltage programming accuracy	---	+/-1% of rated output voltage													
5.Output under voltage limit (UVL)	---	Prevents from adjusting Vout below limit. Does not apply in analog programming. Preset by front panel or communication port.													
6.Over temperature protection	---	Shuts down the output. Auto recovery by autostart mode.													
7.Output under voltage protection (UVP)	---	Prevents adjustment of Vout below limit. P.S output turns Off during under voltage condition. Reset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by communication.													

FRONT PANEL

1.Control functions	---	Multiple options with 2 Encoders.
	---	Vout/Iout/Power Limit manual adjust.
	---	OVP/UVL/UVP manual adjust.
	---	Protection Functions - OVP, UVL, UVP, Foldback, OCL, ENA, ILC.
	---	Communication Functions - Selection of LAN, RS232, RS485, USB or Optional communication interface.
	---	Output ON/OFF, Front Panel Lock.
	---	Communication Functions - Selection of Baud Rate, Address, IP and communication language.
	---	Analog Control Functions - Selection Voltage/resistive programming 5V/10V, 5KΩ/10KΩ programming.
	---	Analog Monitor Functions - Selection of Voltage/Current Monitoring 5V/10V.
2.Display	---	Vout: 4 digits, accuracy: 0.05% of rated output voltage +/-1 count.
	---	Iout: 4 digits, accuracy: 0.2% of rated output current +/-1 count.
3.Front Panel Buttons Indications	---	OUTPUT ON, ALARM, PREVIEW, FINE, COMMUNICATION, PROTECTION CONFIGURATION SYSTEM, SEQUENCER.
4.Front Panel Display Indications	---	Voltage, Current, Power, CV, CC, CP, External Voltage, External Current, Address, LFP Autostart, Safetstart, Foldback V/I, Remote (communication), RS/USB/LAN/Optional communication interface, Trigger, Load/Store Cell.
5.Circuit breaker	---	The AC supply for the Power System unit is protected by 2x80A circuit breakers for 200Vac & 2x40A circuit breakers for 380Vac. These CB's are accessible on the front panel of the cabinet.

ENVIRONMENTAL CONDITIONS

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

MECHANICAL

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

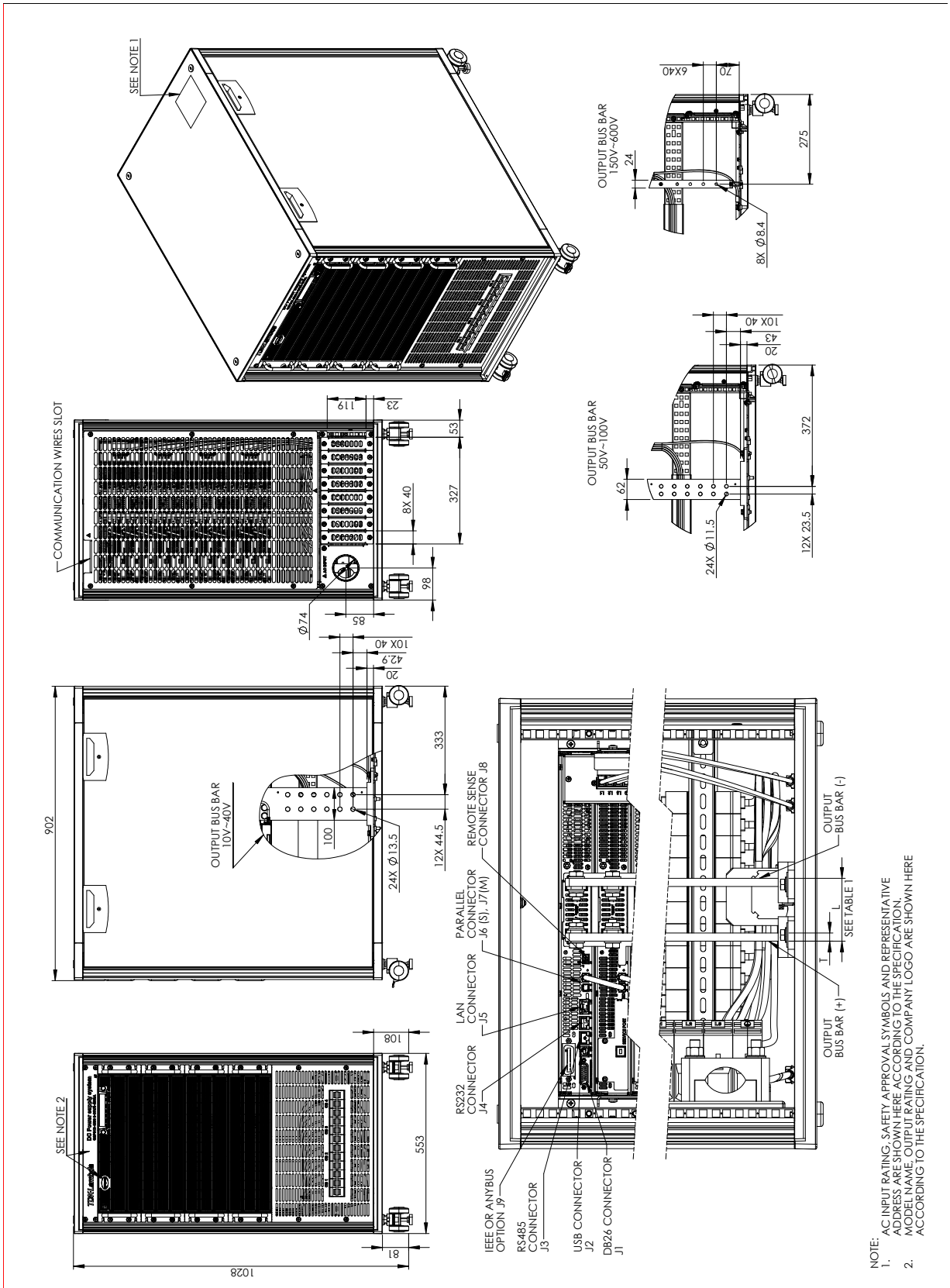
SAFETY/EMC

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

NOTES:

*1: Minimum voltage is guaranteed to maximum 0.1% of rated output voltage.
*2: Minimum current is guaranteed to maximum 0.2% of rated output current.
*3: Model: 10V – Max. ambient temperature is 30°C. Output current derate 30A / 1°C
*4: For cases where conformance to various safety standards (IEC, etc…) is required, to be described as 190-240Vac (50/60Hz) for 3-Phase 200V models and 380~480Vac (50/60Hz) for 3-Phase 480V models.
*5: 3-Phase 200V models: At 200Vac input voltage, 3-Phase 480V: At 380Vac input voltage. With rated output power.
*6: 3-Phase 200V models: 170~265Vac, 3-Phase 480V models: 342~528Vac. Constant load.
*7: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.
*8: The maximum voltage on the power supply terminals must not exceed the rated voltage.
*9: From 10% to 90% of Rated Output Voltage at rated resistive load.
*10: From 90% to 10% of Rated Output Voltage.
*11: For load voltage change, equal to the unit voltage rating, constant input voltage.
*12: The Constant Current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift.
*13: Measured at the sensing point.
*14: For 10V model, Ta derating 2°C/100m.
*15: Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m.
*16: Max. ambient temperature for IEEE is 40C.
*17: For 10V model only: Max. output current for IEEE is 2700A up to 40C
*18: EMC specs based on GSP15kW series.
*19: For steady state only.

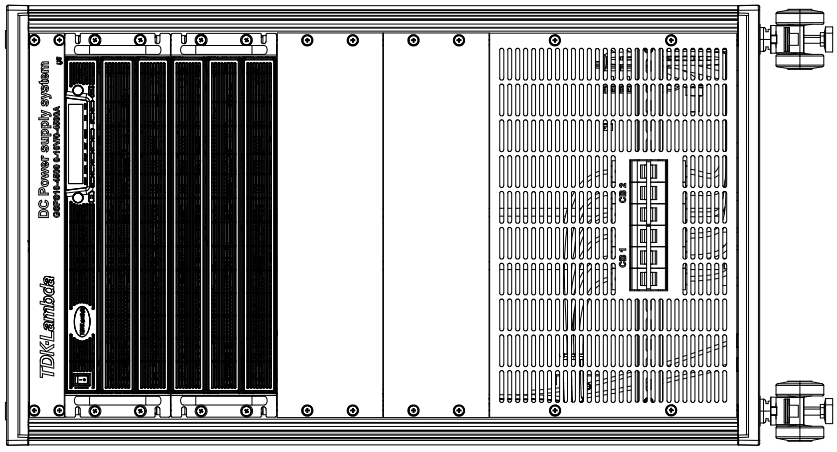
Outline Drawing GENESYS™ GSPS Series



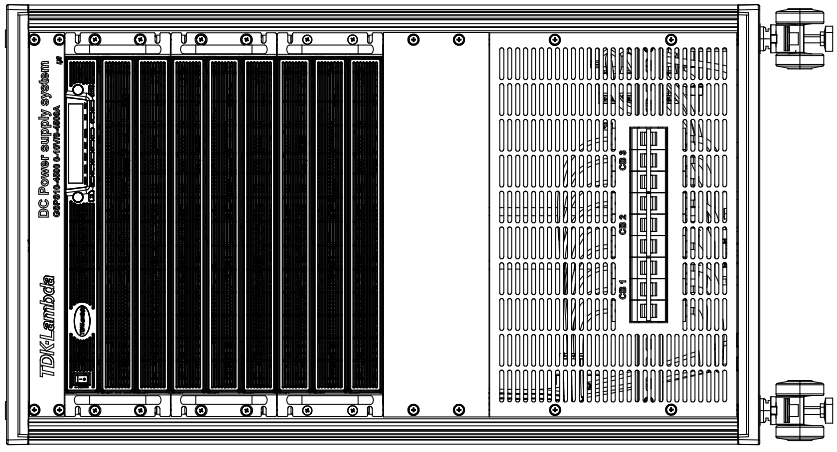
NOTE:
1. AC INPUT RATING, SAFETY APPROVAL SYMBOLS AND REPRESENTATIVE ADDRESS ARE SHOWN HERE ACCORDING TO THE SPECIFICATION. MODEL NAME, OUTPUT RATING AND COMPANY LOGO ARE SHOWN HERE ACCORDING TO THE SPECIFICATION.

Outline Drawing GENESYS™ GSPS Series

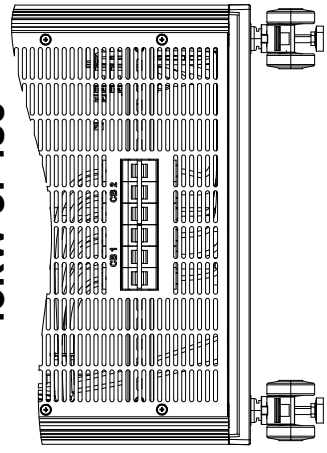
30KW



45KW 3P208



45KW 3P480



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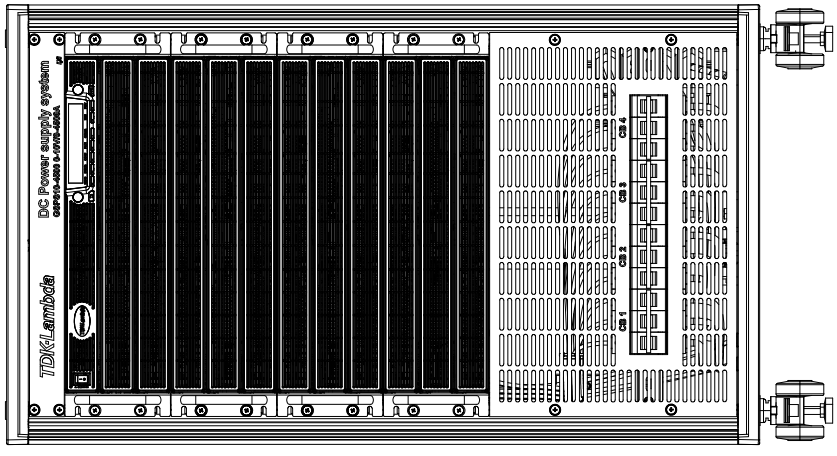
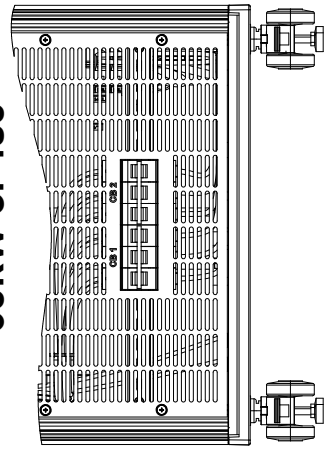
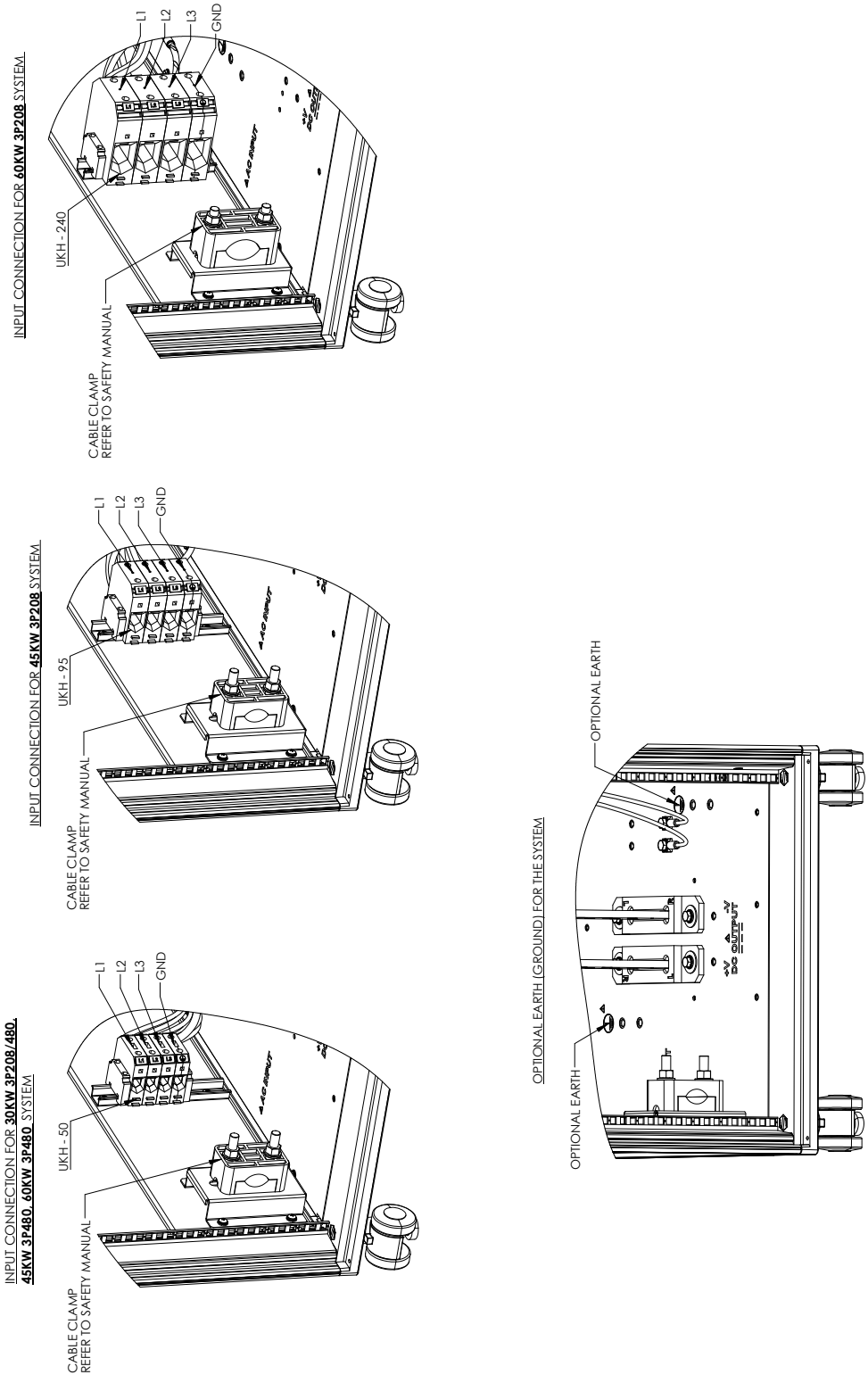


60KW 3P480



Outline Drawing GENESYS™ GSPS Series



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