



# **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





Trusted • Innovative • Reliable

#### TDK-Lambda

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.

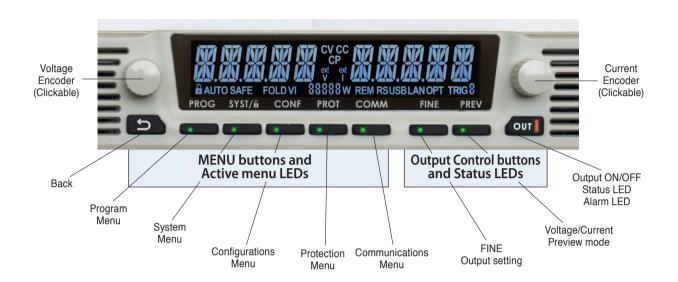
- Test & Measurement systems
- Component Device Testing
- Industrial Automation and process control
- · Semiconductor Processing & Burn-In
- Aerospace & Satellite Testing
- Automotive Component & HIL Testing
- Medical Imaging
- · Magnets, RF Magnifiers and Beam Steering
- Green Technology
- **Higher 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.



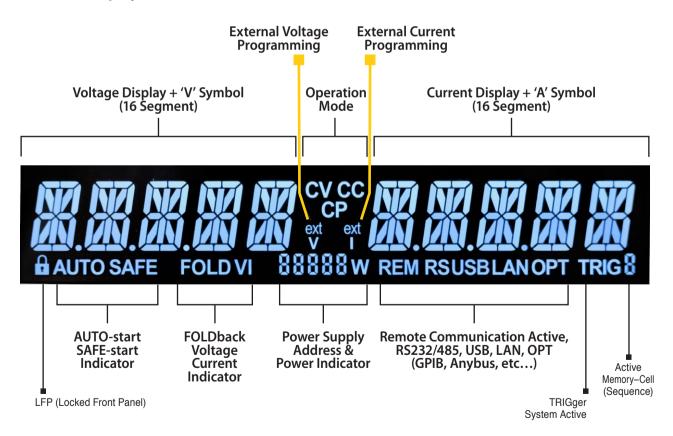




#### **Front Panel Display MENU/CONTROL buttons:**



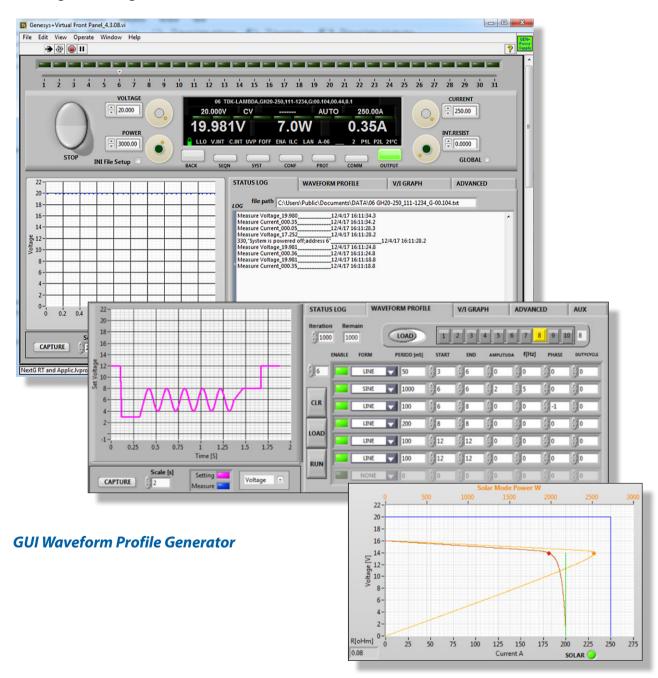
#### **Front Panel Display indicators**



#### **Graphical User Interface**

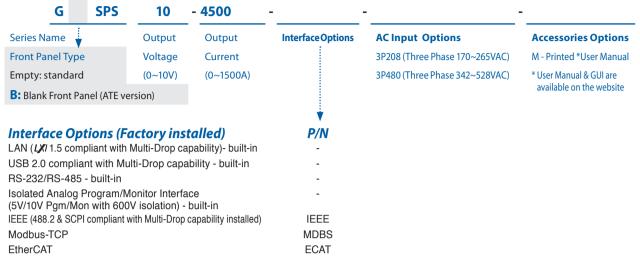
Advanced "Virtual Front Panel" allows programming and monitoring unit(s) with or without front panel display.

- 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



### TDK-Lambda

### How to order GSPS Series - Configurable High Power System



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.

	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
V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
Α	4500 (*3)	3000	2040	1500	1200	1020	780	600	408	300	204	156	120	102
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
V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
	3-Phase,													
			. rated out	out power.										
%		37	88	. 8	9					90				
V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
	0.01% of													
	0.01% of	.01% of rated output voltage +5mV.												
	50PPM/O													
	0.01% of	.01% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temperature.												
	Less than	ess than 0.05% of rated output voltage +2mV over 30 minutes following power on.												
V	2	2	5	5	5	5	5	5	5	5	5	5	5	5
mS	30	30	30	30	50	50	50	50	50	50	50	100	100	100
m <sup>C</sup>	50	50	80	80	80	80	100	100	100	100	100	150	200	200
IIIO	300	600	800	900	950	1000	1200	1900	2000	2500	3000	4000	4000	3000
-	Output se	utput set point: 10~100%, Local sense.												
V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
	0.05% of	0.05% of rated output current.												
	10V~100V models: 100PPM/OC from rated output current, following 30 minutes warm-up.													
	150V~600V models: 70PPM/ <sup>O</sup> C from rated output current, following 30 minutes warm-up.													
	0.01% of	rated lout	over 8hrs. i	interval follo	owing 30 n	ninutes war	m-up. Con	stant line, l	oad & temp	oerature.				
	150V ~ 600V models: Less than +7-0.25% of rated output current over 30 minutes following power on: 150V ~ 600V models: Less than +7-0.15% of rated output current over 30 minutes following power on:													
	A KW V V % V V MS MS V V V V	V 10 A 4500 (*3) kW 45.0 V 10	V 10 20 A 4500 (*3) 3000 KW 45.0 60.0 V 10 20	V 10 20 30 A 4500(*3) 3000 2040 KW 45.0 60.0 61.2 V 10 20 30	V   10   20   30   40     A   4500(*3)   3000   2040   1500     KW   45.0   60.0   61.2   60.0     V   10   20   30   40     3-Phase, 200V models: 170-265Vac, 47-3-Phase, 480V models: 342-528Vac, 47-210     212A @ 200Vac.   212A @ 200Vac.     110.4A @ 380Vac.   7   88   8   8     V   10   20   30   40       0.91% of rated output voltage.       0.01% of rated output voltage +5mV.       50PPM°C from rated output voltage, folloon       10.01% of rated volt over 8hrs interval folication       10.01% of rated volt over 8hrs interval folication       2   2   5   5     mS   30   30   30   30     mS   50   50   80   80     300   600   800   900     Time for output voltage to recover within 0       0.01% of rated output voltage to recover within 0       0.01% of rated voltage to recover within 0       0.01% of rated output voltage to recover within 0       0.01% of rated output current.       0.05% of rated output current.       0.08% of rated output current.       0.09% of rated output current.       0.01% of rated output current.	V         10         20         30         40         50           A         4500 (*3)         3000         2040         1500         1200           kW         45.0         60.0         61.2         60.0         60.0           V         10         20         30         40         50           3-Phase, 480V models: 342-528Vac, 47-63Hz (Cov.)         3-Phase, 480V models: 342-528Vac, 47-63Hz (Cov.)         212A @ 200Vac.           110.4A @ 380Vac.         30         40         50           87         88         89           V         10         20         30         40         50	V         10         20         30         40         50         60           A         4500 (*3)         3000         2040         1500         1200         1020           KW         45.0         60.0         61.2         60.0         60.0         61.2           V         10         20         30         40         50         60           3-Phase, 200V models: 170~265Vac, 47~63Hz (Covers 200/23         3-Phase, 480V models: 342~528Vac, 47~63Hz (Covers 380/40           212A @ 200Vac.         110.4A @ 380Vac.         212A @ 200Vac.           110.4A @ 380Vac.         30.94 @ 200/380Vac, rated output power.           %         87         88         89           V         10         20         30         40         50         60	V         10         20         30         40         50         60         80           A         4500(*3)         3000         2040         1500         1200         1920         780           kW         45.0         60.0         61.2         60.0         60.0         61.2         62.4           V         10         20         30         40         50         60         80           3-Phase, 480V models: 342~528Vac, 47~63Hz (Covers 200/230Vac).         3-Phase, 480V models: 342~528Vac, 47~63Hz (Covers 380/400/415/440).           212A @ 200Vac.         110.4 @ 380Vac.         212A @ 200Vac.           110.4 A @ 380Vac.         38         89           V         10         20         30         40         50         60         80	V         10         20         30         40         50         60         80         100           A         4500(*3)         3000         2040         1500         1200         1020         780         600           KW         45.0         60.0         61.2         60.0         60.0         61.2         62.4         60.0           V         10         20         30         40         50         60         80         100           3-Phase, 480V models: 170-265Vac, 47~63Hz (Covers 200/230Vac).         3-Phase, 480V models: 342-528Vac, 47~63Hz (Covers 380/400/415/440/460/480Vz).           212A@ 200Vac.         110.4A@ 380Vac.         110.4A@ 380Vac.         30         40         50         60         80         100           ****         10.4A@ 380Vac.         88         89         89         ***         V         10         20         30         40         50         60         80         100           ****         10.1% of rated output voltage, 5mV.         ****         50PPM/°C from rated output voltage, 5mV.         ****         50PPM/°C from rated output voltage, 5mV.         ****         ****         ****         50PS         50         50         50         50         50         50 <td>V         10         20         30         40         50         60         80         100         150           A         4500 (*3)         3000         2040         1500         1200         1020         780         600         408           kW         45.0         60.0         61.2         60.0         61.2         62.4         60.0         61.2           V         10         20         30         40         50         60         80         100         150           3-Phase, 480V models: 342-528Vac, 47-63Hz (Covers 380/400/415/440/460/480Vac).         3-Phase, 480V models: 342-528Vac, 47-63Hz (Covers 380/400/415/440/460/480Vac).         212A @ 200Vac.         212A @ 200Vac.         110.4A @ 380Vac.         38         89         V         10         20         30         40         50         60         80         100         150          </td> <td>V         10         20         30         40         50         60         80         100         150         200           A         4500(*3)         3000         2040         1500         1200         1920         780         600         408         300           KW         45.0         60.0         61.2         60.0         60.0         61.2         62.4         60.0         61.2         60.0           V         10         20         30         40         50         60         80         100         150         200           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).         212A@         200Vac.         110.4A @ 380Vac.         212A@         200Vac.         110.4A @ 380Vac.         212A@         200Vac.         110.4A @ 380Vac.         30         40         50         60         80         100         150         200         150         200         30         40         50         60         80         100         150         200         30         40         50         60         80         100         150         200         30         40         50         60</td> <td>V         10         20         30         40         50         60         80         100         150         200         300           A         4500(*3)         3000         2040         1500         1200         1020         780         600         408         300         204           KW         45.0         60.0         61.2         60.0         60.0         61.2         62.4         60.0         61.2         60.0         61.2           V         10         20         30         40         50         60         80         100         150         200         300           3-Phase, 480V models: 170-265Vac, 47~63Hz (Covers 200/230Vac).         3-Phase, 480V models: 342-528Vac, 47~63Hz (Covers 380/400/415/440/460/480Vac).         212A@ 200Vac.         110.4A@ 380Vac.         212A@ 200Vac         110.4A@ 380Vac.         30.4         89         90         90         300<td>V         10         20         30         40         50         60         80         100         150         200         300         400           A         4500(*3)         3000         2040         1500         1200         1020         780         600         408         300         204         156           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           V         10         20         30         40         50         60         80         100         150         200         300         400           3-Phase, 480V models: 342-528Vac, 47-63Hz (Covers 380/400/415/440/460/480Vac).         212A @ 200Vac.         212A @ 200Vac.         110.4A @ 380Vac.         212A @ 200Vac.         30         40         50         60         80         100         150         200         300         400          </td><td>V         10         20         30         40         50         60         80         100         150         200         300         400         500           A         4500(*3)         3000         2040         1500         1200         1020         780         600         408         300         204         156         120           KW         45.0         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         400         5</td></td>	V         10         20         30         40         50         60         80         100         150           A         4500 (*3)         3000         2040         1500         1200         1020         780         600         408           kW         45.0         60.0         61.2         60.0         61.2         62.4         60.0         61.2           V         10         20         30         40         50         60         80         100         150           3-Phase, 480V models: 342-528Vac, 47-63Hz (Covers 380/400/415/440/460/480Vac).         3-Phase, 480V models: 342-528Vac, 47-63Hz (Covers 380/400/415/440/460/480Vac).         212A @ 200Vac.         212A @ 200Vac.         110.4A @ 380Vac.         38         89         V         10         20         30         40         50         60         80         100         150	V         10         20         30         40         50         60         80         100         150         200           A         4500(*3)         3000         2040         1500         1200         1920         780         600         408         300           KW         45.0         60.0         61.2         60.0         60.0         61.2         62.4         60.0         61.2         60.0           V         10         20         30         40         50         60         80         100         150         200           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).         212A@         200Vac.         110.4A @ 380Vac.         212A@         200Vac.         110.4A @ 380Vac.         212A@         200Vac.         110.4A @ 380Vac.         30         40         50         60         80         100         150         200         150         200         30         40         50         60         80         100         150         200         30         40         50         60         80         100         150         200         30         40         50         60	V         10         20         30         40         50         60         80         100         150         200         300           A         4500(*3)         3000         2040         1500         1200         1020         780         600         408         300         204           KW         45.0         60.0         61.2         60.0         60.0         61.2         62.4         60.0         61.2         60.0         61.2           V         10         20         30         40         50         60         80         100         150         200         300           3-Phase, 480V models: 170-265Vac, 47~63Hz (Covers 200/230Vac).         3-Phase, 480V models: 342-528Vac, 47~63Hz (Covers 380/400/415/440/460/480Vac).         212A@ 200Vac.         110.4A@ 380Vac.         212A@ 200Vac         110.4A@ 380Vac.         30.4         89         90         90         300 <td>V         10         20         30         40         50         60         80         100         150         200         300         400           A         4500(*3)         3000         2040         1500         1200         1020         780         600         408         300         204         156           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           V         10         20         30         40         50         60         80         100         150         200         300         400           3-Phase, 480V models: 342-528Vac, 47-63Hz (Covers 380/400/415/440/460/480Vac).         212A @ 200Vac.         212A @ 200Vac.         110.4A @ 380Vac.         212A @ 200Vac.         30         40         50         60         80         100         150         200         300         400          </td> <td>V         10         20         30         40         50         60         80         100         150         200         300         400         500           A         4500(*3)         3000         2040         1500         1200         1020         780         600         408         300         204         156         120           KW         45.0         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         400         5</td>	V         10         20         30         40         50         60         80         100         150         200         300         400           A         4500(*3)         3000         2040         1500         1200         1020         780         600         408         300         204         156           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           V         10         20         30         40         50         60         80         100         150         200         300         400           3-Phase, 480V models: 342-528Vac, 47-63Hz (Covers 380/400/415/440/460/480Vac).         212A @ 200Vac.         212A @ 200Vac.         110.4A @ 380Vac.         212A @ 200Vac.         30         40         50         60         80         100         150         200         300         400	V         10         20         30         40         50         60         80         100         150         200         300         400         500           A         4500(*3)         3000         2040         1500         1200         1020         780         600         408         300         204         156         120           KW         45.0         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         61.2         60.0         400         5

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

#### 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

Parallel operation     Constant power control	Consult with manufacturer. 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.Siew 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 (03B, I	rit, HOZOZ	oo, option	u. ( .e/ (	iii) iiitoila	-										
	V	10									600				
1.Vout programming accuracy (*13)		0.05% of ra	ted output	voltage.											
2.lout programming accuracy (*12)		0.3% of rat	ed output o	current.											
3.Vout programming resolution		0.002% of													
4.lout programming resolution		0.002% of	rated outpu	ut current.											
5.Vout readback accuracy			6 of rated output voltage.												
6.lout readback accuracy (*12)		0.2% of rat													
7.Vout readback resolution	% of rated	0.2 70 OI IUI	ou output t	Juli Ont.		ı	1	Ι	ı	1			I	I	Г
7. Voit readback resolution	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.lout 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 shu Reset by A												le. User pre	esetable.
2.Over-voltage protection (OVP)		Output shu													
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
Over-voltage programming accuracy		+/-1% of ra	ted output	voltage											
5.Output under voltage limit (UVL)		Prevents fr	om adjustii	ng Vout be	low limit. D	oes not ap	ply in anal	log prograi	nming. Pre	set by fron	t panel or	communica	ation port.		
6.Over temperature protection				-				-	-	-					
7.Output under voltage protection (UVP)		Prevents a	uts down the output. Auto recovery by autostart mode.  vents adjustment of Vout below limit. P.S output turns Off during under voltage condition. set 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 op	tions with '	2 Encoder											
1.Control functions		Vout/lout/P													
	<del></del>				ijust.										
		OVP/UVL/UVP manual adjust.  Protection Functions - OVP, UVL, UVP, Foldback, OCL, ENA, ILC.													
		Communication Functions - Selection of Baud Rate, Address, IP and communication language.													
		Analog Control Functions - Selection Voltage/resistive programming 5V/10V, 5ΚΩ/10ΚΩ programming.													
			nalog Monitor Functions - Selection of Voltage/Current Monitoring 5V/10V.												
2.Display			/out: 4 digits, accuracy: 0.05% of rated output voltage +/-1 count.												
			out: 4 digits, accuracy: 0.2% of rated output current +/-1 count.												
3.Front Panel Buttons Indications			DUTPUT ON, ALARM, PREVIEW, FINE, COMMUNICATION, PROTECTION CONFIGURATION SYSTEM, SEQUENCER.												
4.Front Panel Display Indications		(communic	/oltage, 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 su	he 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															
10	Т	0 5000 11	200/ 1 1												1
1.Operating temperature (*3)		0~50°C, 10	JU% load.												
2.Storage temperature		-25~65°C.													
3.Operating humidity			90% RH (no condensation).												
4.Storage humidity			95% RH (no condensation).												
5.Altitude (*14)			Operating: 10000ft (3000m), output current derating 2%/100m or Ta derating 1°C/100m above 2000m. Ion-operating: 40000ft (12000m).												
MECHANICAL	-	-													
1.Cooling		Forced air	cooling by	power sup	ply interna	l fans. Airfl	ow direction	n: From ca	abinet front	panel to re	ear.				
2.Weight	Kg	Less than 2	_ ,												
3.Dimensions (WxHxD)	mm	W: 553, H:		n Castors:	Without ca	srors cabir	net hight is	947). D: 9	02.						
4. Vibration (Package transportation)		ISTA 1H: 2						,, = . 0							
5.Shock & Drop (Package transportation)		ISTA 1H: 2						on edae d	op test: AS	TM D6179	Rotationa	l drop.			
SAFETY/EMC			,			,56	,	.g. u.	,			100			J
1.Safety standards		IFC 61010	-1·2010 IF	C 61010-1	·2010/AM	D1·2016									
1.1.Interface classification		Vout≤50V					I8 (sense)	& .19 (com	munication	ontions) a	re Non Ha	rardous			
													are Non Ha	zardous	
1.2.Withstand voltage		Vout≤50V												Laradus.	
	I	Input - Gro			(30	,, 01, 0	_, 55, 67, 6	, ,	50 (5011111		- p.1.0/1. 42		,		
		60V≤Vout≤ Output & J Input - Gro	100V Mod 8 (sense) -	lels: Input - · J1, J2, J3										00VDC 1mi	n,
		100V <vou< td=""><td>t≤600V Mo 8 (sense) -</td><td>dels: Input</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>242VDC 1m Ground: 2</td><td>iin, 500VDC 1n</td><td>nin.</td></vou<>	t≤600V Mo 8 (sense) -	dels: Input									242VDC 1m Ground: 2	iin, 500VDC 1n	nin.
2.EMC standards (*15) (*18)	i			strial enviro	nment										

IEC/EN61204-3 Industrial environment

EC/EN61204-3 Industrial environment, Annex H table H.1, FCC Part 15-A, VCCI-A. EC/EN61204-3 Industrial environment, Annex H table H.3 and H.4, FCC Part 15-A, VCCI-A.

2.EMC standards (\*15) (\*18)

2.1.Conducted emission (\*18) 2.2.Radiated emission (\*18)

#### 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)	Α		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 mod	els: 170~26	65Vac, 47~	63Hz (Cov	ers 200/23	0Vac).							•
		3-Phase,	480V mod	els: 342~52	28Vac, 47~	63Hz (Cov	ers 380/40	0/415/440	/460/480Va	ac).					
Maximum Input 3-Phase, 200V models:		160A @ 2	200Vac.			,									
current at 100% load 3-Phase, 480V models:		84.3A @	A @ 380Vac.												
3.Power Factor (Typ.)		0.94 @ 20	00/380Vac	, rated outp	out power.										
4.Efficiency (minimum) (*4)	%	8	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 outp	ut voltage.											
2.Max. Load regulation (*6)		0.01% of	.01% of rated output voltage +5mV.												
3.Temperature coefficient		50PPM/ <sup>O</sup>	50PPM/ <sup>©</sup> C from rated output voltage, following 30 minutes warm-up.												
4.Temperature stability		0.01% of	.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 outpu	ıt 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. Full load (*8)	mS		50	80	80	80	80	100	100	100	100	100	150	200	200
response time: No load (*9)	IIIO		600	800	900	950	1000	1200	1900	2000	2500	3000	4000	4000	3000
9.Transient response time		Output se	ime for output voltage to recover within 0.5% of its rated output for a load change 10–90% of rated output current.  utput set point: 10–100%, Local sense.  ses 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 outp	ut current.	·	<u> </u>									-
2.Max. Load regulation (*10)			rated outp												
3.Temperature coefficient		20V~100	V models:	100PPM/ <sup>0</sup> 0	c from rate	d output cu	rrent, follo	wina 30 mi	nutes warn	n-up.					
·		150V~600V models: 70PPM/°C from rated output current, following 30 minutes warm-up.													
4.Temperature stability										oad & temp	erature.				
5.Warm-up drift										vina power					
,										lowing pow					
ANALOG DROCRAMMING AND MONITORI					, 3.1070										

#### 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.lout voltage programming (*11)		0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.4% of rated lout.
3.Vout resistor programming		0~100%, 0~5/10KΩ full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Vout.
4.lout resistor programming (*11)		0~100%, 0~5/10KΩ full scale, user selectable. Accuracy and linearity: +/-0.5% of rated lout.
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 lout.

#### 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, RS232/4	485, Optional (*14) Interfaces)
PROGRAMMMING AND READBACK (USB, LAN, KS232/4	400, Optional (14) interfaces)

PROGRAMMING AND READBACK (US	B, LAN, RS232/4	485, Option	ıal (*14) İn	terfaces)											
	V		20	30	40	50	60	80	100	150	200	300	400	500	600
.Vout programming accuracy (*12)		0.05% of ra	ated output												
lout programming accuracy (*11)		-													
.Vout programming resolution		-	of rated output current. 2% of rated output voltage.												
1 0 0		-													
Llout programming resolution			2% of rated output current.												
5.Vout readback accuracy			% of rated output voltage.												
6.lout readback accuracy (*11)		0.2% of rat	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
B.lout 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
I.Foldback protection		Output shu Reset by A												le. User pre	esetable
2.Over-voltage protection (OVP)		Output shu	_ '	,		. ,		,		, ,				nunication.	
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
l.Over-voltage programming accuracy	<del></del>	+/-1% of ra						. 30.2							. 00
5.Output under voltage limit (UVL)					low limit F	loge not a	nnly in anal	og progra	mmina Dra	eat hy fron	t nanel er	communic	tion port		
Output under voltage IIIIII (UVL)		r revents in	vents from adjusting Vout below limit. Does not apply in analog programming. Preset by front panel or communication port.												
6.Over temperature protection			ts down the output. Auto recovery by autostart mode.												
7.Output under voltage protection (UVP)			events adjustment of Vout below limit. P.S output turns Off during under voltage condition. set by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by communication.												
FRONT PANEL															
.Control functions		Multiple op	tions with	2 Encoders											
.Control fariotions		Vout/lout/Power Limit manual adjust.													
					ujust.										
		OVP/UVL/U													
						oldback, O									
						AN, RS232	2, RS485, L	JSB or Opt	tional comr	nunication	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, 5ΚΩ/10ΚΩ programming.													
		Analog Mo	nalog Monitor Functions - Selection of Voltage/Current Monitoring 5V/10V.												
2.Display		Vout: 4 digi													
		lout: 4 digit													
B.Front Panel Buttons Indications	-	OUTPUT C						ROTECTI	ON CONE	IGURATIO	N SYSTEM	A SEQUE	NCFR		
				•											
4.Front Panel Display Indications		Voltage, Cu (communic				ernal Volta communica					art, Safetst	art, Foldba	ick V/I, Rer	note	
5.Circuit breaker		The AC sup These CB's						circuit bre	akers for 2	00Vac Inp	ut & 1x40A	+1x80A ci	cuit breake	ers for 380\	/ac Inpu
ENVIRONMENTAL CONDITIONS		THOSE OB	o are acce	JOIDIO OIT II	io ironi pa	nor or the c	abiliot.								
.Operating temperature	T	0~50 <sup>o</sup> C, 10	00% load												
2.Storage temperature	<del></del>	-25~65°C.													
0 1															
3.Operating humidity		20~90% RI													
.Storage humidity			10~95% RH (no condensation).												
Altitude			Operating: 10000ft (3000m), output current derating 2%/100m or Ta derating 1 <sup>o</sup> C/100m above 2000m. Non-operating: 40000ft (12000m).												
MECHANICAL															
I.Cooling		Forced air	cooling by	power sup	ply interna	al fans. Airf	low direction	n: From ca	abinet front	panel to re	ear.				
2.Weight	Kg	Less than '													
	mm	W: 553, H:		Castors:	Without ca	asrors cahi	net hight is	947). D· 9	02.						
B.Dimensions (WxHxD)				. 200.0.0,				,, 0							
			014 Meth	MT2A ·bc	D4728 Ra	ndom vibra	tion test								
B.Dimensions (WxHxD) 4.Vibration (Package transportation) 5.Shock & Drop (Package transportation)		ISTA 1H: 2				ndom vibra D5276 free		on adae di	ron toet: AG	STM D6470	Dotation	ol drop			

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.
	 S0VSVout≤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 <vouts600v &="" (communication="" (sense)="" (sense),="" -="" 1275vdc="" 1min,="" 1min.="" 1min.<="" 2500vdc="" 2835vdc="" 4242vdc="" and="" ground:="" input="" j1,="" j2,="" j3,="" j4,="" j5,="" j6,="" j7="" j8="" j9="" models:="" options):="" output="" td="" –=""></vouts600v>
2.EMC standards (*13) (*15)	 IEC/EN61204-3 Industrial environment
.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.

### TDK-Lambda

#### 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: 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.

- \*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)	Α	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)	-			els: 170~20 els: 342~5					/460/480Va	ıc).					
2.Maximum Input 3-Phase, 200V models: current at 100% load 3-Phase, 480V models:		106.8A @													
3.Power Factor (Typ.)		0.94 @ 2	00/380Vac	, rated outp	out power.										
4.Efficiency (minimum) (*5)	%	8	37	88	8	9					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 outpo	ut voltage.											
2.Max. Load regulation (*7)		0.01% of	% of rated output voltage +5mV.												
3.Temperature coefficient		50PPM/ <sup>O</sup>	PPM/°C from rated output voltage, following 30 minutes warm-up.												
4.Temperature stability		0.01% of	% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temperature.												
5.Warm-up drift		Less than	nan 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. Full load (*9)	mS	50	50	80	80	80	80	100	100	100	100	100	150	200	200
response time: No load (*10)	IIIO	300	600	800	900	950	1000	1200	1900	2000	2500	3000	4000	4000	3000
9.Transient response time		Output se	t point: 10	age to reco ~100%, Lo nodels up t	cal sense.				d change 10 ve 100V.	)~90% of r	ated outpu	t current.			
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 outpo	ut current.											
2.Max. Load regulation (*11)		0.08% of	rated outpo	ut current.											
3.Temperature coefficient		10V~100	V models:	100PPM/ <sup>0</sup> 0	C from rate	d output cu	ırrent, follo	wing 30 mi	nutes warn	n-up.					
·		10V~100V models: 100PPM/ <sup>©</sup> C from rated output current, following 30 minutes warm-up.  150V~600V models: 70PPM/ <sup>©</sup> C from rated output current, following 30 minutes warm-up.													
4.Temperature stability									stant line, l		perature.				
5.Warm-up drift									nutes follov						
									minutes fol						
ANALOG PROGRAMMING AND MONITORI	NG (ISOL A)	•								3					

#### ANALOG PROGRAMMING AND MONITORING (ISOLATED FROM THE OUTPUT)

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

#### 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	1	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, C	Optional (	*16)	(*17	) Interfaces)
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PROGRAMMING AND READBACK (USB, I	V	10	20	30	40	50	60	80	100	150	200	300	400	500	600
1.Vout programming accuracy (*13)			ted output	voltage.											
2.lout programming accuracy (*12)		0.3% of rated output current.													
3.Vout programming resolution			0.002% of rated output voltage.												
4.lout programming resolution			rated outpo												
5.Vout readback accuracy 6.lout readback accuracy (*12)			ted output												
7.Vout readback accuracy (*12)	% of rated	∪.∠% oi rat	of rated output current.										1		
r. vour reauback resolutiOII	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.lout 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			utput 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 presetab eset by AC input recycle in autostart mode, by Power Switch, by OUTPUT button, by rear panel or by communication. utput shut-down. 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 shu	t-down. Re	set by AC	input recyc	de in autos	tart mode,	by Power	Switch, by	OUTPUT	button, by	rear panel	or by comn	nunication.	
3.Over -voltage programming range	V	0.5~12													5~661.5
4.Over-voltage programming accuracy			3-12   1-24   2-36   2-44.1   3-55.125   3-66.15   3-66.2   3-110.25   3-165.37   3-220.5   3-550.75   3-441   3-551.25   3-661.3   3-66												
5.Output under voltage limit (UVL)		Prevents fr			low limit. D	oes not ap	ply in anal	og prograr	nming. Pre	set by fron	t panel or	communica	ation port.		
6.Over temperature protection		Shuts down		-				2. U			-				
7.Output under voltage protection (UVP)		Prevents a						ring under	voltage co	ndition.					
		Reset by A									el or by co	mmunicatio	on.		
FRONT PANEL	1	ha. dec. 1	e	) F '											
1.Control functions		Multiple op													
		Vout/Iout/P OVP/UVL/I			ıjust.										
					UVP Fo	ldhack Of	I FNA II	С							
		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.													
				tions - Sele		aud Rate.	Address, IF	and com	nunication	language.					
				ions - Sele						KΩ progra	mming.				
		Analog Mo	nalog Monitor Functions - Selection of Voltage/Current Monitoring 5V/10V.												
2.Display		/out: 4 digits, accuracy: 0.05% of rated output voltage +/-1 count.													
2 Front Donal Dutton a la " "			lout: 4 digits, accuracy: 0.2% of rated output current +/-1 count.  OUTPUT ON, ALARM, PREVIEW, FINE, COMMUNICATION, PROTECTION CONFIGURATION SYSTEM, SEQUENCER.												
3.Front Panel Buttons Indications															
4.Front Panel Display Indications		(communic	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 <sup>o</sup> C, 10	00% load												
2.Storage temperature		-25~65°C.													
3.Operating humidity		20~90% RI	H (no cond	lensation)											
4.Storage humidity		10~95% RI	`												
5.Altitude (*14)		Operating:	10000ft (3			t derating 2	!%/100m o	r Ta derati	ng 1 <sup>o</sup> C/100	0m above	2000m.				
MECHANICAL		<u> </u>	-	•											
1.Cooling		Forced air	cooling by	power sup	ply interna	I fans Airfl	ow direction	n: From ca	binet front	panel to re	ear.				
2.Weight	Kg	Less than		_ 551 5up	r.,					- a					
3.Dimensions (WxHxD)	mm	W: 553, H:		n Castors;	Without ca	srors cabir	et hight is	947), D: 9	02.						
4. Vibration (Package transportation)		ISTA 1H: 2	044 14 11	LAOTAL	0.4700 D										
5.Shock & Drop (Package transportation)		ISTA 1H: 2						on edge dı	op test: AS	STM D6179	9 Rotationa	ıl drop.			
SAFETY/EMC															
1.Safety standards		IEC 61010	-1:2010, IE	C 61010-1	:2010/AMI	D1:2016									
1.1.Interface classification		Vout≤50V					J8 (sense)	& J9 (com	munication	options) a	re Non Ha	zardous.			
													are Non Ha	zardous.	
1.2.Withstand voltage		Vout≤50V Input - Gro			ut & J8 (se	nse), J1, J	2, J3, J4, J	15, J6, J7 8	J9 (comm	unication	options): 42	242VDC 1r	nin,		
		60V≤Vout≤ Output & J	100V Mod 8 (sense)	lels: Input - · J1, J2, J3	, J4, J5, J6								/DC 1min, Ground: 150	00VDC 1mi	n,
			t≤600V Mo	dels: Input	- Output								42VDC 1m Ground: 25		nin.
		Input - Gro	und: 2835	VDC 1min.		,			-						
2.EMC standards (*15) (*18)				strial enviro		111111	114 =6		1,00:						
2.1.Conducted emission (*18)				strial enviro						VCCI *					
2.2.Radiated emission (*18)		IEC/EN612	204-3 Indu	sırıaı enviro	niment, Ar	inex H tabl	e H.3 and	п.4, FCC I	'ап 15-А, \	vuul-A.					

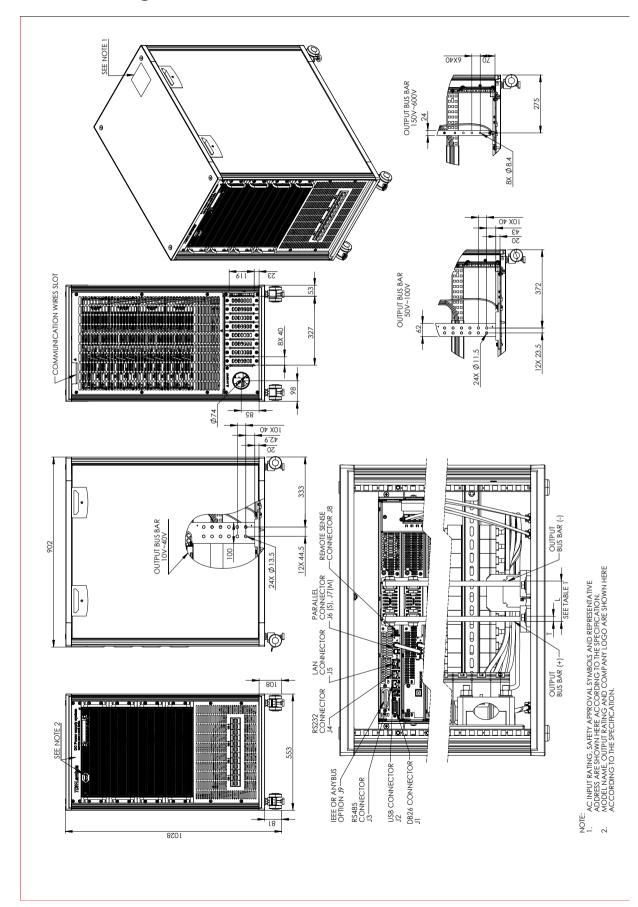
#### NOTES:

- \*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 4: For cases where conformance to various safety standards (IEC, etc...) is required, to be described as 190-240Vac 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.

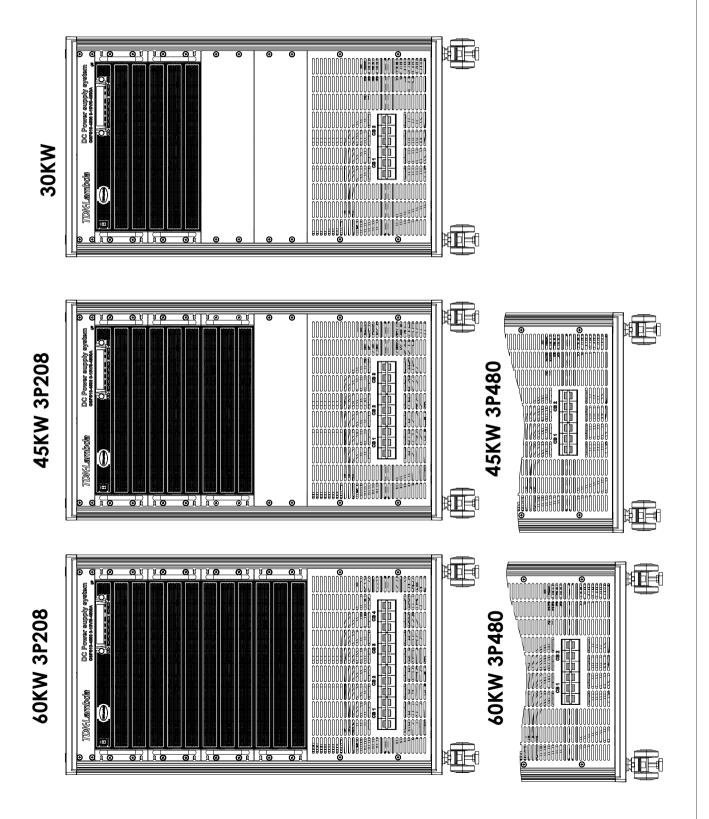
- \*8: The maximum voltage on the power supply terminals must not exceed the rated voltage.
  \*9: From 10% to 90% of Rated Output Voltage at rated resistive load.
  \*10: From 90% to 10% of Rated Output Voltage.

- \*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.

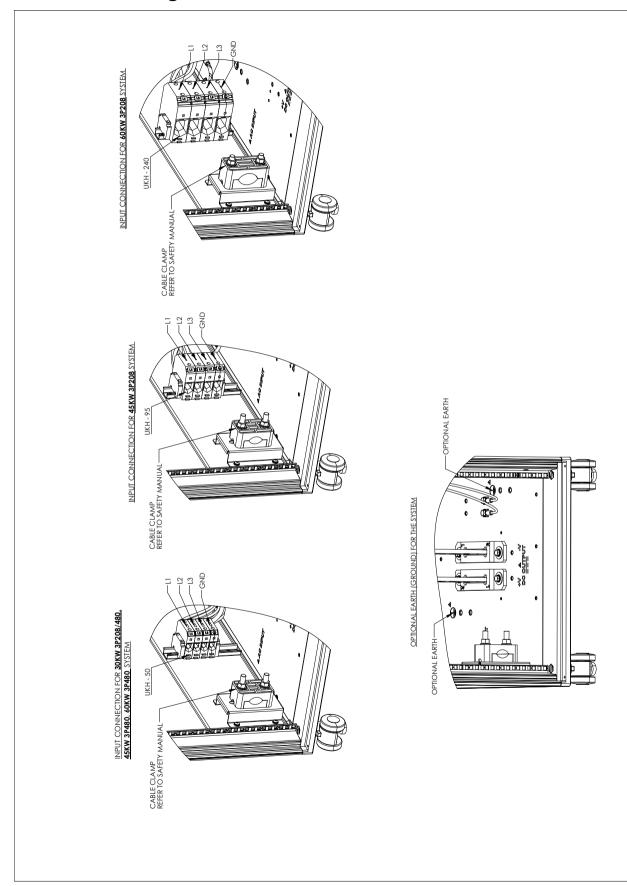
## Outline Drawing **GENESYS™** GSPS Series



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