

**NEW**



# **+GENESYS<sup>TM</sup> G Series**

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

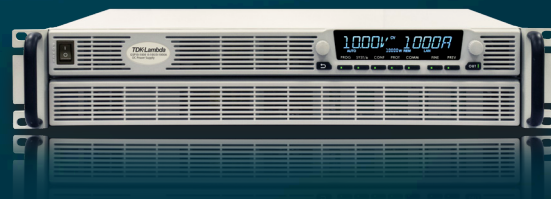
## **! Advanced Features Built-In !**

- **Arbitrary Waveform Generator with Auto-Trigger Capability**
  - **Programmable Slew Rate Control (Vout/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™** family of programmable power supplies sets a new standard for flexible, reliable, AC/DC power systems in OEM, Industrial and Laboratory applications.

### **Features include:**

- Leading DC Programmable power density (5kW in 1U height, 10kW/15kW in 2U/3U height) in 19" rack-mount
- Light-weight 5kW<7.5 kg, GSP 10kW<15.5 kg, 15kW<23.5 kg
- Wide Range of popular worldwide AC inputs:  
 G1kW/1.7kW: 1Ø (85~265VAC)  
 G2.7kW / G3.4kW: 1Ø (170~265VAC), 3Ø (208VAC, 400VAC)  
 G5kW / GSP10kW / 15kW: 3Ø (208VAC, 400VAC & 480VAC), Wide-range 3Ø 480VAC (342VAC ~ 528VAC)
- Active PFC (0.94 typical)
- Output Voltage up to 600V, Current up to 1500A
- Built-in LAN (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 10kW and 15kW
- Parallel Systems (up to 60kW) with Auto-Configure
- Worldwide Safety Agency approvals
- CE Mark for Low Voltage, EMC and RoHS3 Directives
- Five year warranty

### **Applications**

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

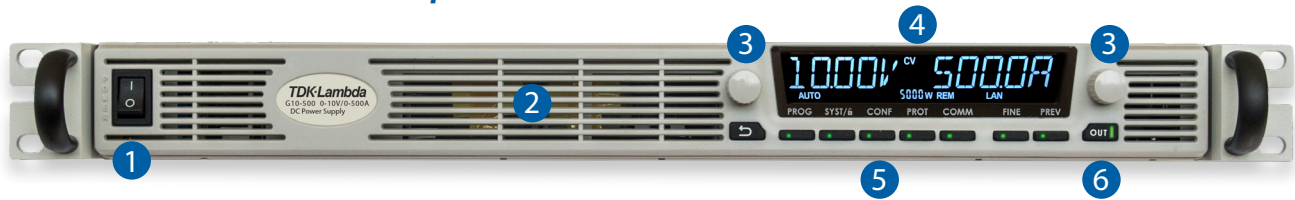
**Test & Measurement systems, Component Device Testing, Manufacturing and process control.**

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

**Higher power systems** can be configured with up to twelve (12) 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.

## G1kW-5kW Front Panel Description



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

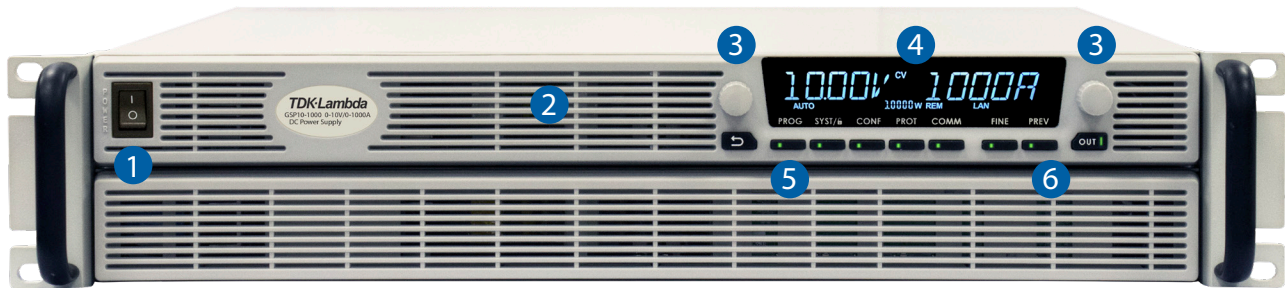
## G1kW-5kW Rear Panel Description



1. Isolated Analog Programming, Monitoring and other control connector (DB26 Female)
2. USB Interface connector (Type B).
3. RS-232/RS-485 IN/OUT Remote Digital Interface (RJ-45 type) for Multi-Drop connection
4. LAN (LXI 1.5) Interface connector (RJ-45 type with LAN status indicators).
5. Auto paralleling Bus connectors (mini I/O type) for connecting Master Unit-to-Slave and Slave Unit-to-Slave unit.
6. Remote/Local Output Voltage Sense Connections (spring cage).
7. Output Connections: Rugged busbars (shown) for models up to and including 100V Output;  
Plug connector: PHOENIX CONTACT IPC 5/4-STF-7.62 for models with Outputs >100V.
8. G2.7kW / G3.4kW / G5kW AC Input: 208VAC, 400VAC & 480VAC, Three Phase, 50/60 Hz. (Model shown)  
AC Input Plug Connector: PHOENIX CONTACT Power Combicon PC 5/4-STCL1-7.62 Series with strain relief.  
G1.7kW / G2.7kW / G3.4kW AC Input Single Phase, 50/60 Hz.  
AC Input Plug Connector: PHOENIX CONTACT Power Combicon PC 5/3-STCL1-7.62 Series with strain relief.  
G1kW AC Input Connector: IEC320 C16.
9. Optional Interface Position for IEEE 488.2 SCPI or AnyBus Interface.
10. Exhaust air assures reliable operation when units are zero stacked.
11. Functional Ground connection (M4x8mm stud).
12. Reset button. Set default Power Supply settings.

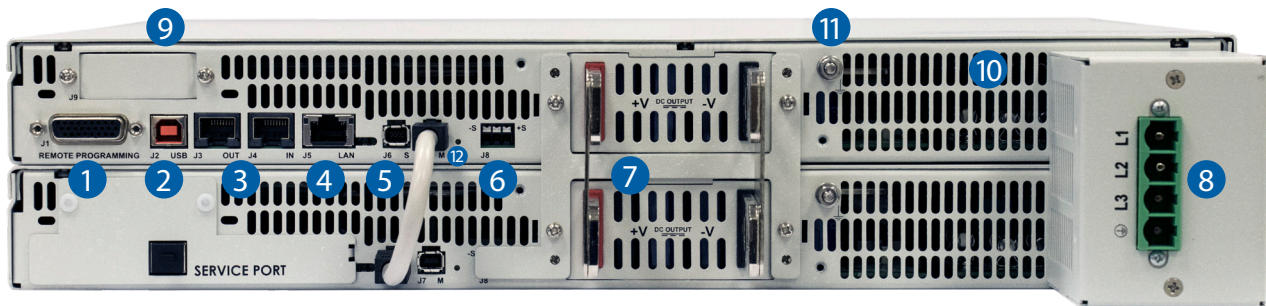


### GSP10kW Front Panel Description



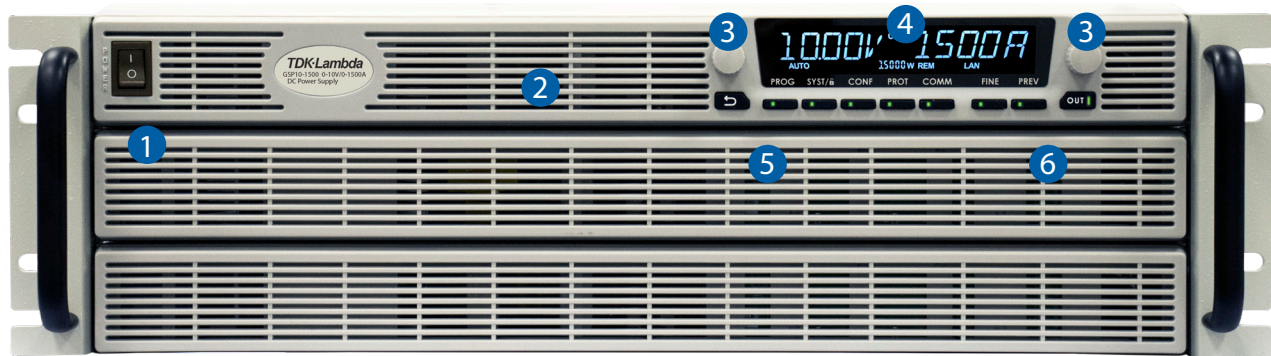
1. Input Power ON/OFF Switch
2. Air Intake allows zero stacking for maximum system flexibility and power density.
3. Reliable Detent Encoders for settings and Menu navigation.
4. High Contrast/Brightness display with wide viewing angle, 16 segment LCD
5. Function/Status LEDs: Active modes and function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

### GSP10kW Rear Panel Description



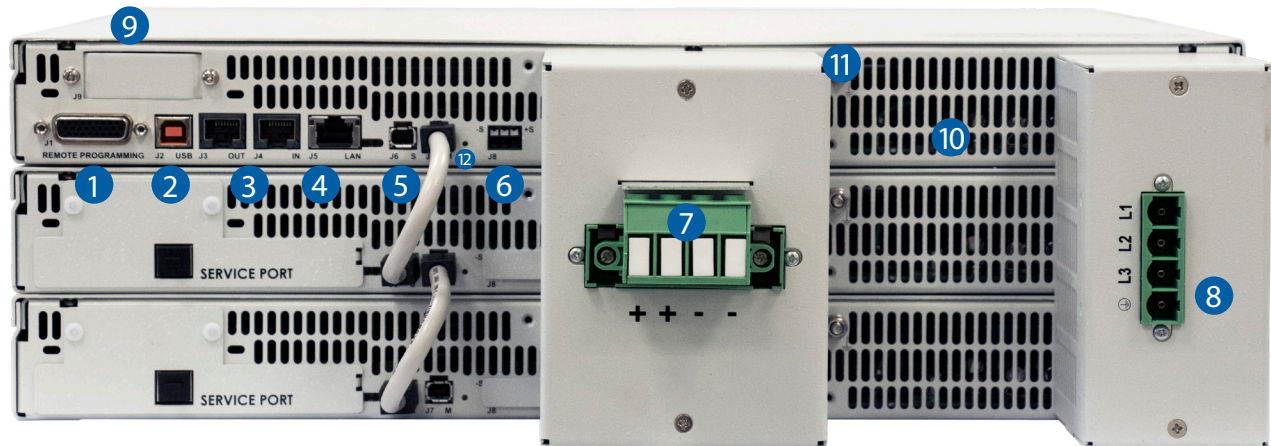
1. Isolated Analog Programming, Monitoring and other control connector (DB26 Female)
2. USB Interface connector (Type B).
3. RS-232/RS-485 IN/OUT Remote Digital Interface (RJ-45 type) for Multi-Drop connection
4. LAN (**LXI** 1.5) Interface connector (RJ-45 type with LAN status indicators).
5. Auto paralleling Bus connectors (mini I/O type) for connecting Master unit-to-Slave and Slave unit-to-Slave unit.
6. Remote/Local Output Voltage Sense Connections (spring cage).
7. Output Connections: Rugged busbars (shown) for models up to and including 100V Output; Plug connector: PHOENIX CONTACT DFK-IPC 16/4-STF-10.16 for models with Outputs >100V.
8. Input: 208VAC, 400VAC & 480VAC Three Phase, 50/60 Hz.  
AC Input Plug Connector: PHOENIX CONTACT DFK-IPC 16/4-STF-10.16 with strain relief.
9. Optional Interface Position for IEEE 488.2 SCPI or AnyBus Interface.
10. Exhaust air assures reliable operation when zero stacked.
11. Functional Ground connection (M4x8mm stud).
12. Reset button. Set default Power Supply settings.

## GSP15kW Front Panel Description



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

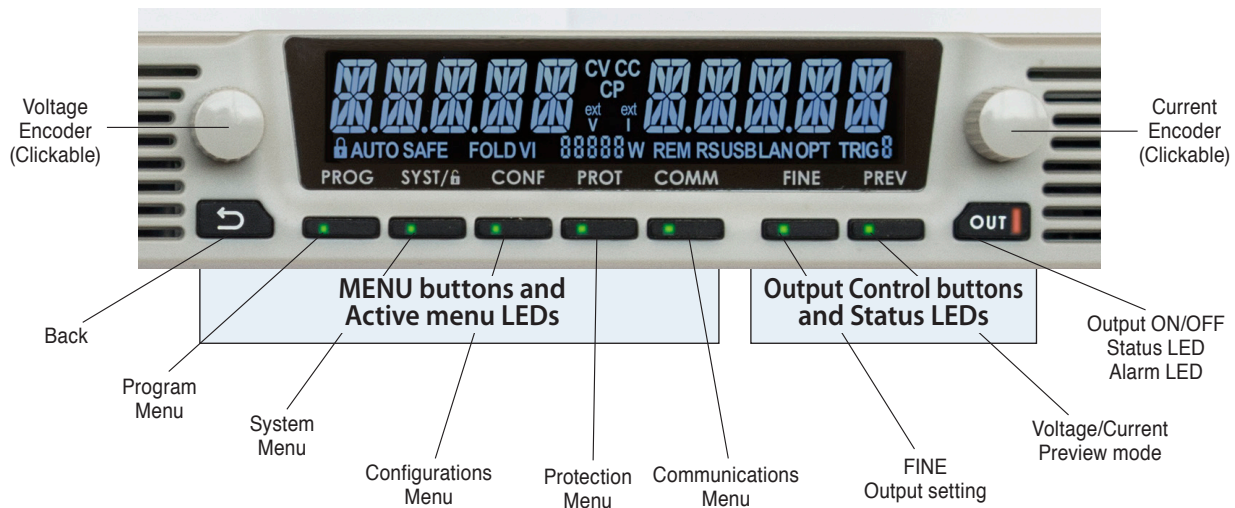
## GSP15kW Rear Panel Description



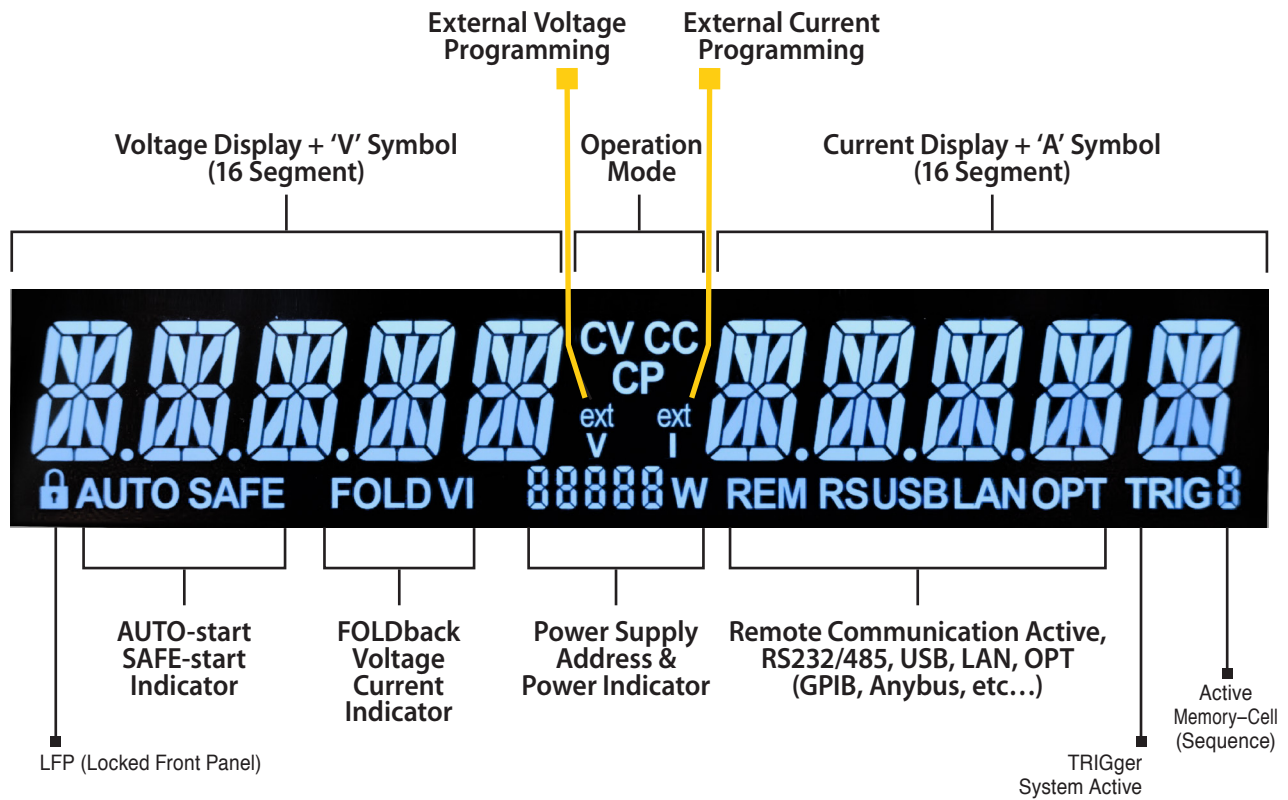
1. Isolated Analog Programming, Monitoring and other control connector (DB26 Female)
2. USB Interface connector (Type B).
3. RS-232/RS-485 IN/OUT Remote Digital Interface (RJ-45 type) for Multi-Drop connection
4. LAN (LXI 1.5) Interface connector (RJ-45 type with LAN status indicators).
5. Auto paralleling Bus connectors (mini I/O type) for connecting Master unit-to-Slave and Slave unit-to-Slave unit.
6. Remote/Local Output Voltage Sense Connections (spring cage).
7. Output Connections: Rugged busbars for models up to and including 100V Output;  
Plug connector: PHOENIX CONTACT DFK-IPC 16/4-STF-10.16 for models with Outputs >100V (shown).
8. Input: 208VAC, 400VAC & 480VAC Three Phase, 50/60 Hz.  
AC Input Plug Connector: PHOENIX CONTACT DFK-PC 16/4-ST-10.16 with strain relief.
9. Optional Interface Position for IEEE 488.2 SCPI or AnyBus Interface.
10. Exhaust air assures reliable operation when zero stacked.
11. Functional Ground connection (M4x8mm stud).
12. Reset button. Set default Power Supply settings.



### Front Panel Display MENU/CONTROL buttons:



### Front Panel Display indicators



## GENESYS™ G&GSP Series Blank Front Panel (ATE version)



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

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

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

## GENESYS™ Parallel and Series Configurations

### Parallel operation - Master/Slave:

Auto paralleling Scalable Master-Slave Operation.

Active current sharing allows up to twelve (12) identical units to be connected

Total real current is programmed measured and reported by the Master. Up to twelve (12) supplies operate as one.

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

Order P/N: G/P - 6U

### Series operation

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

## Multi-Drop Remote Programming via Communication Interface

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

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

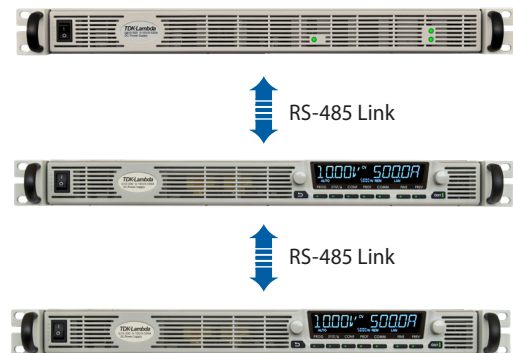


LAN, USB, RS-232, RS-485, IEEE, AnyBus

Standard Unit - zero stacked up to 12 units



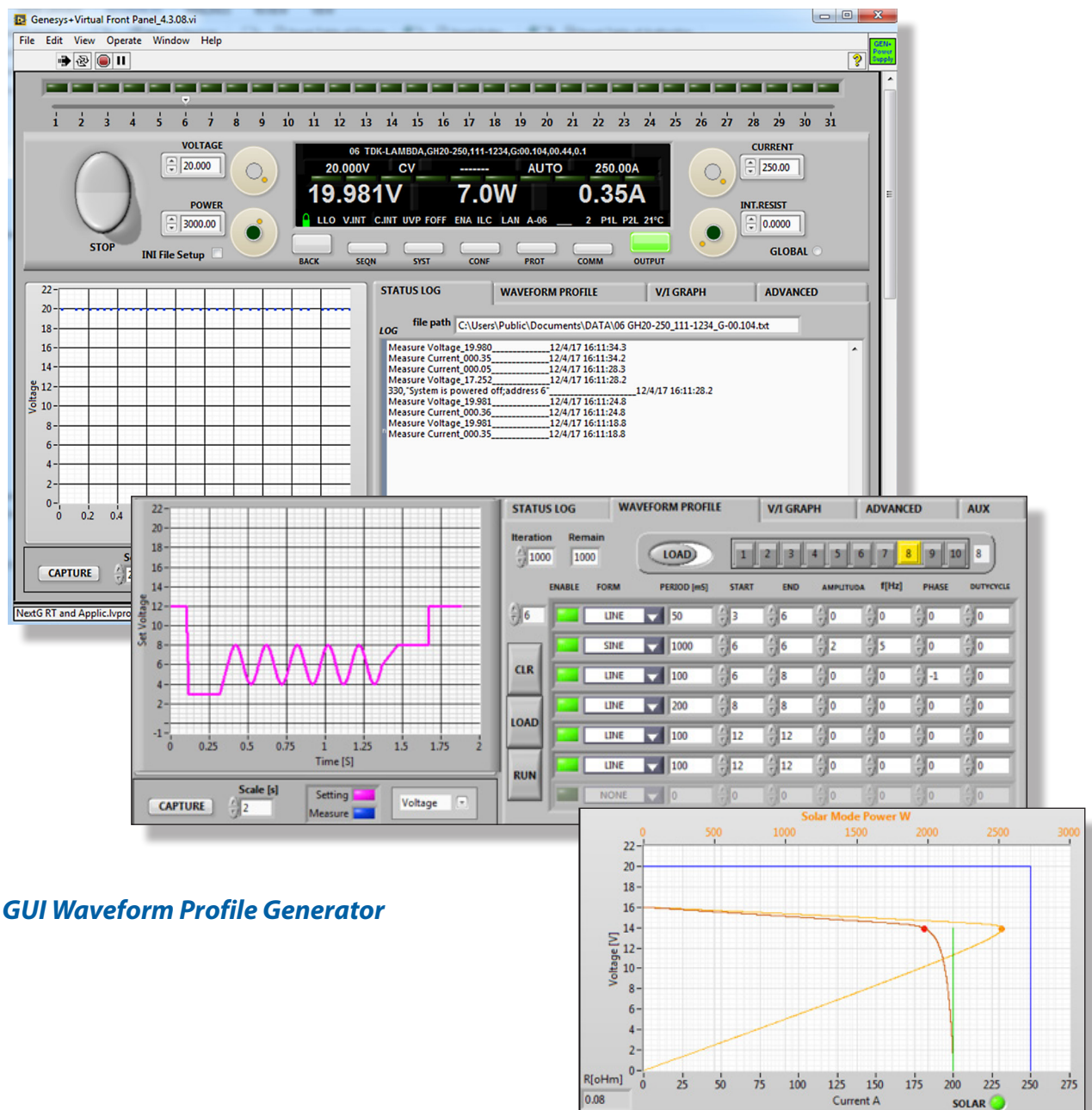
Standard & Blank - zero stacked up to 12 units



## Graphical User Interface

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

1. Control and monitor up-to 31 units with "Address" bar
2. Front panel set-up menu control (PROGram, SYSTem, CONFIguration, PROTection and COMMnication)
3. Informative "Parameters" status bar
4. Individual unit and Global command control
5. Data logging including errors, events and recovery
6. Realtime Graph and Waveform creator, store/load sequence.
7. Solar array mode - calculate MPP (Max Peak Power) for solar array.
8. Registers View: Operation Status, Fault, Event Status, ENABLE and INTERLOCK signals.
9. Remote communication state LOC, REM, LLO.
10. Programmed signals 1&2



## GUI Waveform Profile Generator

## How to order G1kW/1.7kW - Power Supply Identification / Accessories

| G                                  | 10      | 170      | -                 | -                               | -                                                   | - |
|------------------------------------|---------|----------|-------------------|---------------------------------|-----------------------------------------------------|---|
| Series Name                        | Output  | Output   | Interface Options | AC Cord Options<br>only for 1kW | Accessories Options                                 |   |
| Front Panel Type                   | Voltage | Current  |                   | Region: E - Europe              | M - Printed *User Manual                            |   |
| Empty: standard                    | (0~10V) | (0~170A) |                   | U - North America               | * User Manual & GUI are<br>available on the website |   |
| B: Blank Front Panel (ATE version) |         |          |                   | J - Japan                       | P - Bus Parralleling Cable                          |   |
|                                    |         |          |                   | C - China                       |                                                     |   |
|                                    |         |          |                   | I - Middle East                 |                                                     |   |

AC Inputs (All Models)

### AC Inputs (All Models)

1Ø, 85 ~ 265Vac

### Interface Options (Factory installed)

LAN (✓) 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  
 Modbus-TCP  
 EtherCAT

### P/N

-  
 -  
 -  
 -  
 IEEE  
 MDBS  
 ECAT

### Models 1kW

| Model   | Voltage (V) | Current (A) | Power (W) |
|---------|-------------|-------------|-----------|
| G10-100 | 0~10V       | 0~100       | 1000      |
| G20-50  | 0~20V       | 0~50        | 1000      |
| G30-34  | 0~30V       | 0~34        | 1020      |
| G40-25  | 0~40V       | 0~25        | 1000      |
| G60-17  | 0~60V       | 0~17        | 1020      |

| Model    | Voltage (V) | Current (A) | Power (W) |
|----------|-------------|-------------|-----------|
| G80-12.5 | 0~80V       | 0~12.5      | 1000      |
| G100-10  | 0~100V      | 0~10        | 1000      |
| G150-7   | 0~150V      | 0~7         | 1050      |
| G300-3.5 | 0~300V      | 0~3.5       | 1050      |
| G600-1.7 | 0~600V      | 0~1.7       | 1020      |

### Models 1.7kW

| Model   | Voltage (V) | Current (A) | Power (W) |
|---------|-------------|-------------|-----------|
| G10-170 | 0~10V       | 0~170       | 1700      |
| G20-85  | 0~20V       | 0~85        | 1700      |
| G30-56  | 0~30V       | 0~56        | 1680      |
| G40-42  | 0~40V       | 0~42        | 1680      |
| G60-28  | 0~60V       | 0~28        | 1680      |

| Model     | Voltage (V) | Current (A) | Power (W) |
|-----------|-------------|-------------|-----------|
| G80-21    | 0~80V       | 0~21        | 1680      |
| G100-17   | 0~100V      | 0~17        | 1700      |
| G150-11.2 | 0~150V      | 0~11.2      | 1680      |
| G300-5.6  | 0~300V      | 0~5.6       | 1680      |
| G600-2.8  | 0~600V      | 0~2.8       | 1680      |

### Accessories

Accessories will be sent separately from the Power Supply packing, according to order.

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

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

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

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

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

### 3. Bus Paralleling cable

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

### 4. User Manual

| Printed User Manual | G/M |
|---------------------|-----|
|---------------------|-----|



## How to order G2.7kW / 3.4kW - Power Supply Identification / Accessories

| G                                  | 10      | 340      | -                 | -                               | -                                                |
|------------------------------------|---------|----------|-------------------|---------------------------------|--------------------------------------------------|
| Series Name                        | Output  | Output   | Interface Options | AC Input Options                | Accessories Options                              |
| Front Panel Type                   | Voltage | Current  |                   | 1P208 (Single Phase 170~265VAC) | M - Printed *User Manual                         |
| Empty: standard                    | (0~10V) | (0~340A) |                   | 3P208 (Three Phase 170~265VAC)  | * User Manual & GUI are available on the website |
| B: Blank Front Panel (ATE version) |         |          |                   | 3P400 (Three Phase 342~460VAC)  | P - Bus Paralleling Cable                        |
|                                    |         |          |                   | 3P480 (Three Phase 342~528VAC)  |                                                  |
|                                    |         |          | P/N               |                                 |                                                  |
|                                    |         |          | -                 |                                 |                                                  |
|                                    |         |          | -                 |                                 |                                                  |
|                                    |         |          | -                 |                                 |                                                  |
|                                    |         |          | -                 |                                 |                                                  |
|                                    |         |          | IEEE              |                                 |                                                  |
|                                    |         |          | MDBS              |                                 |                                                  |
|                                    |         |          | ECAT              |                                 |                                                  |

### Interface Options (Factory installed)

LAN (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)  
 Modbus-TCP  
 EtherCAT

## Models G2.7kW

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

## Models G3.4kW

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

## Accessories

Accessories will be sent separately from the Power Supply packing, according to order.

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

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

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

Daisy-chain up to 31 GENESYS™ power supplies.

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

3. **Bus Paralleling cable**

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

4. **User Manual**

| Printed User Manual | G/M |
|---------------------|-----|
|---------------------|-----|

## How to order G5kW - Power Supply Identification / Accessories

| G                                         | 10      | 500      |                   |                                |                                                  |
|-------------------------------------------|---------|----------|-------------------|--------------------------------|--------------------------------------------------|
| Series Name                               | Output  | Output   | Interface Options | AC Input Options               | Accessories Options                              |
| Front Panel Type                          | Voltage | Current  |                   | 3P208 (Three Phase 170~265VAC) | M - Printed *User Manual                         |
| Empty: standard                           | (0~10V) | (0~500A) |                   | 3P400 (Three Phase 342~460VAC) | * User Manual & GUI are available on the website |
| <b>B:</b> Blank Front Panel (ATE version) |         |          |                   | 3P480 (Three Phase 342~528VAC) | P - Bus Parralleling Cable                       |

**Interface Options (Factory installed)**

LAN (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)  
 Modbus-TCP  
 EtherCAT

**P/N**

-  
 -  
 -  
 -  
 IEEE  
 MDBS  
 ECAT

### Models 5kW

| Model   | Voltage (VDC) | Current (A) | Power (W) | Model    | Voltage (VDC) | Current (A) | Power (W) |
|---------|---------------|-------------|-----------|----------|---------------|-------------|-----------|
| G10-500 | 0~10V         | 0~500       | 5000      | G100-50  | 0~100V        | 0~50        | 5000      |
| G20-250 | 0~20V         | 0~250       | 5000      | G150-34  | 0~150V        | 0~34        | 5100      |
| G30-170 | 0~30V         | 0~170       | 5100      | G200-25  | 0~200V        | 0~25        | 5000      |
| G40-125 | 0~40V         | 0~125       | 5000      | G300-17  | 0~300V        | 0~17        | 5100      |
| G50-100 | 0~50V         | 0~100       | 5000      | G400-13  | 0~400V        | 0~13        | 5200      |
| G60-85  | 0~60V         | 0~85        | 5100      | G500-10  | 0~500V        | 0~10        | 5000      |
| G80-65  | 0~80V         | 0~65        | 5200      | G600-8.5 | 0~600V        | 0~8.5       | 5100      |

### Accessories

Accessories will be sent separately from the Power Supply packing, according to order.

#### 1. Serial Communication cable

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

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

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

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

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

#### 3. Bus Paralleling cable

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

#### 4. User Manual

|                     |     |
|---------------------|-----|
| Printed User Manual | G/M |
|---------------------|-----|

#### 5. Parallel Kit: 20kW/30kW

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

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

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

| G                                         | SP      | 10        | -                 | 1500 | -                              | - | -                                                |
|-------------------------------------------|---------|-----------|-------------------|------|--------------------------------|---|--------------------------------------------------|
| Series Name                               | Output  | Output    | Interface Options |      | AC Input Options               |   | Accessories Options                              |
| Front Panel Type                          | Voltage | Current   | P/N               |      | 3P208 (Three Phase 170~265VAC) |   | M - Printed *User Manual                         |
| Empty: standard                           | (0~10V) | (0~1500A) |                   |      | 3P400 (Three Phase 342~460VAC) |   | * User Manual & GUI are available on the website |
| <b>B:</b> Blank Front Panel (ATE version) |         |           |                   |      | 3P480 (Three Phase 342~528VAC) |   |                                                  |

### Interface Options (Factory installed)

LAN (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)  
 Modbus-TCP  
 EtherCAT

IEEE  
 MDDBS  
 ECAT

### Models GSP 10kW

| Model      | Voltage (VDC) | Current (A) | Power (kW) | Model      | Voltage (VDC) | Current (A) | Power (kW) |
|------------|---------------|-------------|------------|------------|---------------|-------------|------------|
| GSP10-1000 | 0~10V         | 0~1000      | 10         | GSP100-100 | 0~100V        | 0~100       | 10         |
| GSP20-500  | 0~20V         | 0~500       | 10         | GSP150-68  | 0~150V        | 0~68        | 10.2       |
| GSP30-340  | 0~30V         | 0~340       | 10.2       | GSP200-50  | 0~200V        | 0~50        | 10         |
| GSP40-250  | 0~40V         | 0~250       | 10         | GSP300-34  | 0~300V        | 0~34        | 10.2       |
| GSP50-200  | 0~50V         | 0~200       | 10         | GSP400-26  | 0~400V        | 0~26        | 10.4       |
| GSP60-170  | 0~60V         | 0~170       | 10.2       | GSP500-20  | 0~500V        | 0~20        | 10         |
| GSP80-130  | 0~80V         | 0~130       | 10.4       | GSP600-17  | 0~600V        | 0~17        | 10.2       |

### Models GSP 15kW

| Model      | Voltage (VDC) | Current (A) | Power (kW) | Model       | Voltage (VDC) | Current (A) | Power (kW) |
|------------|---------------|-------------|------------|-------------|---------------|-------------|------------|
| GSP10-1500 | 0~10V         | 0~1500      | 15         | GSP100-150  | 0~100V        | 0~150       | 15         |
| GSP20-750  | 0~20V         | 0~750       | 15         | GSP150-102  | 0~150V        | 0~102       | 15.3       |
| GSP30-510  | 0~30V         | 0~510       | 15.3       | GSP200-75   | 0~200V        | 0~75        | 15         |
| GSP40-375  | 0~40V         | 0~375       | 15         | GSP300-51   | 0~300V        | 0~51        | 15.3       |
| GSP50-300  | 0~50V         | 0~300       | 15         | GSP400-39   | 0~400V        | 0~39        | 15.6       |
| GSP60-255  | 0~60V         | 0~255       | 15.3       | GSP500-30   | 0~500V        | 0~30        | 15         |
| GSP80-195  | 0~80V         | 0~195       | 15.6       | GSP600-25.5 | 0~600V        | 0~25.5      | 15.3       |

### Accessories

Accessories will be sent separately from the Power Supply packing, according to order.

#### 1. Serial Communication cable

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

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

#### 2. Bus Paralleling cable (Included with the power supply)

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

#### 3. User Manual

|                     |     |
|---------------------|-----|
| Printed User Manual | G/M |
|---------------------|-----|

**GENESYS™ Family Output Voltage and Current**

| Models Series  | G (Std Front Panel Display)<br>GB (Blank Front Panel Display) |         |           |           |          | GSP (Scalable Power)<br>GBSP (Scalable Power) |           |
|----------------|---------------------------------------------------------------|---------|-----------|-----------|----------|-----------------------------------------------|-----------|
|                | 1kW                                                           | 1.7kW   | 2.7kW     | 3.4kW     | 5kW      | 10kW                                          | 15kW      |
| Voltage Range  | Current Range (A)                                             |         |           |           |          |                                               |           |
| 0-10V          | 0~100A                                                        | 0~170A  | 0~265A    | 0~340A    | 0~500A   | 0~1000A                                       | 0~1500A   |
| 0-20V          | 0~50A                                                         | 0~85A   | 0~135A    | 0~170A    | 0~250A   | 0~500A                                        | 0~750A    |
| 0-30V          | 0~34A                                                         | 0~56A   | 0~90A     | 0~112A    | 0~170A   | 0~340A                                        | 0~510A    |
| 0-40V          | 0~25A                                                         | 0~42A   | 0~68A     | 0~85A     | 0~125A   | 0~250A                                        | 0~375A    |
| 0-50V          | -                                                             | -       | -         | -         | 0~100A   | 0~200A                                        | 0~300A    |
| 0-60V          | 0~17A                                                         | 0~28A   | 0~45A     | 0~56A     | 0~85A    | 0~170A                                        | 0~255A    |
| 0-80V          | 0~12.5A                                                       | 0~21A   | 0~34A     | 0~42A     | 0~65A    | 0~130A                                        | 0~195A    |
| 0-100V         | 0~10A                                                         | 0~17A   | 0~27A     | 0~34A     | 0~50A    | 0~100A                                        | 0~150A    |
| 0-150V         | 0~7A                                                          | 0~11.2A | 0~18A     | 0~22.5A   | 0~34A    | 0~68A                                         | 0~102A    |
| 0-200V         | -                                                             | -       | -         | -         | 0~25A    | 0~50A                                         | 0~75A     |
| 0-300V         | 0~3.5A                                                        | 0~5.6A  | 0~9A      | 0~11.5A   | 0~17A    | 0~34A                                         | 0~51A     |
| 0-400V         | -                                                             | -       | -         | -         | 0~13A    | 0~26A                                         | 0~39A     |
| 0-500V         | -                                                             | -       | -         | -         | 0~10A    | 0~20A                                         | 0~30A     |
| 0-600V         | 0~1.7A                                                        | 0~2.8A  | 0~4.5A    | 0~5.6A    | 0~8.5A   | 0~17A                                         | 0~25.5A   |
| Weight (kg/lb) | 5/11                                                          | 5/11    | 6.25/14.3 | 6.25/14.3 | 7.5/16.5 | 15.5/34.2                                     | 23.5/51.8 |

**AC Input Range**

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

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



**Models 1kW**

| Model    | Voltage (V) | Current (A) | Power (W) | Model     | Voltage (V) | Current (A) | Power (W) |
|----------|-------------|-------------|-----------|-----------|-------------|-------------|-----------|
| GH10-100 | 0~10V       | 0~100       | 1000      | GH80-12.5 | 0~80V       | 0~12.5      | 1000      |
| GH20-50  | 0~20V       | 0~50        | 1000      | GH100-10  | 0~100V      | 0~10        | 1000      |
| GH30-34  | 0~30V       | 0~34        | 1020      | GH150-7   | 0~150V      | 0~7         | 1050      |
| GH40-25  | 0~40V       | 0~25        | 1000      | GH300-3.5 | 0~300V      | 0~3.5       | 1050      |
| GH60-17  | 0~60V       | 0~17        | 1020      | GH600-1.7 | 0~600V      | 0~1.7       | 1020      |

**Models 1.5kW**

| Model    | Voltage (V) | Current (A) | Power (W) | Model     | Voltage (V) | Current (A) | Power (W) |
|----------|-------------|-------------|-----------|-----------|-------------|-------------|-----------|
| GH10-150 | 0~10V       | 0~150       | 1500      | GH80-19   | 0~80V       | 0~19        | 1520      |
| GH20-75  | 0~20V       | 0~75        | 1500      | GH100-15  | 0~100V      | 0~15        | 1500      |
| GH30-50  | 0~30V       | 0~50        | 1500      | GH150-10  | 0~150V      | 0~10        | 1500      |
| GH40-38  | 0~40V       | 0~38        | 1520      | GH300-5   | 0~300V      | 0~5         | 1500      |
| GH60-25  | 0~60V       | 0~25        | 1500      | GH600-2.6 | 0~600V      | 0~2.6       | 1560      |



## GENESYS™ 1kW SERIES SPECIFICATIONS

| OUTPUT RATING                                                                  |                 | G      | 10-100                                                                                                                                                                                                                                       | 20-50  | 30-34  | 40-25  | 60-17  | 80-12.5 | 100-10 | 150-7  | 300-3.5 | 600-1.7                       |  |
|--------------------------------------------------------------------------------|-----------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|---------|--------|--------|---------|-------------------------------|--|
| 1.Rated output voltage(*1)                                                     |                 | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80      | 100    | 150    | 300     | 600                           |  |
| 2.Rated output current (*2)                                                    |                 | A      | 100                                                                                                                                                                                                                                          | 50     | 34     | 25     | 17     | 12.5    | 10     | 7      | 3.5     | 1.7                           |  |
| 3.Rated output power                                                           |                 | W      | 1000                                                                                                                                                                                                                                         | 1000   | 1020   | 1000   | 1020   | 1000    | 1000   | 1050   | 1050    | 1020                          |  |
| INPUT CHARACTERISTICS                                                          |                 | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80      | 100    | 150    | 300     | 600                           |  |
| 1.Input voltage/freq. (*3)                                                     |                 | ---    | 85~265Vac, continuous, 47~63Hz, Single Phase                                                                                                                                                                                                 |        |        |        |        |         |        |        |         |                               |  |
| 2. Maximum Input current at 100% load (100/200)                                |                 | A      | 12.5/6.5                                                                                                                                                                                                                                     |        |        |        |        |         |        |        |         |                               |  |
| 3.Power Factor (Typ)                                                           |                 | ---    | 0.99 @ 100Vac 0.98 @ 200Vac, rated output power.                                                                                                                                                                                             |        |        |        |        |         |        |        |         |                               |  |
| 4.Efficiency at 100 Vac/200Vac, rated output (*17)                             |                 | %      | 86/88                                                                                                                                                                                                                                        | 87/89  | 87/89  | 87/89  | 87/89  | 87/89   | 88/90  | 88/90  | 88/90   | 88/90                         |  |
| 5.Inrush current (*5)                                                          |                 | A      | Less than 50A                                                                                                                                                                                                                                |        |        |        |        |         |        |        |         |                               |  |
| CONSTANT VOLTAGE MODE                                                          |                 | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80      | 100    | 150    | 300     | 600                           |  |
| 1.Max. Line regulation (*6)                                                    |                 | ---    | 0.01% of rated output voltage                                                                                                                                                                                                                |        |        |        |        |         |        |        |         |                               |  |
| 2.Max. Load regulation (*7)                                                    |                 | ---    | 0.01% of rated output voltage +2mV                                                                                                                                                                                                           |        |        |        |        |         |        |        |         |                               |  |
| 3.Ripple and noise (p-p, 20MHz) (*8)                                           |                 | mV     | 50                                                                                                                                                                                                                                           | 50     | 50     | 60     | 60     | 75      | 75     | 75     | 120     | 500                           |  |
| 4.Ripple r.m.s. 5Hz~1MHz (*8)                                                  |                 | mV     | 6                                                                                                                                                                                                                                            | 6      | 6      | 7      | 7      | 10      | 12     | 9      | 20      | 100                           |  |
| 5.Temperature coefficient                                                      |                 | PPM/°C | 50PPM/°C from rated output voltage, following 30 minutes warm-up.                                                                                                                                                                            |        |        |        |        |         |        |        |         |                               |  |
| 6.Temperature stability                                                        |                 | ---    | 0.01% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temp.                                                                                                                                             |        |        |        |        |         |        |        |         |                               |  |
| 7. Warm-up drift                                                               |                 | ---    | Less than 0.01% of rated output voltage+2mV over 30 minutes following power on.                                                                                                                                                              |        |        |        |        |         |        |        |         |                               |  |
| 8.Remote sense compensation/wire (*10)                                         |                 | V      | 2                                                                                                                                                                                                                                            | 2      | 5      | 5      | 5      | 5       | 5      | 5      | 5       | 5                             |  |
| 9.Up-prog. Response time (*11)                                                 |                 | mS     | 35                                                                                                                                                                                                                                           | 35     | 35     | 35     | 35     | 35      | 40     | 50     | 100     | 100                           |  |
| 10.Down-prog.response time:                                                    | Full load (*12) | mS     | 35                                                                                                                                                                                                                                           | 30     | 60     | 60     | 60     | 60      | 80     | 120    | 220     | 220                           |  |
|                                                                                | No load (*12)   | mS     | 500                                                                                                                                                                                                                                          | 700    | 1000   | 1200   | 1500   | 1700    | 2600   | 2900   | 4600    | 4600                          |  |
| 11.Transient response time                                                     |                 | mS     | 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. |        |        |        |        |         |        |        |         |                               |  |
| 12.Start up delay                                                              |                 | Sec    | Less than 6 Sec                                                                                                                                                                                                                              |        |        |        |        |         |        |        |         |                               |  |
| 13.Hold-up time                                                                |                 | mS     | 20ms typical, rated output power                                                                                                                                                                                                             |        |        |        |        |         |        |        |         |                               |  |
| CONSTANT CURRENT MODE                                                          |                 | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80      | 100    | 150    | 300     | 600                           |  |
| 1.Max. Line regulation (*6)                                                    |                 | ---    | 0.02% of rated output current. +2mA                                                                                                                                                                                                          |        |        |        |        |         |        |        |         |                               |  |
| 2.Max. Load regulation (*9)                                                    |                 | ---    | 0.02% of rated output current. +5mA                                                                                                                                                                                                          |        |        |        |        |         |        |        |         |                               |  |
| 3.Ripple r.m.s. @ rated voltage. B.W 5Hz~1MHz. (*13)                           |                 | mA     | ≤420                                                                                                                                                                                                                                         | ≤160   | ≤100   | ≤60    | ≤50    | ≤30     | ≤20    | ≤10    | ≤8      | ≤5                            |  |
| 5.Temperature coefficient                                                      |                 | PPM/°C | 10V~100V 100PPM/°C from rated output current, following 30 minutes warm-up.<br>150V~600V 70PPM/°C from rated output current, following 30 minutes warm-up.                                                                                   |        |        |        |        |         |        |        |         |                               |  |
| 6.Temperature stability                                                        |                 | ---    | 0.01% of rated Iout over 8hrs. interval following 30 minutes warm-up. Constant line, load & temperature.                                                                                                                                     |        |        |        |        |         |        |        |         |                               |  |
| 7. Warm-up drift                                                               |                 | ---    | 10V~100V model: Less than +/-0.25% of rated output current over 30 minutes following power on.<br>150V~600V: 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 (*14)                                               |                 | ---    | 0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.4% of rated Iout.                                                                                                                                                       |        |        |        |        |         |        |        |         |                               |  |
| 3.Vout resistor programming                                                    |                 | ---    | 0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Vout.                                                                                                                                               |        |        |        |        |         |        |        |         |                               |  |
| 4.Iout resistor programming (*14)                                              |                 | ---    | 0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Iout.                                                                                                                                               |        |        |        |        |         |        |        |         |                               |  |
| 5.Output voltage monitor                                                       |                 | ---    | 0~5V or 0~10V, user selectable. Accuracy: +/-0.5% of rated Vout.                                                                                                                                                                             |        |        |        |        |         |        |        |         |                               |  |
| 6.Output current monitor (*14)                                                 |                 | ---    | 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. Remote: 0~0.6V or short. Local: 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 (500ohm impedance)=Fail                                                                                                                                                                                                          |        |        |        |        |         |        |        |         |                               |  |
| FUNCTIONS AND FEATURES                                                         |                 |        |                                                                                                                                                                                                                                              |        |        |        |        |         |        |        |         |                               |  |
| 1. Parallel operation                                                          |                 | ---    | Possible. Up to 4 identical units in Master/Slave mode. Refer to instruction manual.                                                                                                                                                         |        |        |        |        |         |        |        |         |                               |  |
| 2. Series operation                                                            |                 | ---    | Possible. Two identical units. Refer to instruction manual.                                                                                                                                                                                  |        |        |        |        |         |        |        |         |                               |  |
| 3. Daisy chain                                                                 |                 | ---    | Power supplies can be connected in Daisy chain to synchronize their turn-on and turn-off.                                                                                                                                                    |        |        |        |        |         |        |        |         |                               |  |
| 4. Constant power control                                                      |                 | ---    | Limits the output power to a programmed value. Programming via the communication ports or the front panel.                                                                                                                                   |        |        |        |        |         |        |        |         |                               |  |
| 5. Output resistance control                                                   |                 | ---    | Emulates series resistance. Resistance range: 1~1000mΩ. Programming via the communication ports or the front panel.                                                                                                                          |        |        |        |        |         |        |        |         |                               |  |
| 6. Slew rate control                                                           |                 | ---    | Programmable Output rise and Output fall slew rate. Programming range: 0.0001~999.99 V/mSec. or A/mSec. Programming via the communication ports or the front panel.                                                                          |        |        |        |        |         |        |        |         |                               |  |
| 7. Arbitrary waveforms                                                         |                 | ---    | Profiles of up to 100 steps can be stored in 4 memory cells. Activation by command via the communication ports or by the front panel.                                                                                                        |        |        |        |        |         |        |        |         |                               |  |
| PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional IEEE (*16) Interfaces) |                 | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80      | 100    | 150    | 300     | 600                           |  |
| 1.Vout programming accuracy (*15)                                              |                 | ---    | 0.05% of rated output voltage                                                                                                                                                                                                                |        |        |        |        |         |        |        |         |                               |  |
| 2.Iout programming accuracy (*14)                                              |                 | ---    | 0.1% of actual output current+0.2% 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 (*14)                                                 |                 | ---    | 0.2% of rated output current                                                                                                                                                                                                                 |        |        |        |        |         |        |        |         | 0.25% of rated output current |  |
| 7.Vout readback resolution (of rated output voltage)                           |                 | %      | 0.011%                                                                                                                                                                                                                                       | 0.006% | 0.004% | 0.003% | 0.002% | 0.002%  | 0.011% | 0.007% | 0.004%  | 0.002%                        |  |
| 8.Iout readback resolution (of rated output current)                           |                 | %      | 0.011%                                                                                                                                                                                                                                       | 0.003% | 0.004% | 0.005% | 0.007% | 0.009%  | 0.011% | 0.015% | 0.004%  | 0.007%                        |  |

## GENESYS™ 1.7kW SERIES SPECIFICATIONS

| OUTPUT RATING                                                                  |                 | G      | 10-170                                                                                                                                                                                                                                       | 20-85  | 30-56  | 40-42  | 60-28  | 80-21  | 100-17 | 150-11.2 | 300-5.6 | 600-2.8 |
|--------------------------------------------------------------------------------|-----------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|----------|---------|---------|
| 1.Rated output voltage(*1)                                                     |                 | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150      | 300     | 600     |
| 2.Rated output current(*2)                                                     |                 | A      | 170                                                                                                                                                                                                                                          | 85     | 56     | 42     | 28     | 21     | 17     | 11.2     | 5.6     | 2.8     |
| 3.Rated output power                                                           |                 | W      | 1700                                                                                                                                                                                                                                         | 1700   | 1680   | 1680   | 1680   | 1680   | 1700   | 1680     | 1680    | 1680    |
| INPUT CHARACTERISTICS                                                          |                 | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150      | 300     | 600     |
| 1.Input voltage/freq. (*3)                                                     |                 | ---    | 85~265Vac, continuous, 47~63Hz,Single Phase                                                                                                                                                                                                  |        |        |        |        |        |        |          |         |         |
| 2. Maximum Input current at 100% load (100/200)                                |                 | A      | 20/10                                                                                                                                                                                                                                        |        |        |        |        |        |        |          |         |         |
| 3.Power Factor (Typ)                                                           |                 | ---    | 0.99 @ 100Vac 0.98 @ 200Vac, rated output power.                                                                                                                                                                                             |        |        |        |        |        |        |          |         |         |
| 4.Efficiency at 100 Vac/200Vac, rated output (*19)                             |                 | %      | 86/88                                                                                                                                                                                                                                        | 87/89  | 87/89  | 87/89  | 87/89  | 87/89  | 88/90  | 88/90    | 88/90   | 88/90   |
| 5.Inrush current (*5)                                                          |                 | A      | Less than 50A                                                                                                                                                                                                                                |        |        |        |        |        |        |          |         |         |
| CONSTANT VOLTAGE MODE                                                          |                 | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150      | 300     | 600     |
| 1.Max. Line regulation (*6)                                                    |                 | ---    | 0.01% of rated output voltage                                                                                                                                                                                                                |        |        |        |        |        |        |          |         |         |
| 2.Max. Load regulation (*7)                                                    |                 | ---    | 0.01% of rated output voltage +2mV                                                                                                                                                                                                           |        |        |        |        |        |        |          |         |         |
| 3.Ripple and noise (p-p, 20MHz) (*8)                                           |                 | mV     | 50                                                                                                                                                                                                                                           | 50     | 50     | 60     | 60     | 75     | 75     | 75       | 120     | 500     |
| 4.Ripple r.m.s. 5Hz~1MHz (*8)                                                  |                 | mV     | 6                                                                                                                                                                                                                                            | 6      | 6      | 7      | 7      | 10     | 12     | 8        | 20      | 100     |
| 5.Temperature coefficient                                                      |                 | PPM/°C | 50PPM/°C from rated output voltage, following 30 minutes warm-up.                                                                                                                                                                            |        |        |        |        |        |        |          |         |         |
| 6.Temperature stability                                                        |                 | ---    | 0.01% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temp.                                                                                                                                             |        |        |        |        |        |        |          |         |         |
| 7. Warm-up drift                                                               |                 | ---    | Less than 0.01% of rated output voltage+2mV over 30 minutes following power on.                                                                                                                                                              |        |        |        |        |        |        |          |         |         |
| 8.Remote sense compensation/wire (*10)                                         |                 | V      | 2                                                                                                                                                                                                                                            | 2      | 5      | 5      | 5      | 5      | 5      | 5        | 5       | 5       |
| 9.Up-prog. Response time (*11)                                                 |                 | mS     | 20                                                                                                                                                                                                                                           | 20     | 20     | 20     | 20     | 20     | 25     | 50       | 100     | 100     |
| 10. Down-prog.response time:                                                   | Full load (*12) | mS     | 30                                                                                                                                                                                                                                           | 30     | 60     | 60     | 60     | 60     | 60     | 120      | 220     | 200     |
|                                                                                | No load (*12)   | mS     | 450                                                                                                                                                                                                                                          | 700    | 1000   | 1200   | 1500   | 1700   | 2600   | 2900     | 4600    | 4600    |
| 11.Transient response time                                                     |                 | mS     | 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. |        |        |        |        |        |        |          |         |         |
| 12.Start up delay                                                              |                 | Sec    | Less than 6 Sec                                                                                                                                                                                                                              |        |        |        |        |        |        |          |         |         |
| 13.Hold-up time                                                                |                 | mS     | 16ms typical, rated output power                                                                                                                                                                                                             |        |        |        |        |        |        |          |         |         |
| CONSTANT CURRENT MODE                                                          |                 | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150      | 300     | 600     |
| 1.Max. Line regulation (*6)                                                    |                 | ---    | 0.01% of rated output current. +2mA                                                                                                                                                                                                          |        |        |        |        |        |        |          |         |         |
| 2.Max. Load regulation (*9)                                                    |                 | ---    | 0.02% of rated output current. +5mA                                                                                                                                                                                                          |        |        |        |        |        |        |          |         |         |
| 3.Ripple r.m.s. @ rated voltage. B.W 5Hz~1MHz. (*13)                           |                 | mA     | ≤420                                                                                                                                                                                                                                         | ≤160   | ≤100   | ≤60    | ≤50    | ≤30    | ≤20    | ≤10      | ≤8      | ≤5      |
| 5.Temperature coefficient                                                      |                 | PPM/°C | 10V~100V 100PPM/°C from rated output current, following 30 minutes warm-up.<br>150V~600V 70PPM/°C from rated output current, following 30 minutes warm-up.                                                                                   |        |        |        |        |        |        |          |         |         |
| 6.Temperature stability                                                        |                 | ---    | 0.01% of rated Iout over 8hrs. interval following 30 minutes warm-up. Constant line, load & temperature.                                                                                                                                     |        |        |        |        |        |        |          |         |         |
| 7. Warm-up drift                                                               |                 | ---    | 10V~100V model: Less than +/-0.25% of rated output current over 30 minutes following power on.<br>150V~600V: 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 (*14)                                               |                 | ---    | 0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.4% of rated Iout.                                                                                                                                                       |        |        |        |        |        |        |          |         |         |
| 3.Vout resistor programming                                                    |                 | ---    | 0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Vout.                                                                                                                                               |        |        |        |        |        |        |          |         |         |
| 4.Iout resistor programming (*14)                                              |                 | ---    | 0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Iout.                                                                                                                                               |        |        |        |        |        |        |          |         |         |
| 5.Output voltage monitor                                                       |                 | ---    | 0~5V or 0~10V, user selectable. Accuracy: +/-0.5% of rated Vout..                                                                                                                                                                            |        |        |        |        |        |        |          |         |         |
| 6.Output current monitor (*14)                                                 |                 | ---    | 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. Remote: 0~0.6V or short. Local: 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 (500ohm impedance)=Fail                                                                                                                                                                                                          |        |        |        |        |        |        |          |         |         |
| FUNCTIONS AND FEATURES                                                         |                 |        |                                                                                                                                                                                                                                              |        |        |        |        |        |        |          |         |         |
| 1. Parallel operation                                                          |                 | ---    | Possible. Up to 4 identical units in Master/Slave mode. Refer to instruction manual.                                                                                                                                                         |        |        |        |        |        |        |          |         |         |
| 2. Series operation                                                            |                 | ---    | Possible. Two identical units. Refer to instruction manual.                                                                                                                                                                                  |        |        |        |        |        |        |          |         |         |
| 3. Daisy chain                                                                 |                 | ---    | Power supplies can be connected in Daisy chain to synchronize their turn-on and turn-off.                                                                                                                                                    |        |        |        |        |        |        |          |         |         |
| 4. Constant power control                                                      |                 | ---    | Limits the output power to a programmed value. Programming via the communication ports or the front panel.                                                                                                                                   |        |        |        |        |        |        |          |         |         |
| 5. Output resistance control                                                   |                 | ---    | Emulates series resistance. Resistance range: 1~1000mΩ. Programming via the communication ports or the front panel.                                                                                                                          |        |        |        |        |        |        |          |         |         |
| 6. Slew rate control                                                           |                 | ---    | Programmable Output rise and Output fall slew rate. Programming range: 0.0001~999.99 V/mSec. or A/mSec. Programming via the communication ports or the front panel.                                                                          |        |        |        |        |        |        |          |         |         |
| 7. Arbitrary waveforms                                                         |                 | ---    | Profiles of up to 100 steps can be stored in 4 memory cells. Activation by command via the communication ports or by the front panel.                                                                                                        |        |        |        |        |        |        |          |         |         |
| PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional IEEE (*18) Interfaces) |                 | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150      | 300     | 600     |
| 1.Vout programming accuracy (*15)                                              |                 | ---    | 0.05% of rated output voltage                                                                                                                                                                                                                |        |        |        |        |        |        |          |         |         |
| 2.Iout programming accuracy (*14)                                              |                 | ---    | 0.1% of actual output current+0.2% 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 (*14)                                                 |                 | ---    | 0.2% of rated output current                                                                                                                                                                                                                 |        |        |        |        |        |        |          |         |         |
| 7.Vout readback resolution (of rated output voltage)                           |                 | %      | 0.011%                                                                                                                                                                                                                                       | 0.006% | 0.004% | 0.003% | 0.002% | 0.002% | 0.011% | 0.007%   | 0.004%  | 0.002%  |
| 8.Iout readback resolution (of rated output current)                           |                 | %      | 0.007%                                                                                                                                                                                                                                       | 0.002% | 0.003% | 0.003% | 0.005% | 0.006% | 0.007% | 0.010%   | 0.003%  | 0.004%  |

## GENESYS™ 1kW/1.7kW SERIES SPECIFICATIONS

| PROTECTIVE FUNCTIONS                     |  | V                  | 10                                                                                                                                                                                                                                                          | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 30   | 40     | 60      | 80     | 100      | 150      | 300      | 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 OUTPUT button, by rear panel or by communication.                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |         |        |          |          |          |         |
| 3.Over-voltage programming range         |  | V                  | 0.5~12                                                                                                                                                                                                                                                      | 1~24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2~36 | 2~44.1 | 5~66.15 | 5~88.2 | 5~110.25 | 5~165.37 | 5~330.75 | 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 limit (UVL)      |  | ---                | Prevents adjustment of Vout below limit.                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |         |        |          |          |          |         |
| 8. 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,IEEE,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, 5K/10K 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/IEEE communication, Trigger, Load/Store Cell.                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |         |        |          |          |          |         |
| ENVIRONMENTAL CONDITIONS                 |  |                    |                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |         |        |          |          |          |         |
| 1.Operating temperature                  |  | ---                | 0~50°C, 100% load.                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |         |        |          |          |          |         |
| 2.Storage temperature                    |  | ---                | -30~85°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°C/100m above 2000m. Non operating: 40000ft (12000m).                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |         |        |          |          |          |         |
| MECHANICAL                               |  |                    |                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |         |        |          |          |          |         |
| 1.Cooling                                |  | ---                | Forced air cooling by internal fans. Air flow direction: from Front panel to power supply rear                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |         |        |          |          |          |         |
| 2.Weight                                 |  | kg                 | Less than 5kg.                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |         |        |          |          |          |         |
| 3.Dimensions (WxHxD)                     |  | mm                 | W: 423, H: 43.6, D: 441.5 (Without busbars and busbars cover),<br>W: 423, H: 43.6, D: 553.2 (Including busbars and busbars cover) (Refer to Outline drawing).                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |         |        |          |          |          |         |
| 4.Vibration                              |  | ---                | MIL-810G, method 514.6, Procedure I, test condition Annex C - 2.1.3.1                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |         |        |          |          |          |         |
| 5.Shock                                  |  | ---                | Less than 20G, half sine, 11mSec. Unit is unpacked.                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |         |        |          |          |          |         |
| SAFETY/EMC                               |  |                    |                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |         |        |          |          |          |         |
| 1.Applicable standards:                  |  | Safety G1kW/G1.7kW | ---                                                                                                                                                                                                                                                         | UL61010-1, CSA22.2 No.61010-1, IEC61010-1, EN61010-1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |        |         |        |          |          |          |         |
| 1.1. Interface classification            |  | G1kW/1.7kW         | ---                                                                                                                                                                                                                                                         | Vouts<50V Models: Output, J1, J2, J3, J4, J5, J6, J7, J8 (sense) & J9 (communication options) are Non Hazardous.<br>60<Vouts<600V Models: Output & J8 (sense) are hazardous, J1, J2, J3, J4, J5, J6, J7 & J9 (communication options) are Non Hazardous.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |        |         |        |          |          |          |         |
| 1.2 Withstand voltage                    |  | G1kW/1.7kW         | ---                                                                                                                                                                                                                                                         | Vouts<50V Models: Input – Output & J8 (sense), J1, J2, J3, J4, J5, J6, J7 & J9 (communication options): 4242VDC 1min, Input - Ground: 2835VDC 1min.<br>60V<Vouts<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.<br>Output & J8 (sense) - Ground: 1500VDC 1min, Input - Ground: 2835VDC 1min.<br>100V<Vouts<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.<br>Output & J8 (sense) - Ground: 2500VDC 1min.<br>Input - Ground: 2835VDC 1min. |      |        |         |        |          |          |          |         |
| 1.3 Insulation resistance                |  |                    | ---                                                                                                                                                                                                                                                         | 100Mohm at 25°C, 70%RH. Output to Ground 500VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |         |        |          |          |          |         |
| 2.Conducted emission                     |  |                    | ---                                                                                                                                                                                                                                                         | IEC/EN61204-3 Industrial environment, Annex H table H.1 , FCC Part 15-A, VCCI-A .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |      |        |         |        |          |          |          |         |
| 3.Radiated emission                      |  |                    | ---                                                                                                                                                                                                                                                         | IEC/EN61204-3 Industrial environment, Annex H table H.3 and H4, FCC Part 15-A, VCCI-A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |        |         |        |          |          |          |         |
| 4. EMC compliance                        |  | EMC (*4)           | ---                                                                                                                                                                                                                                                         | According to IEC/EN61204-3 Industrial environment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |      |        |         |        |          |          |          |         |

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

### NOTES:

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

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

\*3: For cases where conformance to various safety standards (UL, IEC, etc...) is required, to be described as 100-240Vac (50/60Hz).

\*4: Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m.

\*5: Not including EMI filter inrush current, less than 0.2mSec.

\*6: 85~132Vac or 170~265Vac. Constant load.

\*7: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.

\*8: For 10V~150V models: Measured with JEITA RC-9131C (1:1) probe. For 200~600V models: Measured with 100:1 probe.

\*9: For load voltage change, equal to the unit voltage rating, constant input voltage.

\*10: The maximum voltage on the power supply terminals must not exceed the rated voltage.

\*11: From 10% to 90% of Rated Output Voltage, with rated, resistive load.

\*12: From 90% to 10% of Rated Output Voltage.

\*13: For 10V model, the ripple is measured at 20~100% of rated output voltage and rated output current. For other models, the ripple is measured at 10~100% of rated output voltage and rated output current. 8.W 5Hz~1MHz.

\*14: The Constant Current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift.

\*15: Measured at the sensing point.

\*16 Max. ambient temperature for using IEEE is 40°C.

\*17: Ta=25°C, rated output power.

## GENESYS™ 2.7kW SERIES SPECIFICATIONS

| OUTPUT RATING                                                                      |                       | G      | 10-265                                                                                                                                                                                                                                                                                       | 20-135 | 30-90  | 40-68  | 60-45  | 80-34  | 100-27 | 150-18 | 300-9  | 600-4.5 |
|------------------------------------------------------------------------------------|-----------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| 1. Rated output voltage (*1)                                                       |                       | V      | 10                                                                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150    | 300    | 600     |
| 2. Rated output current (*2)                                                       |                       | A      | 265                                                                                                                                                                                                                                                                                          | 135    | 90     | 68     | 45     | 34     | 27     | 18     | 9      | 4.5     |
| 3. Rated output power                                                              |                       | W      | 2650                                                                                                                                                                                                                                                                                         | 2700   | 2700   | 2720   | 2700   | 2720   | 2700   | 2700   | 2700   | 2700    |
| INPUT CHARACTERISTICS                                                              |                       | V      | 10                                                                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150    | 300    | 600     |
| 1. Input voltage/freq. 3 phase, 3 wire + Ground (*4)                               |                       | ---    | 3-Phase, 200V models: 170~265Vac, 47~63Hz (Covers 200/230Vac)<br>3-Phase, 400V models: 342~460Vac, 47~63Hz (Covers 380/400/415Vac)<br>3-Phase, 480V models: 342~528Vac, 47~63Hz (Covers 380/400/415/440/460/480Vac)<br>1-Phase, 200V models: 170~265Vac, 47~63Hz (Covers 200/208/230/240Vac) |        |        |        |        |        |        |        |        |         |
| 2. Maximum Input current at 100% load                                              | 3-Phase, 200V models: | ---    | 10A @ 200Vac                                                                                                                                                                                                                                                                                 |        |        |        |        |        |        |        |        |         |
|                                                                                    | 3-Phase, 400V models: | ---    | 5.5A @ 380Vac                                                                                                                                                                                                                                                                                |        |        |        |        |        |        |        |        |         |
|                                                                                    | 3-Phase, 480V models: | ---    | 5.5A @ 380Vac                                                                                                                                                                                                                                                                                |        |        |        |        |        |        |        |        |         |
|                                                                                    | 1-Phase, 200V models: | ---    | 16.5A @ 200Vac                                                                                                                                                                                                                                                                               |        |        |        |        |        |        |        |        |         |
| 3. Power Factor (Typ)                                                              |                       | ---    | For 3-Phase: 0.94 @ 200/380Vac, rated output power.<br>For 1-Phase: 0.99 @ 200Vac, rated output power.                                                                                                                                                                                       |        |        |        |        |        |        |        |        |         |
| 4. Efficiency (Typ) (*5) (*22)                                                     |                       | %      | 88                                                                                                                                                                                                                                                                                           | 89     | 89.5   | 90     | 90     | 90.5   | 90.5   | 90.5   | 90.5   | 90.5    |
| 5. Inrush current (*6)                                                             |                       | A      | Less than 50A                                                                                                                                                                                                                                                                                |        |        |        |        |        |        |        |        |         |
| CONSTANT VOLTAGE MODE                                                              |                       | V      | 10                                                                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150    | 300    | 600     |
| 1. Max. Line regulation (*7)                                                       |                       | ---    | 0.01% of rated output voltage                                                                                                                                                                                                                                                                |        |        |        |        |        |        |        |        |         |
| 2. Max. Load regulation (*8)                                                       |                       | ---    | 0.01% of rated output voltage +5mV                                                                                                                                                                                                                                                           |        |        |        |        |        |        |        |        |         |
| 3. Ripple and noise (p-p, 20MHz) (*9)                                              |                       | mV     | 75                                                                                                                                                                                                                                                                                           | 75     | 75     | 75     | 80     | 80     | 100    | 120    | 200    | 480     |
| 4. Ripple r.m.s. 5Hz~1MHz (*9)                                                     |                       | mV     | 8                                                                                                                                                                                                                                                                                            | 10     | 10     | 12     | 15     | 15     | 15     | 20     | 60     | 100     |
| 5. Temperature coefficient                                                         |                       | PPM/°C | 50PPM/°C from rated output voltage, following 30 minutes warm-up.                                                                                                                                                                                                                            |        |        |        |        |        |        |        |        |         |
| 6. Temperature stability                                                           |                       | ---    | 0.01% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temp.                                                                                                                                                                                             |        |        |        |        |        |        |        |        |         |
| 7. Warm-up drift                                                                   |                       | ---    | Less than 0.05% of rated output voltage+2mV over 30 minutes following power on.                                                                                                                                                                                                              |        |        |        |        |        |        |        |        |         |
| 8. Remote sense compensation/wire (*10)                                            |                       | V      | 2                                                                                                                                                                                                                                                                                            | 2      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5       |
| 9. Up-prog. Response time (*11)                                                    |                       | mS     | 30                                                                                                                                                                                                                                                                                           | 30     | 30     | 30     | 50     | 50     | 50     | 50     | 50     | 100     |
| 10. Down-prog. response time:                                                      | Full load (*11)       | mS     | 50                                                                                                                                                                                                                                                                                           | 50     | 80     | 80     | 80     | 100    | 100    | 100    | 100    | 200     |
|                                                                                    | No load (*12)         | mS     | 450                                                                                                                                                                                                                                                                                          | 600    | 800    | 900    | 1100   | 1300   | 2100   | 2000   | 3200   | 3100    |
| 11. Transient response time                                                        |                       | mS     | 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.                                                 |        |        |        |        |        |        |        |        |         |
| 12. Start up delay                                                                 |                       | Sec    | Less than 6 Sec                                                                                                                                                                                                                                                                              |        |        |        |        |        |        |        |        |         |
| CONSTANT CURRENT MODE                                                              |                       | V      | 10                                                                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150    | 300    | 600     |
| 1. Max. Line regulation (*7)                                                       |                       | ---    | 0.05% of rated output current.                                                                                                                                                                                                                                                               |        |        |        |        |        |        |        |        |         |
| 2. Max. Load regulation (*13)                                                      |                       | ---    | 0.08% of rated output current.                                                                                                                                                                                                                                                               |        |        |        |        |        |        |        |        |         |
| 3. Ripple r.m.s. @ rated voltage. 3-Phase (*14)                                    |                       | mA     | ≤800                                                                                                                                                                                                                                                                                         | ≤450   | ≤300   | ≤150   | ≤100   | ≤70    | ≤45    | ≤30    | ≤12    | ≤5      |
| 4. Ripple r.m.s. @ rated voltage. 1-Phase (*14)                                    |                       | mA     | ≤1200                                                                                                                                                                                                                                                                                        | ≤600   | ≤300   | ≤300   | ≤200   | ≤100   | ≤60    | ≤40    | ≤12    | ≤8      |
| 5. Temperature coefficient                                                         |                       | PPM/°C | 10V~100V 100PPM/°C from rated output current, following 30 minutes warm-up.<br>150V~600V 70PPM/°C from rated output current, following 30 minutes warm-up.                                                                                                                                   |        |        |        |        |        |        |        |        |         |
| 6. Temperature stability                                                           |                       | ---    | 0.01% of rated Iout over 8hrs. interval following 30 minutes warm-up. Constant line, load & temperature.                                                                                                                                                                                     |        |        |        |        |        |        |        |        |         |
| 7. Warm-up drift                                                                   |                       | ---    | 10V~100V model: Less than +/-0.25% of rated output current over 30 minutes following power on.<br>150V~600V: 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 (*15)                                                  |                       | ---    | 0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.4% of rated Iout.                                                                                                                                                                                                       |        |        |        |        |        |        |        |        |         |
| 3. Vout resistor programming                                                       |                       | ---    | 0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Vout.                                                                                                                                                                                               |        |        |        |        |        |        |        |        |         |
| 4. Iout resistor programming (*15)                                                 |                       | ---    | 0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Iout.                                                                                                                                                                                               |        |        |        |        |        |        |        |        |         |
| 5. Output voltage monitor                                                          |                       | ---    | 0~5V or 0~10V, user selectable. Accuracy: +/-0.5%.                                                                                                                                                                                                                                           |        |        |        |        |        |        |        |        |         |
| 6. Output current monitor (*15)                                                    |                       | ---    | 0~5V or 0~10V, user selectable. Accuracy: +/-0.5%.                                                                                                                                                                                                                                           |        |        |        |        |        |        |        |        |         |
| 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. Remote: 0~0.6V or short. Local: 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 (500ohm impedance)=Fail                                                                                                                                                                                                                                                          |        |        |        |        |        |        |        |        |         |
| FUNCTIONS AND FEATURES                                                             |                       |        |                                                                                                                                                                                                                                                                                              |        |        |        |        |        |        |        |        |         |
| 1. Parallel operation                                                              |                       | ---    | Possible. Up to 4 identical units in Master/Slave mode. Refer to instruction manual.                                                                                                                                                                                                         |        |        |        |        |        |        |        |        |         |
| 2. Series operation                                                                |                       | ---    | Possible. Two identical units. Refer to instruction manual.                                                                                                                                                                                                                                  |        |        |        |        |        |        |        |        |         |
| 3. Daisy chain                                                                     |                       | ---    | Power supplies can be connected in Daisy chain to synchronize their turn-on and turn-off.                                                                                                                                                                                                    |        |        |        |        |        |        |        |        |         |
| 4. Constant power control                                                          |                       | ---    | Limits the output power to a programmed value. Programming via the communication ports or the front panel.                                                                                                                                                                                   |        |        |        |        |        |        |        |        |         |
| 5. Output resistance control                                                       |                       | ---    | Emulates series resistance. Resistance range: 1~1000mΩ. Programming via the communication ports or the front panel.                                                                                                                                                                          |        |        |        |        |        |        |        |        |         |
| 6. Slew rate control                                                               |                       | ---    | Programmable Output rise and Output fall slew rate. Programming range: 0.0001~999.99 V/mSec. or A/mSec. Programming via the communication ports or the front panel.                                                                                                                          |        |        |        |        |        |        |        |        |         |
| 7. Arbitrary waveforms                                                             |                       | ---    | Profiles of up to 100 steps can be stored in 4 memory cells. Activation by command via the communication ports or by the front panel.                                                                                                                                                        |        |        |        |        |        |        |        |        |         |
| PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional IEEE(*19)(*20) Interfaces) |                       | V      | 10                                                                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150    | 300    | 600     |
| 1. Vout programming accuracy (*16)                                                 |                       | ---    | 0.05% of rated output voltage                                                                                                                                                                                                                                                                |        |        |        |        |        |        |        |        |         |
| 2. Iout programming accuracy (*15)                                                 |                       | ---    | 0.1% of actual output current+0.2% 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 (*15)                                                    |                       | ---    | 0.2% of rated output current                                                                                                                                                                                                                                                                 |        |        |        |        |        |        |        |        |         |
| 7. Vout readback resolution (of rated output voltage)                              |                       | %      | 0.011%                                                                                                                                                                                                                                                                                       | 0.006% | 0.004% | 0.003% | 0.002% | 0.002% | 0.011% | 0.007% | 0.004% | 0.002%  |
| 8. Iout readback resolution (of rated output current)                              |                       | %      | 0.005%                                                                                                                                                                                                                                                                                       | 0.008% | 0.002% | 0.002% | 0.003% | 0.004% | 0.005% | 0.007% | 0.002% | 0.003%  |



## GENESYS™ 3.4kW SERIES SPECIFICATIONS

| OUTPUT RATING                                                                      |                       | G      | 10-340                                                                                                                                                                                                                                                                                       | 20-170 | 30-112 | 40-85  | 60-56  | 80-42  | 100-34 | 150-22.5 | 300-11.5 | 600-5.6 |
|------------------------------------------------------------------------------------|-----------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|----------|----------|---------|
| 1.Rated output voltage(*1)                                                         |                       | V      | 10                                                                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150      | 300      | 600     |
| 2.Rated output current(*2)                                                         |                       | A      | 340(*3)                                                                                                                                                                                                                                                                                      | 170    | 112    | 85     | 56     | 42     | 34     | 22.5     | 11.5     | 5.6     |
| 3.Rated output power                                                               |                       | W      | 3400                                                                                                                                                                                                                                                                                         | 3400   | 3360   | 3400   | 3360   | 3360   | 3400   | 3375     | 3450     | 3360    |
| INPUT CHARACTERISTICS                                                              |                       | V      | 10                                                                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150      | 300      | 600     |
| 1.Input voltage/freq. 3 phase, 3 wire + Ground(*4)                                 |                       | ---    | 3-Phase, 200V models: 170~265Vac, 47~63Hz (Covers 200/230Vac)<br>3-Phase, 400V models: 342~460Vac, 47~63Hz (Covers 380/400/415Vac)<br>3-Phase, 480V models: 342~528Vac, 47~63Hz (Covers 380/400/415/440/460/480Vac)<br>1-Phase, 200V models: 170~265Vac, 47~63Hz (Covers 200/208/230/240Vac) |        |        |        |        |        |        |          |          |         |
| 2. Maximum Input current at 100% load                                              | 3-Phase, 200V models: | ---    | 12.5A @ 200Vac                                                                                                                                                                                                                                                                               |        |        |        |        |        |        |          |          |         |
|                                                                                    | 3-Phase, 400V models: | ---    | 6.5A @ 380Vac                                                                                                                                                                                                                                                                                |        |        |        |        |        |        |          |          |         |
|                                                                                    | 3-Phase, 480V models: | ---    | 6.5A @ 380Vac                                                                                                                                                                                                                                                                                |        |        |        |        |        |        |          |          |         |
|                                                                                    | 1-Phase, 200V models: | ---    | 21A @ 200Vac                                                                                                                                                                                                                                                                                 |        |        |        |        |        |        |          |          |         |
| 3.Power Factor (Typ)                                                               |                       | ---    | For 3-Phase: 0.94 @ 200/380Vac, rated output power.<br>For 1-Phase: 0.99 @ 200Vac, rated output power.                                                                                                                                                                                       |        |        |        |        |        |        |          |          |         |
| 4.Efficiency (Typ) (*5) (*22)                                                      |                       | %      | 88                                                                                                                                                                                                                                                                                           | 89     | 89.5   | 90     | 90     | 90.5   | 90.5   | 90.5     | 90.5     | 90.5    |
| 5.Inrush current (*6)                                                              |                       | A      | Less than 50A                                                                                                                                                                                                                                                                                |        |        |        |        |        |        |          |          |         |
| CONSTANT VOLTAGE MODE                                                              |                       | V      | 10                                                                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150      | 300      | 600     |
| 1.Max. Line regulation (*7)                                                        |                       | ---    | 0.01% of rated output voltage                                                                                                                                                                                                                                                                |        |        |        |        |        |        |          |          |         |
| 2.Max. Load regulation (*8)                                                        |                       | ---    | 0.01% of rated output voltage +5mV                                                                                                                                                                                                                                                           |        |        |        |        |        |        |          |          |         |
| 3.Ripple and noise (p-p, 20MHz) (*9)                                               |                       | mV     | 75                                                                                                                                                                                                                                                                                           | 75     | 75     | 75     | 80     | 80     | 100    | 120      | 200      | 480     |
| 4.Ripple r.m.s. 5Hz~1MHz (*9)                                                      |                       | mV     | 8                                                                                                                                                                                                                                                                                            | 10     | 10     | 12     | 15     | 15     | 15     | 20       | 60       | 100     |
| 5.Temperature coefficient                                                          |                       | PPM/°C | 50PPM/°C from rated output voltage, following 30 minutes warm-up.                                                                                                                                                                                                                            |        |        |        |        |        |        |          |          |         |
| 6.Temperature stability                                                            |                       | ---    | 0.01% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temp.                                                                                                                                                                                             |        |        |        |        |        |        |          |          |         |
| 7. Warm-up drift                                                                   |                       | ---    | Less than 0.05% of rated output voltage+2mV over 30 minutes following power on.                                                                                                                                                                                                              |        |        |        |        |        |        |          |          |         |
| 8.Remote sense compensation/wire (*10)                                             |                       | V      | 2                                                                                                                                                                                                                                                                                            | 2      | 5      | 5      | 5      | 5      | 5      | 5        | 5        | 5       |
| 9.Up-prog. Response time (*11)                                                     |                       | mS     | 30                                                                                                                                                                                                                                                                                           | 30     | 30     | 30     | 50     | 50     | 50     | 50       | 50       | 100     |
| 10.Down-prog.response time:                                                        | Full load (*11)       | mS     | 50                                                                                                                                                                                                                                                                                           | 50     | 80     | 80     | 80     | 100    | 100    | 100      | 100      | 200     |
|                                                                                    | No load (*12)         | mS     | 450                                                                                                                                                                                                                                                                                          | 600    | 800    | 900    | 1100   | 1300   | 2100   | 2000     | 3000     | 3100    |
| 11.Transient response time                                                         |                       | mS     | 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.                                                 |        |        |        |        |        |        |          |          |         |
| 12.Start up delay                                                                  |                       | Sec    | Less than 6 Sec                                                                                                                                                                                                                                                                              |        |        |        |        |        |        |          |          |         |
| CONSTANT CURRENT MODE                                                              |                       | V      | 10                                                                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150      | 300      | 600     |
| 1.Max. Line regulation (*7)                                                        |                       | ---    | 0.05% of rated output current.                                                                                                                                                                                                                                                               |        |        |        |        |        |        |          |          |         |
| 2.Max. Load regulation (*13)                                                       |                       | ---    | 0.08% of rated output current.                                                                                                                                                                                                                                                               |        |        |        |        |        |        |          |          |         |
| 3.Ripple r.m.s. @ rated voltage. 3-Phase (*14)                                     |                       | mA     | ≤800                                                                                                                                                                                                                                                                                         | ≤450   | ≤300   | ≤150   | ≤100   | ≤70    | ≤45    | ≤30      | ≤12      | ≤5      |
| 4.Ripple r.m.s. @ rated voltage. 1-Phase (*14)                                     |                       | mA     | ≤1200                                                                                                                                                                                                                                                                                        | ≤600   | ≤300   | ≤300   | ≤200   | ≤100   | ≤60    | ≤40      | ≤12      | ≤8      |
| 5.Temperature coefficient                                                          |                       | PPM/°C | 10V~100V 100PPM/°C from rated output current, following 30 minutes warm-up.<br>150V~600V 70PPM/°C from rated output current, following 30 minutes warm-up.                                                                                                                                   |        |        |        |        |        |        |          |          |         |
| 6.Temperature stability                                                            |                       | ---    | 0.01% of rated Iout over 8hrs. interval following 30 minutes warm-up. Constant line, load & temperature.                                                                                                                                                                                     |        |        |        |        |        |        |          |          |         |
| 7. Warm-up drift                                                                   |                       | ---    | 10V~100V model: Less than +/-0.25% of rated output current over 30 minutes following power on.<br>150V~600V: 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 (*15)                                                   |                       | ---    | 0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.4% of rated Iout.                                                                                                                                                                                                       |        |        |        |        |        |        |          |          |         |
| 3.Vout resistor programming                                                        |                       | ---    | 0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Vout.                                                                                                                                                                                               |        |        |        |        |        |        |          |          |         |
| 4.Iout resistor programming (*15)                                                  |                       | ---    | 0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Iout.                                                                                                                                                                                               |        |        |        |        |        |        |          |          |         |
| 5.Output voltage monitor                                                           |                       | ---    | 0~5V or 0~10V, user selectable. Accuracy: +/-0.5%.                                                                                                                                                                                                                                           |        |        |        |        |        |        |          |          |         |
| 6.Output current monitor (*15)                                                     |                       | ---    | 0~5V or 0~10V, user selectable. Accuracy: +/-0.5%.                                                                                                                                                                                                                                           |        |        |        |        |        |        |          |          |         |
| 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. Remote: 0~0.6V or short. Local: 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 (500ohm impedance)=Fail                                                                                                                                                                                                                                                          |        |        |        |        |        |        |          |          |         |
| FUNCTIONS AND FEATURES                                                             |                       |        |                                                                                                                                                                                                                                                                                              |        |        |        |        |        |        |          |          |         |
| 1. Parallel operation                                                              |                       | ---    | Possible. Up to 4 identical units in Master/Slave mode. Refer to instruction manual.                                                                                                                                                                                                         |        |        |        |        |        |        |          |          |         |
| 2. Series operation                                                                |                       | ---    | Possible. Two identical units. Refer to instruction manual.                                                                                                                                                                                                                                  |        |        |        |        |        |        |          |          |         |
| 3. Daisy chain                                                                     |                       | ---    | Power supplies can be connected in Daisy chain to synchronize their turn-on and turn-off.                                                                                                                                                                                                    |        |        |        |        |        |        |          |          |         |
| 4. Constant power control                                                          |                       | ---    | Limits the output power to a programmed value. Programming via the communication ports or the front panel.                                                                                                                                                                                   |        |        |        |        |        |        |          |          |         |
| 5. Output resistance control                                                       |                       | ---    | Emulates series resistance. Resistance range: 1~1000mΩ. Programming via the communication ports or the front panel.                                                                                                                                                                          |        |        |        |        |        |        |          |          |         |
| 6. Slew rate control                                                               |                       | ---    | Programmable Output rise and Output fall slew rate. Programming range: 0.0001~999.99 V/mSec. or A/mSec. Programming via the communication ports or the front panel.                                                                                                                          |        |        |        |        |        |        |          |          |         |
| 7. Arbitrary waveforms                                                             |                       | ---    | Profiles of up to 100 steps can be stored in 4 memory cells. Activation by command via the communication ports or by the front panel.                                                                                                                                                        |        |        |        |        |        |        |          |          |         |
| PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional IEEE(*19)(*20) Interfaces) |                       | V      | 10                                                                                                                                                                                                                                                                                           | 20     | 30     | 40     | 60     | 80     | 100    | 150      | 300      | 600     |
| 1.Vout programming accuracy (*16)                                                  |                       | ---    | 0.05% of rated output voltage                                                                                                                                                                                                                                                                |        |        |        |        |        |        |          |          |         |
| 2.Iout programming accuracy (*15)                                                  |                       | ---    | 0.1% of actual output current+0.2% 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 (*15)                                                     |                       | ---    | 0.2% of rated output current                                                                                                                                                                                                                                                                 |        |        |        |        |        |        |          |          |         |
| 7.Vout readback resolution (of rated output voltage)                               |                       | %      | 0.011%                                                                                                                                                                                                                                                                                       | 0.006% | 0.004% | 0.003% | 0.002% | 0.002% | 0.011% | 0.007%   | 0.004%   | 0.002%  |
| 8.Iout readback resolution (of rated output current)                               |                       | %      | 0.004%                                                                                                                                                                                                                                                                                       | 0.007% | 0.010% | 0.002% | 0.003% | 0.004% | 0.004% | 0.006%   | 0.010%   | 0.003%  |

## GENESYS™ 5kW SERIES SPECIFICATIONS

| OUTPUT RATING                                                                      |                       | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 50     | 60     | 80     | 100    | 150    | 200    | 300    | 400    | 500    | 600    |
|------------------------------------------------------------------------------------|-----------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 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      | 500 (*3)                                                                                                                                                                                                                                     | 250    | 170    | 125    | 100    | 85     | 65     | 50     | 34     | 25     | 17     | 13     | 10     | 8.5    |
| 3.Rated output power                                                               |                       | W      | 5000                                                                                                                                                                                                                                         | 5000   | 5100   | 5000   | 5000   | 5100   | 5200   | 5000   | 5100   | 5000   | 5100   | 5200   | 5000   | 5100   |
| 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)<br>3-Phase, 400V models: 342~460Vac, 47~63Hz (Covers 380/400/415Vac)<br>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: | ---    | 17.5A @ 200Vac                                                                                                                                                                                                                               |        |        |        |        |        |        |        |        |        |        |        |        |        |
|                                                                                    | 3-Phase, 400V models: | ---    | 9.2A @ 380Vac                                                                                                                                                                                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
|                                                                                    | 3-Phase, 480V models: | ---    | 9.2A @ 380Vac                                                                                                                                                                                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 3.Power Factor (Typ)                                                               |                       | ---    | 0.94 @ 200/380Vac, rated output power.                                                                                                                                                                                                       |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 4.Efficiency (Typ) (*5) (*22)                                                      |                       | %      | 89 (*21)                                                                                                                                                                                                                                     | 91     | 91     | 91     | 90     | 91     | 91     | 91     | 91     | 91     | 92     | 92     | 92     | 92     |
| 5.Inrush current (*6)                                                              |                       | A      | Less than 50A                                                                                                                                                                                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| CONSTANT VOLTAGE MODE                                                              |                       | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 50     | 60     | 80     | 100    | 150    | 200    | 300    | 400    | 500    | 600    |
| 1.Max. Line regulation (*7)                                                        |                       | ---    | 0.01% of rated output voltage                                                                                                                                                                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 2.Max. Load regulation (*8)                                                        |                       | ---    | 0.01% of rated output voltage +5mV                                                                                                                                                                                                           |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 3.Ripple and noise (p-p, 20MHz) (*9)                                               |                       | mV     | 75                                                                                                                                                                                                                                           | 75     | 75     | 75     | 75     | 75     | 80     | 90     | 120    | 200    | 200    | 400    | 450    | 480    |
| 4.Ripple r.m.s. 5Hz~1MHz (*9)                                                      |                       | mV     | 8                                                                                                                                                                                                                                            | 10     | 12     | 12     | 12     | 12     | 15     | 15     | 20     | 45     | 60     | 80     | 80     | 100    |
| 5.Temperature coefficient                                                          |                       | PPM/°C | 50PPM/°C from rated output voltage, following 30 minutes warm-up.                                                                                                                                                                            |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 6.Temperature stability                                                            |                       | ---    | 0.01% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temp.                                                                                                                                             |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 7. Warm-up drift                                                                   |                       | ---    | Less than 0.05% of rated output voltage+2mV over 30 minutes following power on.                                                                                                                                                              |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 8.Remote sense compensation/wire (*10)                                             |                       | V      | 2                                                                                                                                                                                                                                            | 2      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      |
| 9.Up-prog. Response time (*11)                                                     |                       | mS     | 30                                                                                                                                                                                                                                           | 30     | 30     | 30     | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 100    | 100    | 100    |
| 10.Down-prog.response time:                                                        | Full load (*11)       | mS     | 50                                                                                                                                                                                                                                           | 50     | 80     | 80     | 80     | 80     | 100    | 100    | 100    | 100    | 100    | 150    | 200    | 200    |
|                                                                                    | No load (*12)         | mS     | 300                                                                                                                                                                                                                                          | 600    | 800    | 900    | 950    | 1000   | 1200   | 1900   | 2000   | 2500   | 3000   | 4000   | 4000   | 3000   |
| 11.Transient response time                                                         |                       | mS     | 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. |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 12.Start up delay                                                                  |                       | Sec    | Less than 5 Sec                                                                                                                                                                                                                              |        |        |        |        |        |        |        |        |        |        |        |        |        |
| CONSTANT CURRENT MODE                                                              |                       | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 50     | 60     | 80     | 100    | 150    | 200    | 300    | 400    | 500    | 600    |
| 1.Max. Line regulation (*7)                                                        |                       | ---    | 0.05% of rated output current.                                                                                                                                                                                                               |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 2.Max. Load regulation (*13)                                                       |                       | ---    | 0.08% of rated output current.                                                                                                                                                                                                               |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 3.Ripple r.m.s. @ rated voltage. B.W 5Hz~1MHz (*14)                                |                       | mA     | ≤1200                                                                                                                                                                                                                                        | ≤600   | ≤300   | ≤150   | ≤130   | ≤100   | ≤70    | ≤45    | ≤45    | ≤45    | ≤15    | ≤12    | ≤10    | ≤8     |
| 5.Temperature coefficient                                                          |                       | PPM/°C | 10V~100V 100PPM/°C from rated output current, following 30 minutes warm-up.<br>150V~600V 70PPM/°C from rated output current, following 30 minutes warm-up.                                                                                   |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 6.Temperature stability                                                            |                       | ---    | 0.01% of rated Iout over 8hrs. interval following 30 minutes warm-up. Constant line, load & temperature.                                                                                                                                     |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 7. Warm-up drift                                                                   |                       | ---    | 10V~100V model: Less than +/-0.25% of rated output current over 30 minutes following power on.<br>150V~600V: 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 (*15)                                                   |                       | ---    | 0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.4% of rated Iout.                                                                                                                                                       |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 3.Vout resistor programming                                                        |                       | ---    | 0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Vout.                                                                                                                                               |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 4.Iout resistor programming (*15)                                                  |                       | ---    | 0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Iout.                                                                                                                                               |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 5.Output voltage monitor                                                           |                       | ---    | 0~5V or 0~10V, user selectable. Accuracy: +/-0.5% of rated Vout.                                                                                                                                                                             |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 6.Output current monitor (*15)                                                     |                       | ---    | 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. Remote: 0~0.6V or short. Local: 2~30V or open.                                                                                                                                 |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 7. Programmed signals                                                              |                       | ---    | Two open drain programmable signals. Maximum output 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 (500ohm impedance)=Fail                                                                                                                                                                                                          |        |        |        |        |        |        |        |        |        |        |        |        |        |
| FUNCTIONS AND FEATURES                                                             |                       |        |                                                                                                                                                                                                                                              |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 1. Parallel operation                                                              |                       | ---    | Possible. Up to twelve (12) identical units in Master/Slave mode. Refer to instruction manual. For more power please consult with Factory.                                                                                                   |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 2. Series operation                                                                |                       | ---    | Possible. Two identical units. Refer to instruction manual.                                                                                                                                                                                  |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 3. Daisy chain                                                                     |                       | ---    | Power supplies can be connected in Daisy chain to synchronize their turn-on and turn-off.                                                                                                                                                    |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 4. Constant power control                                                          |                       | ---    | Limits the output power to a programmed value. Programming via the communication ports or the front panel.                                                                                                                                   |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 5. Output resistance control                                                       |                       | ---    | Emulates series resistance. Resistance range: 1~1000mΩ. Programming via the communication ports or the front panel.                                                                                                                          |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 6. Slew rate control                                                               |                       | ---    | Programmable Output rise and Output fall slew rate. Programming range: 0.0001~999.99 V/mSec. or A/mSec. Programming via the communication ports or the front panel.                                                                          |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 7. Arbitrary waveforms                                                             |                       | ---    | Profiles of up to 100 steps can be stored in 4 memory cells. Activation by command via the communication ports or by the front panel.                                                                                                        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional IEEE(*19)(*20) Interfaces) |                       | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 50     | 60     | 80     | 100    | 150    | 200    | 300    | 400    | 500    | 600    |
| 1.Vout programming accuracy (*16)                                                  |                       | ---    | 0.05% of rated output voltage                                                                                                                                                                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 2.Iout programming accuracy (*15)                                                  |                       | ---    | 0.1% of actual output current+0.2% 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 (*15)                                                     |                       | ---    | 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%                                                                                                                                                                                                                                       | 0.005% | 0.006% | 0.009% | 0.011% | 0.002% | 0.002% | 0.003% | 0.004% | 0.004% | 0.006% | 0.008% | 0.001% | 0.002% |

## GENESYS™ 2.7kW/3.4kW/5kW SERIES SPECIFICATIONS

| 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 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 limit (UVL)      |  | ---      | Prevents adjustment of Vout below limit.                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| 8. 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,IEEE,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, 5K/10K 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/IEEE communication, Trigger, Load/Store Cell.                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| ENVIRONMENTAL CONDITIONS                 |  |          |                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| 1.Operating temperature                  |  | ---      | 0~50°C, 100% load.                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| 2.Storage temperature                    |  | ---      | -30~85°C                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| 3.Operating humidity                     |  | %        | 20~90% RH (no condensation).                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| 4.Storage humidity                       |  | %        | 10~95% RH (no condensation).                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| 5.Altitude (*17)                         |  | ---      | Operating: 10000ft (3000m), output current derating 2%/100m or Ta derating 1°C/100m above 2000m. Non operating: 40000ft (12000m).                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| MECHANICAL                               |  |          |                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| 1.Cooling                                |  | ---      | Forced air cooling by internal fans. Air flow direction: from Front panel to power supply rear                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| 2.Weight                                 |  | kg       | 2.7kW/3.4kW - Less than 6.25kg. 5kW - Less than 7.5kg.                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| 3.Dimensions (WxHxD)                     |  | mm       | W: 423, H: 43.6, D: 441.5 (Without busbars and busbars cover),<br>W: 423, H: 43.6, D: 553.2 (Including busbars and busbars cover) (Refer to Outline drawing).                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| 4.Vibration                              |  | ---      | MIL-810G, method 514.6, Procedure I, test condition Annex C - 2.1.3.1                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| 5.Shock                                  |  | ---      | Less than 20G, half sine, 11mSec. Unit is unpacked.                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| SAFETY/EMC                               |  |          |                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| 1.Applicable standards:                  |  | Safety   | ---                                                                                                                                                                                                                                                         | UL61010-1, CSA22.2 No.61010-1, IEC61010-1, EN61010-1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |        |          |         |        |          |          |         |          |       |          |         |
| 1.1. Interface classification            |  |          | ---                                                                                                                                                                                                                                                         | Vouts≤50V Models: Output, J1, J2, J3, J4, J5, J6, J7, J8 (sense) & J9 (communication options) are Non Hazardous.<br>60≤Vouts≤600V Models: Output & J8 (sense) are hazardous, J1, J2, J3, J4, J5, J6, J7 & J9 (communication options) are Non Hazardous.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |        |          |         |        |          |          |         |          |       |          |         |
| 1.2 Withstand voltage                    |  |          | ---                                                                                                                                                                                                                                                         | Vouts≤50V Models: Input – Output & J8 (sense), J1, J2, J3, J4, J5, J6, J7 & J9 (communication options): 4242VDC 1min, Input - Ground: 2835VDC 1min.<br>60V≤Vouts≤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.<br>Output & J8 (sense) - Ground: 1500VDC 1min, Input - Ground: 2835VDC 1min.<br>100V<Vouts≤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.<br>Output & J8 (sense) - Ground: 2500VDC 1min.<br>Input - Ground: 2835VDC 1min. |      |        |          |         |        |          |          |         |          |       |          |         |
| 1.3 Insulation resistance                |  |          | ---                                                                                                                                                                                                                                                         | 100Mohm at 25°C, 70%RH. Output to Ground 500VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |        |          |         |        |          |          |         |          |       |          |         |
| 2.Conducted emission                     |  |          | ---                                                                                                                                                                                                                                                         | IEC/EN61204-3 Industrial environment, Annex H table H.1 , FCC Part 15-A, VCCI-A.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |      |        |          |         |        |          |          |         |          |       |          |         |
| 3.Radiated emission                      |  |          | ---                                                                                                                                                                                                                                                         | IEC/EN61204-3 Industrial environment, Annex H table H.3 and H4, FCC Part 15-A, VCCI-A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |        |          |         |        |          |          |         |          |       |          |         |
| 4. EMC compliance                        |  | EMC(*18) | ---                                                                                                                                                                                                                                                         | IEC/EN61204-3 Industrial environment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |        |          |         |        |          |          |         |          |       |          |         |

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

### NOTES:

- \* 1: Minimum voltage is guaranteed to maximum 0.1% of rated output voltage.
- \* 2: Minimum current is guaranteed to maximum 0.2% of rated output current.
- \* 3: G5kW : Derate 5A/1°C above 40°C G3.4kW : Derate 5A/1°C above 40°C.
- \* 4: For cases where conformance to various safety standards (UL, IEC, etc...) is required, to be described as 190-240Vac (50/60Hz) for 3-Phase
- \* 5: 3-Phase 200V models: At 200Vac input voltage, 3-Phase 400/480V: At 380Vac input voltage. With rated output power.
- \* 6: Not including EMI filter inrush current, less than 0.2mSec.
- \* 7: 3-Phase 200V models: 170~265Vac, 3-Phase 400V models: 342~460Vac, 3-Phase 480V models: 342~528Vac. Constant load.
- \* 8: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.
- \* 9: For 10V~150V models: Measured with JEITA RC-9131C (1:1) probe. For 200~600V model: Measured with 100:1 probe.
- \* 10: The maximum voltage on the power supply terminals must not exceed the rated voltage.
- \* 11: From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated, resistive load.
- \* 12: From 90% to 10% of Rated Output Voltage.
- \* 13: For load voltage change, equal to the unit voltage rating, constant input voltage.
- \* 14: For 10V model, the ripple is measured at 20~100% of rated output voltage and rated output current. For other models, the ripple is measured at 10~100% of rated output voltage and rated output current. B.W 5Hz~1MHz.
- \* 15: The Constant Current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift.
- \* 16: Measured at the sensing point.
- \* 17: For 10V model Ta derating 2°C/100m.
- \* 18: Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m.
- \* 19: Max. ambient temperature for using IEEE is 40°C.
- \* 20: For 10V model only: Max. output current for using IEEE is 400A up to 40°C and 450A up to 30°C.
- \* 21: For 10V model only: For 3-Phase 200V efficiency is 88.5%
- \* 22: Typ. at Ta=25°C, rated output power.

## GENESYS™ GSP10kW SERIES SPECIFICATIONS

| OUTPUT RATING                                                                       |                       | GSP    | 10-1000                                                                                                                                                                                                                                      | 20-500 | 30-340 | 40-250 | 50-200 | 60-170 | 80-130 | 100-100 | 150-68 | 200-50 | 300-34 | 400-26 | 500-20 | 600-17 |
|-------------------------------------------------------------------------------------|-----------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|
| 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      | 1000 (*3)                                                                                                                                                                                                                                    | 500    | 340    | 250    | 200    | 170    | 130    | 100     | 68     | 50     | 34     | 26     | 20     | 17     |
| 3.Rated output power                                                                |                       | kW     | 10                                                                                                                                                                                                                                           | 10     | 10.2   | 10     | 10     | 10.2   | 10.4   | 10      | 10.2   | 10     | 10.2   | 10.4   | 10     | 10.2   |
| 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)<br>3-Phase, 400V models: 342~460Vac, 47~63Hz (Covers 380/400/415Vac)<br>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: | ---    | 35A @ 200Vac                                                                                                                                                                                                                                 |        |        |        |        |        |        |         |        |        |        |        |        |        |
|                                                                                     | 3-Phase, 400V models: | ---    | 18.4A @ 380Vac                                                                                                                                                                                                                               |        |        |        |        |        |        |         |        |        |        |        |        |        |
|                                                                                     | 3-Phase, 480V models: | ---    | 18.4A @ 380Vac                                                                                                                                                                                                                               |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 3.Power Factor (Typ)                                                                |                       | ---    | 0.94 @ 200/380Vac, rated output power.                                                                                                                                                                                                       |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 4.Efficiency (Typ) (*5) (*22)                                                       |                       | %      | 89 (*21)                                                                                                                                                                                                                                     | 90     | 91     | 91     | 91     | 91     | 91     | 91      | 91     | 91     | 92     | 92     | 91     | 92     |
| 5.Inrush current (*6)                                                               |                       | A      | Less than 100A                                                                                                                                                                                                                               |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 6.AC line phase imbalance                                                           |                       | %      | < 5%                                                                                                                                                                                                                                         |        |        |        |        |        |        |         |        |        |        |        |        |        |
| CONSTANT VOLTAGE MODE                                                               |                       | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 50     | 60     | 80     | 100     | 150    | 200    | 300    | 400    | 500    | 600    |
| 1.Max. Line regulation (*7)                                                         |                       | ---    | 0.01% of rated output voltage                                                                                                                                                                                                                |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 2.Max. Load regulation (*8)                                                         |                       | ---    | 0.01% of rated output voltage +5mV                                                                                                                                                                                                           |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 3.Ripple and noise (p-p, 20MHz) (*9)                                                |                       | mV     | 75                                                                                                                                                                                                                                           | 75     | 75     | 75     | 75     | 75     | 80     | 90      | 120    | 200    | 200    | 400    | 450    | 480    |
| 4.Ripple r.m.s. 5Hz~1MHz (*9)                                                       |                       | mV     | 8                                                                                                                                                                                                                                            | 10     | 12     | 12     | 12     | 12     | 15     | 15      | 20     | 45     | 60     | 80     | 80     | 100    |
| 5.Temperature coefficient                                                           |                       | PPM/°C | 50PPM/°C from rated output voltage, following 30 minutes warm-up.                                                                                                                                                                            |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 6.Temperature stability                                                             |                       | ---    | 0.01% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temp.                                                                                                                                             |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 7. Warm-up drift                                                                    |                       | ---    | Less than 0.05% of rated output voltage+2mV over 30 minutes following power on.                                                                                                                                                              |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 8.Remote sense compensation/wire (*10)                                              |                       | V      | 2                                                                                                                                                                                                                                            | 2      | 5      | 5      | 5      | 5      | 5      | 5       | 5      | 5      | 5      | 5      | 5      | 5      |
| 9.Up-prog. Response time (*11)                                                      |                       | mS     | 30                                                                                                                                                                                                                                           | 30     | 30     | 30     | 50     | 50     | 50     | 50      | 50     | 50     | 50     | 100    | 100    | 100    |
| 10.Down-prog.response time:                                                         | Full load (*11)       | mS     | 50                                                                                                                                                                                                                                           | 50     | 80     | 80     | 80     | 80     | 100    | 100     | 100    | 100    | 100    | 150    | 200    | 200    |
|                                                                                     | No load (*12)         | mS     | 300                                                                                                                                                                                                                                          | 600    | 800    | 900    | 950    | 1000   | 1200   | 1900    | 2000   | 2500   | 3000   | 4000   | 4000   | 3000   |
| 11.Transient response time                                                          |                       | mS     | 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. |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 12.Start up delay                                                                   |                       | Sec    | Less than 7 Sec                                                                                                                                                                                                                              |        |        |        |        |        |        |         |        |        |        |        |        |        |
| CONSTANT CURRENT MODE                                                               |                       | ---    | 0.05% of rated output current.                                                                                                                                                                                                               |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 1.Max. Line regulation (*7)                                                         |                       | ---    | 0.08% of rated output current.                                                                                                                                                                                                               |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 2.Max. Load regulation (*13)                                                        |                       | ---    | 0.08% of rated output current.                                                                                                                                                                                                               |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 3.Ripple r.m.s. @ 10% rated voltage. B.W 5Hz~1MHz. (*14)                            |                       | mA     | 1500                                                                                                                                                                                                                                         | 1200   | 600    | 300    | 200    | 150    | 100    | 70      | 45     | 45     | 15     | 15     | 12     | 10     |
| 4.Ripple r.m.s. @ 100% rated voltage. B.W 5Hz~1MHz. (TA25°C)                        |                       | mA     | 1200                                                                                                                                                                                                                                         | 700    | 300    | 150    | 100    | 75     | 50     | 35      | 23     | 23     | 7.5    | 7.5    | 8      | 6      |
| 5.Temperature coefficient                                                           |                       | PPM/°C | 10V~100V 100PPM/°C from rated output current, following 30 minutes warm-up.<br>150V~600V 70PPM/°C from rated output current, following 30 minutes warm-up.                                                                                   |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 6.Temperature stability                                                             |                       | ---    | 0.01% of rated Iout over 8hrs. interval following 30 minutes warm-up. Constant line, load & temperature.                                                                                                                                     |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 7. Warm-up drift                                                                    |                       | ---    | 10V~100V model: Less than +/-0.25% of rated output current over 30 minutes following power on.<br>150V~600V: Less than +/-0.15% of rated output current over 30 minutes following power on.                                                  |        |        |        |        |        |        |         |        |        |        |        |        |        |
| ANALOG PROGRAMMING AND MONITORING (ISOLATED FROM THE OUTPUT)                        |                       | ---    | 0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.15% of rated Vout.                                                                                                                                                      |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 1.Vout voltage programming                                                          |                       | ---    | 0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.4% of rated Iout.                                                                                                                                                       |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 2.Iout voltage programming (*15)                                                    |                       | ---    | 0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Vout.                                                                                                                                               |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 3.Vout resistor programming                                                         |                       | ---    | 0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Iout.                                                                                                                                               |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 4.Iout resistor programming (*15)                                                   |                       | ---    | 0~5V or 0~10V, user selectable. Accuracy: +/-0.5%. Of rated Vout.                                                                                                                                                                            |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 5.Output voltage monitor                                                            |                       | ---    | 0~5V or 0~10V, user selectable. Accuracy: +/-0.5%. Of rated Iout.                                                                                                                                                                            |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 6.Output current monitor (*15)                                                      |                       | ---    | 0~5V or 0~10V, user selectable. Accuracy: +/-0.5%. Of rated Iout.                                                                                                                                                                            |        |        |        |        |        |        |         |        |        |        |        |        |        |
| SIGNALS AND CONTROLS (ISOLATED FROM THE OUTPUT)                                     |                       | ---    | Power supply output monitor. Open collector. Output On: On. Output Off: Off. Maximum Voltage: 30V, Maximum Sink Current: 10mA.                                                                                                               |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 1. Power supply OK #1 signal                                                        |                       | ---    | CV/CC Monitor. Open collector. CC mode: On. CV mode: Off. Maximum Voltage: 30V, Maximum Sink Current: 10mA.                                                                                                                                  |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 2. CV/CC signal                                                                     |                       | ---    | Enable/Disable analog programming control by electrical signal or dry contact. Remote: 0~0.6V or short. Local: 2~30V or open.                                                                                                                |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 3. LOCAL/REMOTE Analog control                                                      |                       | ---    | analog programming control monitor signal. Open collector. Remote: On. Local: Off. Maximum Voltage: 30V, Maximum Sink Current: 10mA.                                                                                                         |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 4. LOCAL/REMOTE Analog signal                                                       |                       | ---    | Enable/Disable PS output by electrical signal or dry contact. 0~0.6V or short, 2~30V or open. User selectable logic.                                                                                                                         |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 5. ENABLE/DISABLE signal                                                            |                       | ---    | Enable/Disable PS output by electrical signal or dry contact. Remote: 0~0.6V or short. Local: 2~30V or open.                                                                                                                                 |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 6. INTERLOCK (ILC) control                                                          |                       | ---    | Two open drain programmable signals. Maximum voltage 25V, Maximum sink current 100mA (Shunted by 27V zener)                                                                                                                                  |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 7. Programmed 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.                                    |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 8. TRIGGER IN / TRIGGER OUT signals                                                 |                       | ---    | By electrical Voltage: 0~0.6V/2~30V or dry contact.                                                                                                                                                                                          |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 9. DAISY_IN/SO control signal                                                       |                       | ---    | 4~5V=OK, 0V (500ohm impedance)=Fail                                                                                                                                                                                                          |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 10. DAISY_OUT/PS_OK #2 signal                                                       |                       | ---    |                                                                                                                                                                                                                                              |        |        |        |        |        |        |         |        |        |        |        |        |        |
| FUNCTIONS AND FEATURES                                                              |                       | ---    | Possible. Up to four (4) identical GSP units. For more power please consult with Factory.                                                                                                                                                    |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 1. Parallel operation                                                               |                       | ---    | Consult with Factory                                                                                                                                                                                                                         |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 2. Series operation                                                                 |                       | ---    | Power supplies can be connected in Daisy chain to synchronize their turn-on and turn-off.                                                                                                                                                    |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 3. Daisy chain                                                                      |                       | ---    | Limits the output power to a programmed value. Programming via the communication ports or the front panel.                                                                                                                                   |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 4. Constant power control                                                           |                       | ---    | Emulates series resistance. Resistance range: 1~1000mΩ. Programming via the communication ports or the front panel.                                                                                                                          |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 5. Output resistance control                                                        |                       | ---    | Programmable Output rise and Output fall slew rate. Programming range: 0.0001~999.99 V/mSec. or A/mSec. Programming via the communication ports or the front panel.                                                                          |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 6. Slew rate control                                                                |                       | ---    | Profiles of up to 100 steps can be stored in 4 memory cells. Activation by command via the communication ports or by the front panel.                                                                                                        |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 7. Arbitrary waveforms                                                              |                       | ---    |                                                                                                                                                                                                                                              |        |        |        |        |        |        |         |        |        |        |        |        |        |
| PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional IEEE (*19)(*20) Interfaces) |                       | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 50     | 60     | 80     | 100     | 150    | 200    | 300    | 400    | 500    | 600    |
| 1.Vout programming accuracy (*16)                                                   |                       | ---    | 0.05% of rated output voltage                                                                                                                                                                                                                |        |        |        |        |        |        |         |        |        |        |        |        |        |
| 2.Iout programming accuracy (*15)                                                   |                       | ---    | 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 (*15)                                                      |                       | ---    | 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)                                |                       | %      | 0.012%                                                                                                                                                                                                                                       | 0.003% | 0.004% | 0.005% | 0.006% | 0.007% | 0.009% | 0.012%  | 0.002% | 0.003% | 0.003% | 0.004% | 0.006% | 0.006% |

# GENESYS™ GSP15kW SERIES SPECIFICATIONS

| OUTPUT RATING                                                                       |                       | GSP    | 10-1500                                                                                                                                                                                                                                      | 20-750 | 30-510 | 40-375 | 50-300 | 60-255 | 80-195 | 100-150 | 150-102 | 200-75 | 300-51 | 400-39 | 500-30 | 600-25.5 |
|-------------------------------------------------------------------------------------|-----------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|---------|---------|--------|--------|--------|--------|----------|
| 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      | 1500 (*3)                                                                                                                                                                                                                                    | 750    | 510    | 375    | 300    | 255    | 195    | 150     | 102     | 75     | 51     | 39     | 30     | 25.5     |
| 3.Rated output power                                                                |                       | kW     | 15                                                                                                                                                                                                                                           | 15     | 15.3   | 15     | 15     | 15.3   | 15.6   | 15      | 15.3    | 15     | 15.3   | 15.6   | 15     | 15.3     |
| 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)<br>3-Phase, 400V models: 342~460Vac, 47~63Hz (Covers 380/400/415Vac)<br>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: | ---    | 52.5A @ 200Vac                                                                                                                                                                                                                               |        |        |        |        |        |        |         |         |        |        |        |        |          |
|                                                                                     | 3-Phase, 400V models: | ---    | 27.6A @ 380Vac                                                                                                                                                                                                                               |        |        |        |        |        |        |         |         |        |        |        |        |          |
|                                                                                     | 3-Phase, 480V models: | ---    | 27.6A @ 380Vac                                                                                                                                                                                                                               |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 3.Power Factor (Typ)                                                                |                       | ---    | 0.94 @ 200/380Vac, rated output power.                                                                                                                                                                                                       |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 4.Efficiency (Typ) (*5) (*22)                                                       |                       | %      | 89 (*21)                                                                                                                                                                                                                                     | 90     | 91     | 91     | 91     | 91     | 91     | 91      | 91      | 91     | 92     | 92     | 91     | 92       |
| 5.Inrush current (*6)                                                               |                       | A      | Less than 150A                                                                                                                                                                                                                               |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 6.AC line phase imbalance                                                           |                       | %      | < 5%                                                                                                                                                                                                                                         |        |        |        |        |        |        |         |         |        |        |        |        |          |
| CONSTANT VOLTAGE MODE                                                               |                       | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 50     | 60     | 80     | 100     | 150     | 200    | 300    | 400    | 500    | 600      |
| 1.Max. Line regulation (*7)                                                         |                       | ---    | 0.01% of rated output voltage                                                                                                                                                                                                                |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 2.Max. Load regulation (*8)                                                         |                       | ---    | 0.01% of rated output voltage +5mV                                                                                                                                                                                                           |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 3.Ripple and noise (p-p, 20MHz) (*9)                                                |                       | mV     | 75                                                                                                                                                                                                                                           | 75     | 75     | 75     | 75     | 75     | 80     | 90      | 120     | 200    | 200    | 400    | 450    | 480      |
| 4.Ripple r.m.s. 5Hz~1MHz (*9)                                                       |                       | mV     | 8                                                                                                                                                                                                                                            | 10     | 12     | 12     | 12     | 12     | 15     | 15      | 20      | 45     | 60     | 80     | 80     | 100      |
| 5.Temperature coefficient                                                           |                       | PPM/°C | 50PPM/°C from rated output voltage, following 30 minutes warm-up.                                                                                                                                                                            |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 6.Temperature stability                                                             |                       | ---    | 0.01% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temp.                                                                                                                                             |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 7. Warm-up drift                                                                    |                       | ---    | Less than 0.05% of rated output voltage+2mV over 30 minutes following power on.                                                                                                                                                              |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 8.Remote sense compensation/wire (*10)                                              |                       | V      | 2                                                                                                                                                                                                                                            | 2      | 5      | 5      | 5      | 5      | 5      | 5       | 5       | 5      | 5      | 5      | 5      | 5        |
| 9.Up-prog. Response time (*11)                                                      |                       | mS     | 30                                                                                                                                                                                                                                           | 30     | 30     | 30     | 50     | 50     | 50     | 50      | 50      | 50     | 50     | 100    | 100    | 100      |
| 10.Down-prog.response time:                                                         | Full load (*11)       | mS     | 50                                                                                                                                                                                                                                           | 50     | 80     | 80     | 80     | 80     | 100    | 100     | 100     | 100    | 100    | 150    | 200    | 200      |
|                                                                                     | No load (*12)         | mS     | 300                                                                                                                                                                                                                                          | 600    | 800    | 900    | 950    | 1000   | 1200   | 1900    | 2000    | 2500   | 3000   | 4000   | 4000   | 3000     |
| 11.Transient response time                                                          |                       | mS     | 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. |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 12..Start up delay                                                                  |                       | Sec    | Less than 7 Sec                                                                                                                                                                                                                              |        |        |        |        |        |        |         |         |        |        |        |        |          |
| CONSTANT CURRENT MODE                                                               |                       | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 50     | 60     | 80     | 100     | 150     | 200    | 300    | 400    | 500    | 600      |
| 1.Max. Line regulation (*7)                                                         |                       | ---    | 0.05% of rated output current.                                                                                                                                                                                                               |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 2.Max. Load regulation (*13)                                                        |                       | ---    | 0.08% of rated output current.                                                                                                                                                                                                               |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 3.Ripple r.m.s. @ 10% rated voltage B.W 5Hz~1MHz. (*14)                             |                       | mA     | 2000                                                                                                                                                                                                                                         | 1200   | 600    | 300    | 250    | 180    | 100    | 70      | 45      | 45     | 15     | 15     | 12     | 10       |
| 4.Ripple r.m.s. @ 100% rated voltage. B.W 5Hz~1MHz. (TA 25°C)                       |                       | mA     | 1200                                                                                                                                                                                                                                         | 700    | 300    | 150    | 130    | 90     | 60     | 35      | 23      | 23     | 7.5    | 7.5    | 8      | 6        |
| 5.Temperature coefficient                                                           |                       | PPM/°C | 10V~100V 100PPM/°C from rated output current, following 30 minutes warm-up.<br>150V~600V 70PPM/°C from rated output current, following 30 minutes warm-up.                                                                                   |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 6.Temperature stability                                                             |                       | ---    | 0.01% of rated Iout over 8hrs. interval following 30 minutes warm-up. Constant line, load & temperature.                                                                                                                                     |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 7. Warm-up drift                                                                    |                       | ---    | 10V~100V model: Less than +/-0.25% of rated output current over 30 minutes following power on.<br>150V~600V: 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 (*15)                                                    |                       | ---    | 0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.4% of rated Iout.                                                                                                                                                       |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 3.Vout resistor programming                                                         |                       | ---    | 0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Vout.                                                                                                                                               |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 4.Iout resistor programming (*15)                                                   |                       | ---    | 0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-0.5% of rated Iout.                                                                                                                                               |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 5.Output voltage monitor (*23)                                                      |                       | ---    | 0~5V or 0~10V, user selectable. Accuracy: +/-0.5% of rated Vout.                                                                                                                                                                             |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 6.Output current monitor (*15) (*23)                                                |                       | ---    | 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. Remote: 0~0.6V or short. Local: 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 (500ohm impedance)=Fail                                                                                                                                                                                                          |        |        |        |        |        |        |         |         |        |        |        |        |          |
| FUNCTIONS AND FEATURES                                                              |                       |        |                                                                                                                                                                                                                                              |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 1. Parallel operation                                                               |                       | ---    | Possible. Up to four (4) identical GSP units. For more power please consult with Factory.                                                                                                                                                    |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 2. Series operation                                                                 |                       | ---    | Consult with Factory                                                                                                                                                                                                                         |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 3. Daisy chain                                                                      |                       | ---    | Power supplies can be connected in Daisy chain to synchronize their turn-on and turn-off.                                                                                                                                                    |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 4. Constant power control                                                           |                       | ---    | Limits the output power to a programmed value. Programming via the communication ports or the front panel.                                                                                                                                   |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 5. Output resistance control                                                        |                       | ---    | Emulates series resistance. Resistance range: 1~1000mΩ. Programming via the communication ports or the front panel.                                                                                                                          |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 6. Slew rate control                                                                |                       | ---    | Programmable Output rise and Output fall slew rate. Programming range: 0.0001~999.99 V/mSec. or A/mSec. Programming via the communication ports or the front panel.                                                                          |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 7. Arbitrary waveforms                                                              |                       | ---    | Profiles of up to 100 steps can be stored in 4 memory cells. Activation by command via the communication ports or by the front panel.                                                                                                        |        |        |        |        |        |        |         |         |        |        |        |        |          |
| PROGRAMMING AND READBACK (USB, LAN, RS232/485, Optional IEEE (*19)(*20) Interfaces) |                       | V      | 10                                                                                                                                                                                                                                           | 20     | 30     | 40     | 50     | 60     | 80     | 100     | 150     | 200    | 300    | 400    | 500    | 600      |
| 1.Vout programming accuracy (*16)                                                   |                       | ---    | 0.05% of rated output voltage                                                                                                                                                                                                                |        |        |        |        |        |        |         |         |        |        |        |        |          |
| 2.Iout programming accuracy (*15)                                                   |                       | ---    | 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 (*15)                                                      |                       | ---    | 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)                                |                       | %      | 0.012%                                                                                                                                                                                                                                       | 0.003% | 0.003% | 0.004% | 0.004% | 0.005% | 0.006% | 0.008%  | 0.012%  | 0.002% | 0.003% | 0.003% | 0.003% | 0.005%   |



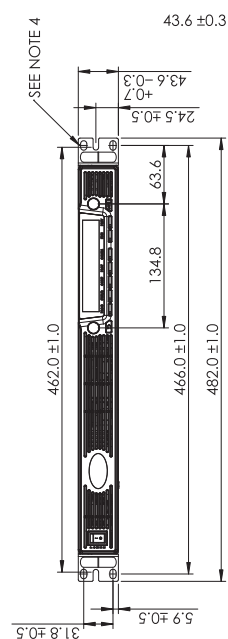
## GENESYS™ GSP10kW/15kW SERIES SPECIFICATIONS

| 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 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 limit (UVL)      |  | ---      | Prevents adjustment of Vout below limit.                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |        |          |         |        |          |          |         |          |       |          |         |
| 8. 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,IEEE,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, 5K/10K 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/IEEE communication, Trigger, Load/Store Cell.                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |        |          |         |        |          |          |         |          |       |          |         |
| ENVIRONMENTAL CONDITIONS                 |  |          |                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |        |          |         |        |          |          |         |          |       |          |         |
| 1.Operating temperature                  |  | ---      | 0~50°C, 100% load.                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |        |          |         |        |          |          |         |          |       |          |         |
| 2.Storage temperature                    |  | ---      | -30~85°C                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |        |          |         |        |          |          |         |          |       |          |         |
| 3.Operating humidity                     |  | %        | 20~90% RH (no condensation).                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |        |          |         |        |          |          |         |          |       |          |         |
| 4.Storage humidity                       |  | %        | 10~95% RH (no condensation).                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |        |          |         |        |          |          |         |          |       |          |         |
| 5.Altitude (*17)                         |  | ---      | Operating: 10000ft (3000m), output current derating 2%/100m or Ta derating 1°C/100m above 2000m. Non operating: 40000ft (12000m).                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |        |          |         |        |          |          |         |          |       |          |         |
| MECHANICAL                               |  |          |                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |        |          |         |        |          |          |         |          |       |          |         |
| 1.Cooling                                |  | ---      | Forced air cooling by internal fans. Air flow direction: from Front panel to power supply rear                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |        |          |         |        |          |          |         |          |       |          |         |
| 2.Weight                                 |  | GSP 10kW | kg                                                                                                                                                                                                                                                          | Less than 15.5kg.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |        |          |         |        |          |          |         |          |       |          |         |
| 3.Dimensions (WxHxD)                     |  | GSP 10kW | mm                                                                                                                                                                                                                                                          | W: 423, H: 88, D: 441.5 (Without busbars and busbars cover),<br>W: 423, H: 88, D: 640 (Including busbars and busbars cover, and strain relief) (Refer to Outline drawing).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |      |        |          |         |        |          |          |         |          |       |          |         |
| 2.Weight                                 |  | GSP 15kW | kg                                                                                                                                                                                                                                                          | Less than 23.5kg.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |        |          |         |        |          |          |         |          |       |          |         |
| 3.Dimensions (WxHxD)                     |  | GSP 15kW | mm                                                                                                                                                                                                                                                          | W: 423, H: 132.5, D: 441.5 (Without busbars and busbars cover),<br>W: 423, H: 132.5, D: 640 (Including busbars and busbars cover, and strain relief) (Refer to Outline drawing).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |        |          |         |        |          |          |         |          |       |          |         |
| 4.Vibration                              |  | ---      | MIL-810G, method 514.6, Procedure I, test condition Annex C - 2.1.3.1                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |        |          |         |        |          |          |         |          |       |          |         |
| 5.Shock                                  |  | ---      | Less than 20G, half sine, 11mSec. Unit is unpacked.                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |        |          |         |        |          |          |         |          |       |          |         |
| SAFETY/EMC                               |  |          |                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |        |          |         |        |          |          |         |          |       |          |         |
| 1.Applicable standards:                  |  | Safety   | ---                                                                                                                                                                                                                                                         | UL61010-1, CSA22.2 No.L61010-1, IEC61010-1, EN61010-1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |        |          |         |        |          |          |         |          |       |          |         |
| 1.1. Interface classification            |  |          | ---                                                                                                                                                                                                                                                         | Vout≤50V Models: Output, J1, J2, J3, J4, J5, J6, J7, J8 (sense) & J9 (communication options) are Non Hazardous.<br>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.<br>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.<br>Output & J8 (sense) - Ground: 1500VDC 1min, Input - Ground: 2835VDC 1min.<br>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.<br>Output & J8 (sense) - Ground: 2500VDC 1min.<br>Input - Ground: 2835VDC 1min. |      |        |          |         |        |          |          |         |          |       |          |         |
| 1.3 Insulation resistance                |  |          | ---                                                                                                                                                                                                                                                         | GSP10kW/15kW: 60 Mohm at 25°C, 70%RH. Output to Ground 500VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |      |        |          |         |        |          |          |         |          |       |          |         |
| 2.Conducted emission                     |  |          | ---                                                                                                                                                                                                                                                         | IEC/EN61204-3 Industrial environment, Annex H table H.1 , FCC Part 15-A, VCCI-A.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |        |          |         |        |          |          |         |          |       |          |         |
| 3.Radiated emission                      |  |          | ---                                                                                                                                                                                                                                                         | IEC/EN61204-3 Industrial environment, Annex H table H.3 and H4, FCC Part 15-A, VCCI-A.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |        |          |         |        |          |          |         |          |       |          |         |
| 4. EMC compliance                        |  | EMC(*18) | ---                                                                                                                                                                                                                                                         | IEC/EN61204-3 Industrial environment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |        |          |         |        |          |          |         |          |       |          |         |

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

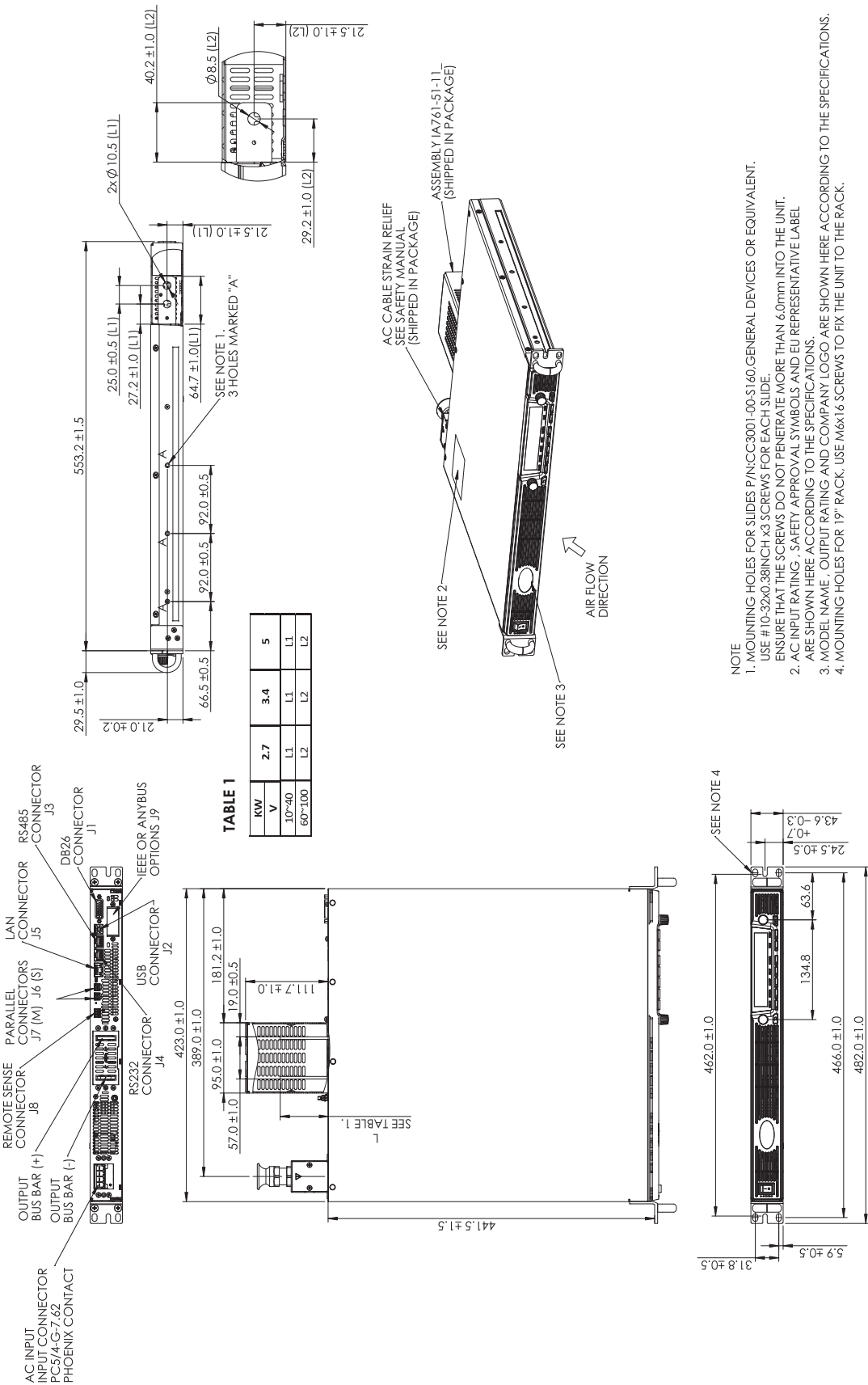
### \*NOTES:

- \*1: Minimum voltage is guaranteed to maximum 0.1% of rated output voltage.
- \*2: Minimum current is guaranteed to maximum 0.2% of rated output current.
- \*3: GSP 10kW: Derate 10A/1°C above 40°C. GSP 15kW: Derate 15A/1°C above 40°C.
- \*4: For cases where conformance to various safety standards (UL, IEC, etc...) is required, to be described as 190-240Vac (50/60Hz) for 3-Phase
- \*5: 3-Phase 200V models: At 200Vac input voltage, 3-Phase 400/480V: At 380Vac input voltage. With rated output power.
- \*6: Not including EMI filter inrush current, less than 0.2mSec.
- \*7: 3-Phase 200V models: 170~265Vac, 3-Phase 400V models: 342~460Vac, 3-Phase 480V models: 342~528Vac. Constant load.
- \*8: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.
- \*9: For 10V~150V models: Measured with JEITA RC-9131C (1:1) probe. For 200~600V models: Measured with 100:1 probe.
- \*10: The maximum voltage on the power supply terminals must not exceed the rated voltage.
- \*11: From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated, resistive load.
- \*12: From 90% to 10% of Rated Output Voltage.
- \*13: For load voltage change, equal to the unit voltage rating, constant input voltage.
- \*14: For 10V model the ripple is measured at 2V and rated output current. For other models, the ripple is measured at 10% of rated output voltage. B.W 5Hz~1MHz.
- \*15: The Constant Current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift.
- \*16: Measured at the sensing point.
- \*17: For 10V model Ta derating 2°C/100m."
- \*18: "Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m.
- \*19: Max. ambient temperature for using IEEE is 40°C.
- \*20: GSP10kW For 10V model only: Max. output current for using IEEE is 800A up to 40°C and 900A up to 30°C.
- \*20: GSP15kW For 10V model only: Max. output current for using IEEE is 1200A up to 40°C and 1350A up to 30°C.
- \*21: For 10V model only: For 3-Phase 200V efficiency is 88.5%
- \*22: Typ. at Ta=25°C, rated output power.
- \*23: For steady state only.

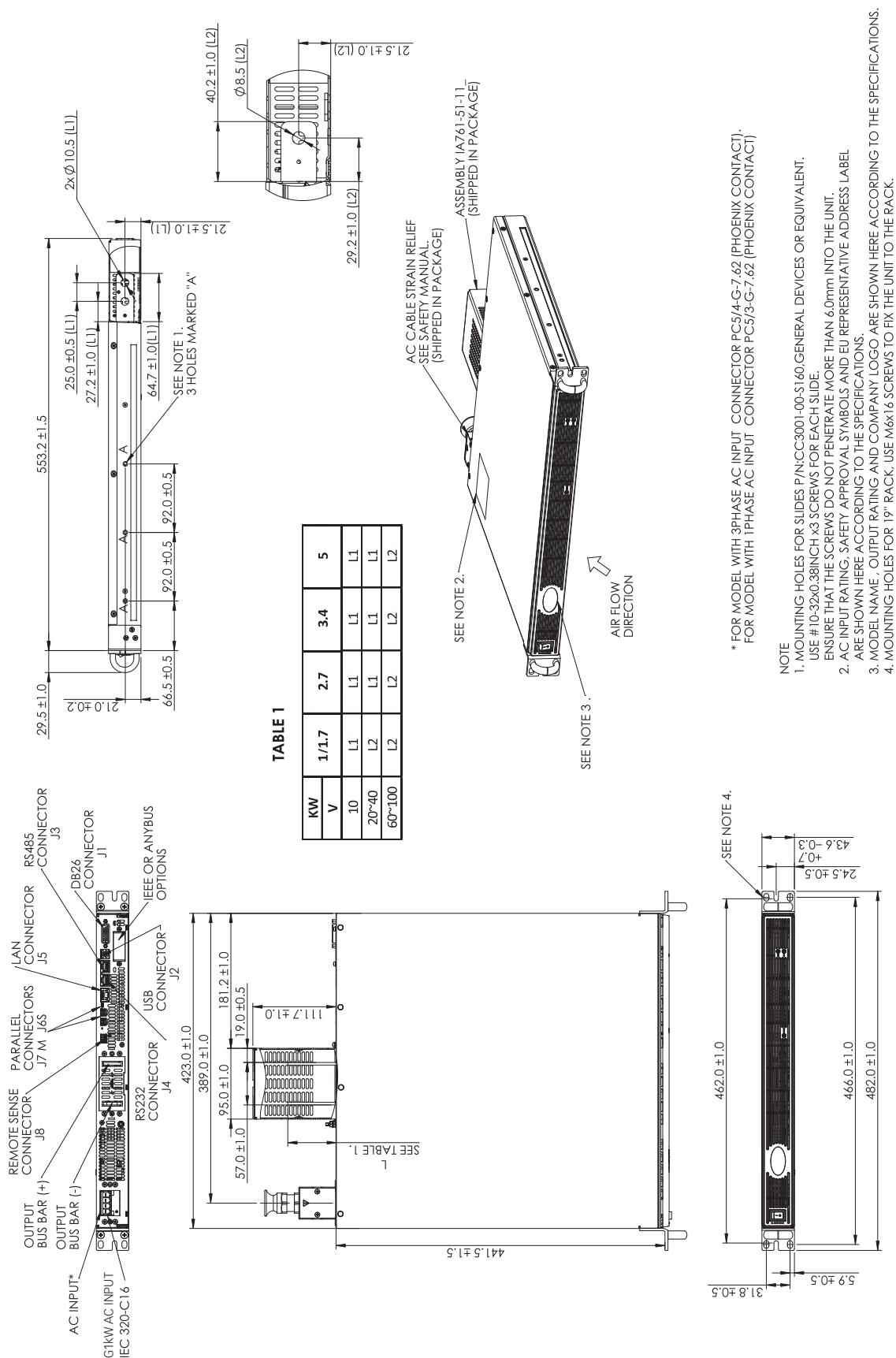


1. MOUNTING HOLES FOR SLIDES P/N:CC-3001-00-S160. GENERAL DEVICES OR EQUIVALENT. USE #10-32X0.38INCH X3 SCREWS FOR EACH SLIDE.
2. AC INPUT RATING , SAFETY APPROVAL SYMBOLS AND EU REPRESENTATIVE ADDRESS LABEL ARE SHOWN HERE ACCORDING TO THE SPECIFICATIONS.
3. MODEL NAME , OUTPUT RATING AND COMPANY LOGO ARE SHOWN HERE ACCORDING TO THE SPECIFICATIONS.
4. MOUNTING HOLES FOR 19" RACK. USE MAX16 SCREWS TO FIX THE UNIT TO THE RACKING.

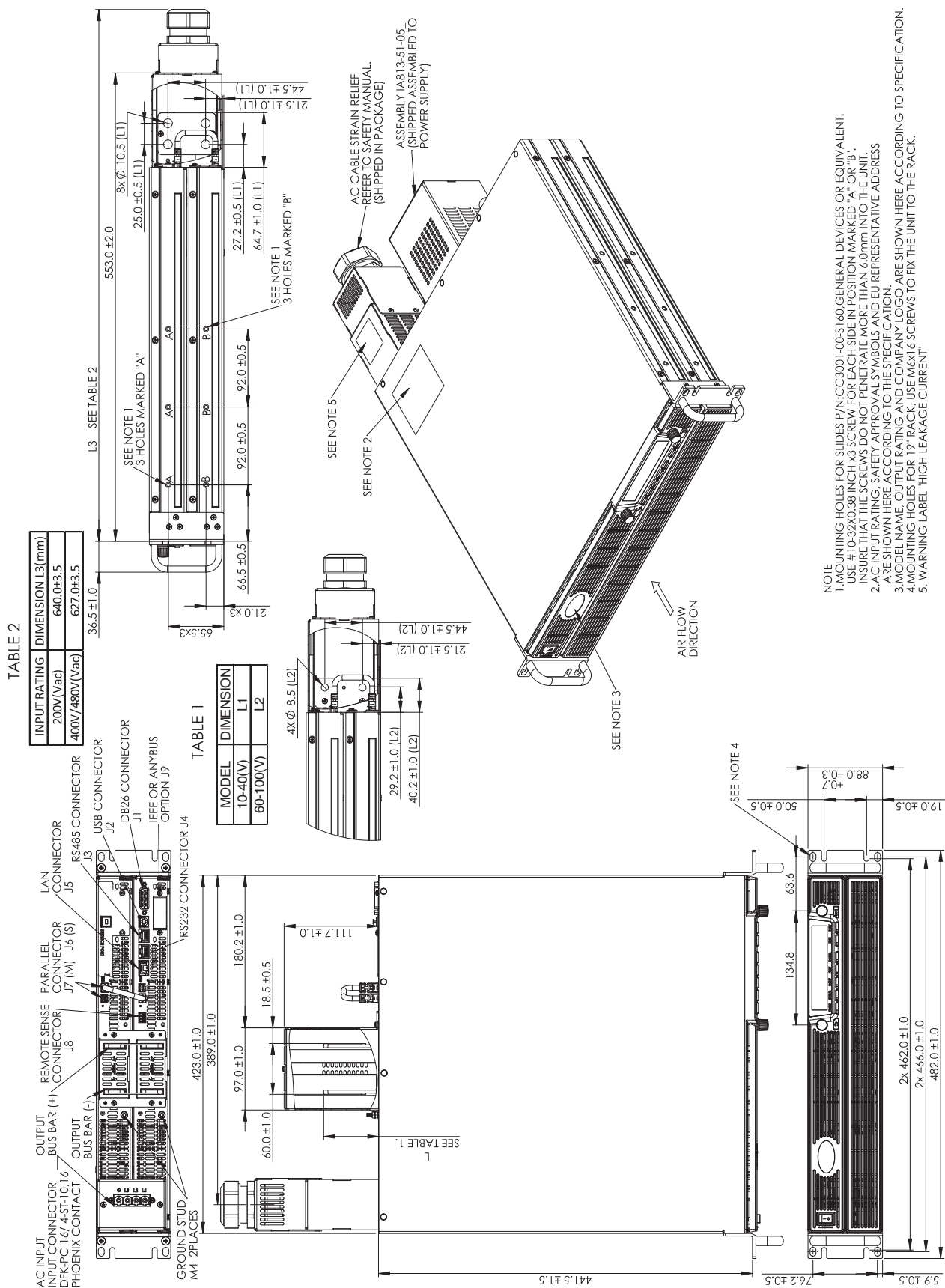
Outline Drawing **GENESYS™** G2.7kW/G3.4kW/G5kW - 3-Phase



Outline Drawing **GENESYS™** GB1kW/1.7kW/GB2.7kW/GB3.4kW/GB5kW - ATE Version



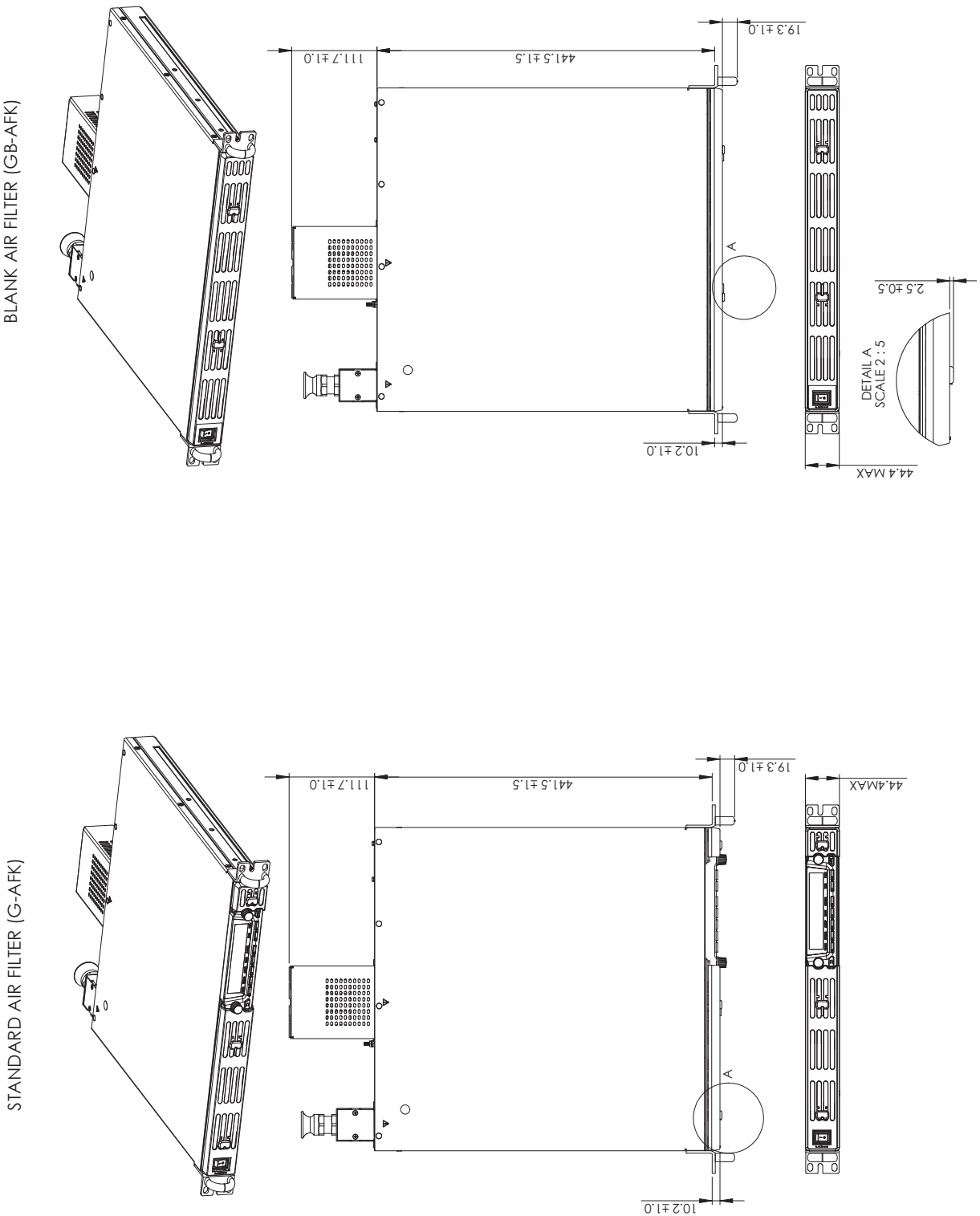
# Outline Drawing **GENESYS™** GSP10kW







Outline Drawing **GENESYS™** Air Filter Kit



## Front Panel Air Filter Assembly

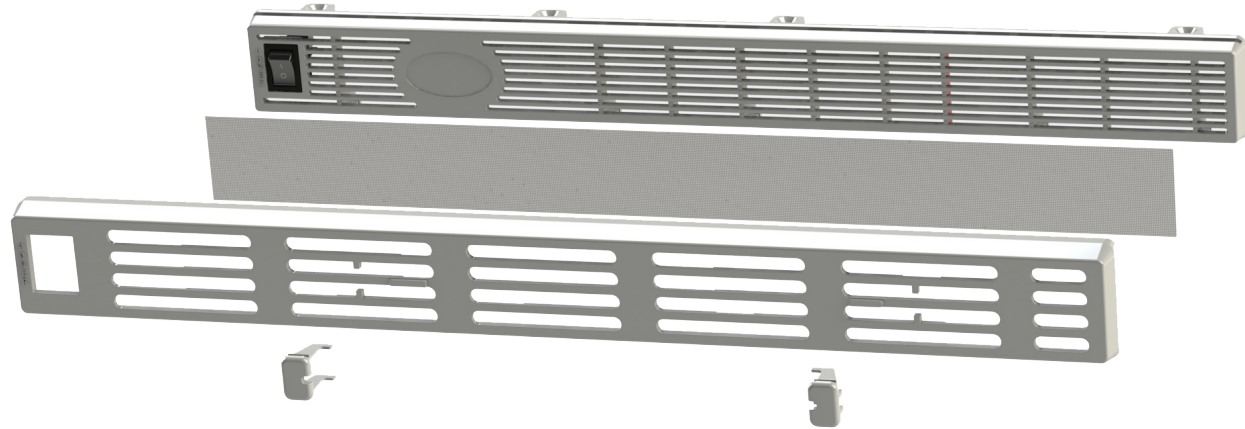
Front panel dust cover is available for dusty air environment applications

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

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



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



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

## Accessories

### 1. Front Panel dust filter / Field installation kit:

#### Technical Specifications: Unit with Air Filter Assembly Installed

- Derating (environmental):
- Operating Temperature
- For all models (except 10V): 0°C to +40°C full load; For 10V model: 0°C to +30°C, derate 5A/°C for 30°C < Ta < +40°C
- Altitude
- For all models (except 10V): derate 2°C/100m or 2% of load/100m (above 2000m)
- For 10V model: derate 1°C/100m or 2% of load/100m (above 2000m)

#### Filter Foam Technical Specifications

- Material: reticulated polyurethane foam
- Thickness: 3.8 mm
- Porosity: 45ppi
- Operating Temperature Range: 0°C to +60°C
- Storage Temperature Range: -40°C to +85°C
- Humidity: 95% RH

#### Air Filter Assembly Components

Standard Unit (P/N: G-AFK)

- Air Filter Cover (two pieces)
- Slide Button #1 (two locations: near AC ON/OFF switch and near left-hand side of front panel display)
- Slide Button #2 (one location: right-hand side of front panel display)
- Filter foam (two pieces)

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

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

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