**Programmable DC Power Supplies**

**Full-Rack 10kW/15kW in 3U Height**

**Built in RS-232 & RS-485 Interface**

**Parallel Operation (Basic or Advanced)**

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

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**Genesys™ Family**

- GENH-1U 750W Half-Rack
- GEN-1U 750W/1.5kW/2.4kW Full-Rack
- GEN-2U 3.3kW/5.0kW Full-Rack
- GEN-3U 10kW/15kW Full-Rack

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**New !**

- 30V, 40V and 50V models - 15kW
- 800V, 1000V, 1250V and 1500V models - 10kW/15kW - 208VAC/400VAC/480VAC

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**TDK·Lambda**

www.us.tdk-lambda.com/hp
The Genesys™ family of programmable power supplies sets a new standard for flexible, reliable, AC/DC power systems in OEM, Industrial and Laboratory applications.

**Features include:**

- **High Power Density** 10kW/15kW in full-rack 3U package
- **High Output Current** (up to 1000ADC)
- **Popular worldwide 3Ф AC inputs**, (208VAC, 400VAC, 480VAC)
- **Power Factor 0.88** (Passive PFC on all 3Ф AC Inputs)
- **Output Voltage from 7.5V (1000A) to 1500V (10A)**
- **Built-in RS-232/RS-485 Serial Interface (standard)**
- **Last Setting Memory, Safe/Auto-ReStart, Front Panel Lock/Unlock**
- **“Advanced Parallel” configuration reports total system current** (up to four identical units)
- **Global Commands for RS-232/RS-485 Serial Interface**
- **Continuous Encoders for Voltage and Current Adjustment** (Coarse & Fine mode)
- **Independent Remote SHUTOFF and Remote ENABLE/DISABLE**
- **19” Rack Mounted for ATE and OEM Applications, zero-stack capability**
- **Optional Interfaces**
  - **compliant LAN (Class C)** w/ Multi-Drop capability: option for all models
  - **IEEE (488.2 & SCPI compliant)** w/ Multi-Drop capability: option for all models
  - **USB (2.0)** w/ Multi-Drop capability: option for all models
  - **Isolated Analog Programming and Monitoring Interface**
    - 0-5V/0-10V: option for models with Vout < 600V, standard for models with Vout > 800V
    - 4-20mA: option for all models
- **LabView™ and LabWindows™ Software Drivers**
- **Worldwide Safety Agency Approvals; UL Recognized and CE Mark for LV, EMC and RoHS2 Directives**
  - (208VAC (all models), 400VAC (all models) and 480VAC models (30V < Vout < 1500V))
- **Five Year Warranty**

**Applications**

*Genesys™* power supplies are designed for demanding applications.

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

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

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

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

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

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

**Semiconductor Processing & Burn-in** equipment designers appreciate the wide variety of worldwide AC Inputs and DC Outputs from which to select, depending on application. Selectable Safe-Start and Auto Re-Start protects loads and process integrity. Typical applications include Magnets, Filaments and Heaters.
Front Panel Description (7.5V < Vout < 25V)

1. AC ON/OFF Switch (circuit breaker for Vout < 25V; rocker switch for Vout > 30V models)
2. Air Intake allows zero-stacking for maximum system flexibility and power density.
3. Continuous encoder controls Output Voltage, Address, OVP and UVL settings.
4. Voltage Display shows Output Voltage and directly displays OVP, UVL and Address settings.
5. Continuous encoder controls Output Current, sets Baud rate and Advanced Parallel mode.
7. Function/Status LEDs:
   - Alarm
   - Fine Control
   - Foldback Mode
   - Remote Mode
   - Preview Settings
   - Output On
8. Pushbuttons allow flexible user configuration
   - Coarse and Fine adjustment of Output Voltage/Output Current and Advanced Parallel Master or Slave select.
   - Preview Settings and set Voltage/Current with Output OFF, Front Panel Lock/Unlock.
   - Parallel Master/Slave (Basic and Advanced).
   - Set Output OVP and UVL Limits.
   - Set Output Current Foldback Protection.
   - Go to Local Mode and select unit Address and Baud rate.
   - Output ON/OFF and Safe-Start/Auto Re-Start mode.

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

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

#### 1.0 MODEL

<table>
<thead>
<tr>
<th>GEN</th>
<th>75-1000</th>
<th>10-1000</th>
<th>12.5-800</th>
<th>20-500</th>
<th>25-400</th>
<th>30-333</th>
<th>40-250</th>
<th>50-200</th>
<th>60-167</th>
<th>80-125</th>
<th>100-125</th>
<th>80-150</th>
<th>X</th>
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</thead>
<tbody>
<tr>
<td>1. Rated Output Voltage</td>
<td>VDC</td>
<td>75</td>
<td>10</td>
<td>12.5</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>80</td>
<td>100</td>
<td>125</td>
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<tr>
<td>2. Rated Output Current</td>
<td>A</td>
<td>1000</td>
<td>1000</td>
<td>800</td>
<td>500</td>
<td>400</td>
<td>333</td>
<td>250</td>
<td>200</td>
<td>167</td>
<td>125</td>
<td>100</td>
<td>80</td>
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<tr>
<td>3. Rated Output Power</td>
<td>W</td>
<td>75</td>
<td>10</td>
<td>10</td>
<td>10.0</td>
<td>10.0</td>
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<tr>
<td>4. Efficiency (min) at low AC line, 100% Rated Load</td>
<td>%</td>
<td>77</td>
<td>83</td>
<td>X</td>
<td></td>
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</tr>
</tbody>
</table>

#### 1.1 CONSTANT VOLTAGE MODE (CV)

1. **Constant Voltage Mode (CV):**
   - From 5% to 100% of Irated (over 5% to 100% of Prated).

2. **Max. Load Reg:**
   - 0.1% - Ir > 333A; 0.075% - 17A < Ir < 333A; 0.15% - Ir < 17A.

3. **Max. Line Reg.:**
   - 0.1% - Vor ≤ 30V; 0.05% - 30V < Vor < 333A; 0.15% - Vor < 333A; 0.1% - Vor < 17A.

4. **Remote Sense Compensation/ Wire:**
   - CV Mode: ± 0.5% of Vor (rated) over 8 hours after 30 minute warm up (constant Line, Load & Temperature).
   - CC Mode: ± 0.5% of Io (rated).

5. **Temperature Stability:**
   - ± 0.05% of Voc (rated) over 8 hours after 30 minute warm up (constant Line, Load & Temperature).

6. **Temperature Coefficient:**
   - ± 300 (± 0.03% of Voc (rated)) / °C.

#### 1.2 CONSTANT CURRENT MODE (CC)

1. **Constant Current Mode (CC):**
   - From 5% to 100% of Ir (rated).

2. **Max. Load Reg:**
   - 0.1% - Vor ≤ 30V; 0.05% - 30V < Vor < 333A; 0.1% - Vor < 17A.

3. **Max. Line Reg.:**
   - 0.1% - Vor ≤ 30V; 0.05% - 30V < Vor < 333A; 0.1% - Vor < 17A.

4. **Remote Sense Compensation/ Wire:**
   - CV Mode: ± 0.5% of Voc (rated) over 8 hours after 30 minute warm up (constant Line, Load & Temperature).
   - CC Mode: ± 0.5% of Io (rated).

5. **Temperature Stability:**
   - ± 0.05% of Io (rated) over 8 hours after 30 minute warm up (constant Line, Load & Temperature).

6. **Temperature Coefficient:**
   - ± 300 (± 0.03% of Io (rated)) / °C.

#### 1.3 PROTECTIVE FUNCTIONS

1. **OVP Type:**
   - 0% to 100%.

2. **OVP Response Time:**
   - Less than 1 (Min = 0.25 / Max = 25 / Default = 0.25); Settable via “FBD” command.

3. **OVP Programming Accuracy:**
   - ± 0.5% of Voc (rated).

4. **OVP Trip Point:**
   - 5% to 100% of Voc (rated) for Vor ≤ 600V; 10% to 100% of Voc (rated) for 600V < Vor ≤ 1500V; Shall always be greater than 105% of Voc (setting); Default = 105% of Voc (rated).

5. **OVP Response Time:**
   - Less than 1 (Min = 0.25 / Max = 25 / Default = 0.25); Settable via “FBD” command.

6. **OVP Programming Accuracy:**
   - ± 0.5% of Io(rated).

7. **OVP Monitoring:**
   - ± 0.5% of Io(rated) (rated).

8. **OVP Response Time:**
   - Less than 1 (Min = 0.25 / Max = 25 / Default = 0.25); Settable via “FBD” command.

9. **OVP Monitoring:**
   - ± 0.5% of Io(rated) (rated).

#### 1.4 REMOTE ANALOG CONTROLS & SIGNALS

1. **Vout Programming Accuracy:**
   - ± 0.5% of Vo (rated).

2. **Iout Programming Accuracy:**
   - ± 0.5% of Io (rated) for units with Io < 187.5A; ± 0.7% of Io (rated) for Io ≥ 187.5A.

3. **Voltage Programming Accuracy:**
   - ± 0.5% of Vo (rated).

4. **Current Programming Accuracy:**
   - ± 0.5% of Io (rated) for units with Io < 187.5A; ± 0.7% of Io (rated) for Io ≥ 187.5A.

5. **Temperature Coefficient:**
   - ± 300 (± 0.03% of Io (rated)) / °C.

6. **Temperature Stability:**
   - ± 0.05% of Io (rated) over 8 hours after 30 minute warm up (constant Line, Load & Temperature).

7. **Temperature Coefficient:**
   - ± 300 (± 0.03% of Io (rated)) / °C.

8. **OVP Switching Accuracy:**
   - ± 0.5% of Voc (rated).

9. **OVP Switching Accuracy:**
   - ± 0.5% of Voc (rated) over 8 hours after 30 minute warm up (constant Line, Load & Temperature).

10. **Over-Temperature Protection (OTP):**
    - ± 0.5% of Voc (rated) over 8 hours after 30 minute warm up (constant Line, Load & Temperature).

11. **Phase-Loss Protection:**
    - ± 0.5% of Voc (rated) over 8 hours after 30 minute warm up (constant Line, Load & Temperature).

12. **Temperature Stability:**
    - ± 0.05% of Io (rated) over 8 hours after 30 minute warm up (constant Line, Load & Temperature).

13. **Temperature Coefficient:**
    - ± 300 (± 0.03% of Io (rated)) / °C.

#### 1.5 FRONT PANEL

1. **Control Functions:**
   - Vout/Iout manual adjust by separate encoders (COARSE and FINE adjustment selectable).
   - Address selection by VOLTAGE Adjust encoder. # of Addresses = 31.
   - AC On/Off, Output On/Off, Restart Modes (Auto/Safe), Foldback Control (CV to CC), Go-To-Local.
   - RS-232/RS-485, LAN, IEEE (EMD) and USB selection by rear panel Dip-switch.
   - Advanced Parallel Master/Slave: Hx = Master unit, where x = # of Slave units (0 to 4), S = Slave unit(s).

2. **Display:**
   - Voltage: 4 digits, Accuracy: ± 0.5% of Voc (rated) ± 1 count.
   - Current: 4 digits, Accuracy: ± 0.5% of Io (rated) ± 1 count.
   - Voltage/Current Displays display voltage at power supply (Local sense) or at load (Remote sense).
   - Voltage meter displays voltage at power supply (Local sense) or at load (Remote sense).

3. **LED Indicators:**
   - Green LED’s: PREVIEW, FOLD, REM/LOCAL, OUT ON/OFF, CV/CC, FINE, RED LED: ALARM (OVP, OTP, FOLD, AC FAIL, ENA, SO).

4. **Remote Analog Controls & Signals:**
   - CV Mode: from 5% to 100% of rated (over 5% to 100% of Prated).
   - CC Mode: from 20% to 100% of Vrated (over 20% to 100% of Prated).

   - All specifications subject to change without notice.
10kW Genesys™ 3U 10kW Specifications

1.0 MODEL
1.1 CONSTANT VOLTAGE MODE (CV)

1.2 CONSTANT CURRENT MODE (CC)

1.3 PROTECTIVE FUNCTIONS

1.4 REMOTE ANALOG CONTROLS & SIGNALS

1.5 FRONT PANEL

1.6 DIGITAL PROGRAMMING & READBACK
Genesys™ 3U 10/15kW Specifications

1.0 MODEL

1.1 CONSTANT VOLTAGE MODE (CV)

- Max. Line Reg. (0.1% - Vor ≤ 30V; 0.05% - 30V < Vor ≤ 600V; 0.05% - 600V < Vor ≤ 1500V)
  - mA
  - less than 10 (for Output to begin to drop) for Vor < 600V

- Max. Load Reg. (0.1% - Vor ≤ 30V; 0.05% - 30V < Vor ≤ 600V; 0.1% - 600V < Vor ≤ 1500V)
  - mA

- Ripple, rms (5Hz-1MHz), CV mode; (*1)
  - mA

- Output Noise, p-p (20MHz), CV mode; (*1)
  - mV

- Temperature Stability
  - ± 0.05% of Vo(rated) over 8 hours after 30 minute warm up (constant Line, Load & Temperature)

- Temperature Coefficient
  - ppm / °C

1.2 CONSTANT CURRENT MODE (CC)

- Max. Line Reg. (0.1% - for ≥ 333A; 0.05% - for < 333A)
  - mA

- Max. Load Reg (0.1% - for ≥ 333A; 0.075% - 25A < for < 333A; 0.2% - for < 25A; (*1); (*3))
  - mA

- Ripple, rms (9Hz-1MHz), CC mode
  - mA

- Temperature Stability
  - ± 0.05% of Io(rated) over 8 hours after 30 minute warm up (constant Line, Load & Temperature)

- Temperature Coefficient
  - ppm / °C

1.3 PROTECTIVE FUNCTIONS

- OCP
  - %

- Vout Voltage Programming
  - Accuracy & Linearity: ±1% of Vo(rated)

- Iout Voltage Programming
  - Accuracy & Linearity: ±1% of Io(rated)

- Vout Resistor Programming
  - Accuracy & Linearity: ± 1% of Vo(rated)

- Iout Resistor Programming
  - Accuracy & Linearity: ± 1% of Io(rated)

- OVP type --- Inverter shut-down; Manual reset by AC On/Off recycle, OUT button, Remote Analog or Digital communication

- OVP Programming Accuracy
  - ±% of Vo(rated)

- OVP Trip Point
  - V

- OVP Reset Time
  - s

1.4 REMOTE ANALOG CONTROLS & SIGNALS

- Power Supply OK (PS_OK) Signal
  - Y

- CV/CC Signal
  - CV: TTL High (4 ~ 5V), Max source current = 10mA; CC: TTL Low (0 ~ 0.4V), Max sink current = 10mA

- Enable/Disable Dry contact; Open = OFF, Short = ON; Maximum voltage across Enable/Disable contacts = 6V

- Remote/Local Selection
  - Selects Remote or Local operation by voltage: 0 ~ 0.6V = Local / 2 - 15V = Remote

- Remote/Local Signal
  - Signals operating mode; Open collector: Local = Open (Max voltage = 30V), Remote = On (Max sink current = 10mA)

1.5 FRONT PANEL

- Control Functions
  - You/Iout manual adjust by separate encoders (COARSE and FINE adjustment selectable)

- Display
  - Voltage: 4 digits, Accuracy: ± 0.5% of V(0 rated) ±1 count

- Indications
  - Green LED's: PREVIEW, FOLD, REM/LOCAL, OUT ON/OFF, CV/CC, FINE

1.6 DIGITAL PROGRAMMING & READBACK

- Vout Programming Accuracy
  - ± 0.5% of Vo(rated)

- Iout Programming Accuracy
  - ± 0.5% of Io(rated) for units with Io < 187.5A; ± 0.7% of Io(rated) for Io ≥187.5A

- Vout Programming Resolution
  - ±(0.1% of Vo(actual) + 0.2% of Vo(rated))

- Iout Programming Resolution
  - ±(0.1% of Io(actual) + 0.4% of Io(rated))

- Vout Readback Accuracy
  - ±% of Vo(rated)

- Iout Readback Accuracy
  - ±% of Io(rated)

- OV Response Time
  - ms

- CV/CC Signal
  - CV: TTL High (4 ~ 5V), Max source current = 10mA; CC: TTL Low (0 ~ 0.4V), Max sink current = 10mA

- Other Functions
  - Set OVP/UVL limits, Set Local/Remote, Operating parameters and Status, Get Identity

- Contact Factory for other models
1.0 MODEL

1.1 CONSTANT VOLTAGE MODE (CV)

Contact Factory for other models

1.2 CONSTANT CURRENT MODE (CC)

1.3 PROTECTIVE FUNCTIONS

1.4 REMOTE ANALOG CONTROLS & SIGNALS

1.5 FRONT PANEL

1.6 DIGITAL PROGRAMMING & READBACK

---

1.0 MODEL

- GEN
- 100-100
- 200-75
- 250-60
- 300-50
- 400-37.5
- 500-30
- 600-25
- 800-18.8
- 1000-15
- 1250-12
- 1500-10

1.1 CONSTANT VOLTAGE MODE (CV)

1. Max. Line Reg (0.1% - Vor > 30V; 0.05% - 30V < Vor < 600V; 0.05% - 600V < Vor < 1500V) mV
    - 75
    - 100
    - 125
    - 150
    - 200
    - 250
    - 300
    - 400
    - 500
    - 625
    - 750

2. Max. Load Reg (0.1% - Vor > 30V; 0.05% - 30V < Vor < 600V; 0.1% - 600V < Vor < 1500V) mV
    - 75
    - 100
    - 125
    - 150
    - 200
    - 250
    - 300
    - 350
    - 375
    - 450
    - 600

3. Output Ripple, rms (5Hz-1MHz), CV mode; (*1) mV
    - 25
    - 35
    - 60
    - 60
    - 80
    - 100
    - 120
    - 140

4. Output Noise, p-p (20MHz), CC mode; (*1) mV
    - 15
    - 175
    - 200
    - 200
    - 300
    - 350
    - 700
    - 800
    - 1000
    - 1400

5. Remote Sense Compensation / Wire V
    - 5
    - 5
    - 5
    - 5
    - 5
    - 5
    - 5

6. Temperature Stability % ± 0.5% of Vorated (for Output to begin to drop) for Vor < 600V

7. Temperature Coefficient ppm / °C 200 (0.02% of Vorated) / °C

8. Up-Prog. Response Time, 0-Vomax, full-load ms
    - 100
    - 17

9. Up-Prog. Response Time, 0-Vomax, no load ms
    - 50
    - 17

10. Transient Response Time (CV mode); (*2), (*4) ms
    - Less than 3
    - Less than 1

11. Phase Loss Protection --- Shut down if internal temperature exceeds safe operating levels (Latched: Safe/Unlatched: Auto)

1.1 PROTECTIVE FUNCTIONS

- OVP type --- Inverter shut-down; Manual reset by On/Off recycle, OUT button, Remote Analog or Digital communication
- Foldback Protection --- Output shut down; Manual reset by front panel OUT button or Digital communication, user-selectable
- Foldback Response Time s
  - Less than 1 (Min = 0.25 / Max = 25 / Default = 0.25); Settable via “FBD” command
- OVP Programming Accuracy % ± 5% of Vorated
- Temperature Coefficient ppm / °C 200 (± 0.02% of Io(rated)) / °C
- Vout Programming Accuracy ± 0.5% of Vorated
- Voltage Programming 0~100%, 0~5V or 0~10V, user-selectable, Accuracy & Linearity: ± 1% of Io(rated)
- Output Current Monitor 0~5V or 0~10V, Accuracy: ± 1% of Io(rated), user-selectable
- Reliable Output Power kW
    - 15.0

1.2 CONSTANT CURRENT MODE (CC)

1. Max. Line Reg (0.1% - Ior ≥ 333A; 0.05% - Ior < 333A) mA
    - 50
    - 38
    - 30
    - 25
    - 19
    - 15
    - 13
    - 28
    - 23
    - 18
    - 15

2. Max. Load Reg (0.1% - Ior ≥ 333A; 0.075% - 25A ≤ Ior < 333A; 0.2% - Ior < 25A; (7), (5)) mA
    - 75
    - 57
    - 45
    - 38
    - 28
    - 23
    - 19
    - 38
    - 30
    - 24
    - 20

3. Output Ripple, rms (5Hz-1MHz), CC mode mA
    - 20
    - 20
    - 20
    - 10
    - 10
    - 15
    - 10

4. Temperature Stability % ± 0.5% of Io(rated)

5. Temperature Coefficient ppm / °C ± 0.03% of Io(rated)

1.3 REMOTE ANALOG CONTROLS & SIGNALS

1. Vout Programming 0~100%, 0~5V or 0~10V, user-selectable, Accuracy & Linearity: ± 1% of Io(rated)
2. Iout Programming 0~100%, 0~5V or 0~10V, user-selectable, Accuracy & Linearity: ± 1% of Io(rated)
3. Vout Resistor Programming 0~100%, 0~5/10kohm full-scale, user-selectable, Accuracy & Linearity: ± 1% of Io(rated)
4. Iout Resistor Programming 0~100%, 0~5/10kohm full-scale, user-selectable, Accuracy & Linearity: ± 1% of Io(rated)
5. Shut-Off (SO) Control (rear panel) By Voltage: 0.6V = DIS, 2-15V = ENA (default) or Dry Contact: Open = ENA, Short-DIS (user-selectable logic)
6. Output Current Monitor 0~5V or 0~10V, Accuracy: ± 1% of Io(rated), user-selectable
7. Output Voltage Monitor 0~5V or 0~10V, Accuracy: ± 1% of Io(rated), user-selectable
8. Power Supply OK (PS_OK) Signal Yes. TTL High = OK, 0V = Fail (500ohm series impedance)
9. Output Voltage Monitor 0~5V or 0~10V, Accuracy: ± 1% of Io(rated), user-selectable
10. Transient Response Time (CC mode); (*2), (*4) ms
    - Less than 3
    - Less than 1

1.4 DIGITAL PROGRAMMING & READBACK

1. Vout Programming Accuracy ± 0.5% of Io(rated)
2. Iout Programming Accuracy ± 0.5% of Io(rated) for units with Io ≤ 187.5A, ± (0.7% of Io(rated)) for Io > 187.5A
3. Vout Programming Resolution 0.02% of Io(rated)
4. Iout Programming Resolution 0.04% of Io(rated)
5. Vout Readback Resolution 0.1% of Vout(actual) ± 0.2% of Io(rated)
6. Iout Readback Resolution (0.1% of Io(rated)) ± 0.4% of Io(rated)
7. Vout Readback Resolution 0.02% of Io(rated)
8. Iout Readback Resolution 0.02% of Io(rated)
9. CV Response Time 20ms maximum (between Vout exceeding OVP Limit and supply inhibit turning On)
10. Other Functions Set OVP/UVL limits, Set Local/Remote, Operating parameters and Status, Get Identity

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1. Ripple and Noise at Vo(rated) and rated Load. Ta = 25°C and nominal AC input, per EU R6002A.
2. Time for the Output voltage to recover within 2% of rating for a load current change of 50~100% or 100-50% of rated Output.
3. From 20% - 100% for models with Ior < 25A.
4. Operating with a load that continuously pulses the current (or voltage) can reduce the operating life of the Power Supply. Please contact TDK-Lambda Sales/Technical Support to discuss the application in detail.
5. CV Mode: from 5% to 100% of rated (over 5% to 100% of Prated); CC Mode: from 20% to 100% of rated (over 20% to 100% of Prated). All specifications subject to change without notice.
General Specifications, GenesySTM 3U 10kW/15kW

2.1 INPUT CHARACTERISTICS

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

2.2 POWER SUPPLY CONFIGURATION

1. Parallel Operation: (*) Up to four (4) identical units may be connected in Master/Slave Mode with Single-Wire/Two-Wire connection.
2. Series Operation: (*) Possible (with external diodes); Up to two identical units with total Output voltage not to exceed ± 600V from Chassis ground (for Vor < 600V) or not to exceed ± 1500V from Chassis ground (for 600V < Vor < 1500V)

2.3 ENVIRONMENTAL CONDITIONS

1. Operating Temperature 0 to +50°C, 100% load
2. Storage Temperature -20 to +70°C
3. Operating Humidity 20 to 80% RH (non-condensing)
4. Storage Humidity 10 to 90% RH (non-condensing)
5. Vibration & Shock ASTM D4169, Standard Practice for Performance Testing of Shipping Containers and Systems, Shipping Unit: Single Package Assurance Level: Level II; Acceptance Criteria: Criterion 1 - No product damage Criterion 2 - Packaging is intact, Distribution Cycle: 12 - Air (intercity) and motor freight (local), unitized is used.
6. Altitude Operating: -50°C up to 7500ft. (2500m), +45°C from 7501 to 10,000ft (2501m - 3000m), Non-Operating 40,000ft (12,000m)
7. Audible Noise 70dB@1m (rated); measured 1m from front panel for Vout < 30V, 60dB@1m (rated); measured 1m from front panel for Vout > 30V

2.4 EMC

1. 208VAC Input (all models) CE Mark
2. 480VAC Input (Vout > 30V) CE Mark
3. Input Voltage / Frequency (range) --- 50Hz
4. 1.2 INPUT CHARACTERISTICS
5. 2.2 POWER SUPPLY CONFIGURATION
6. 2.3 ENVIRONMENTAL CONDITIONS
7. 2.4 EMC
8. 2.5 SAFETY
9. 2.6 MECHANICAL CONSTRUCTION
10. 2.7 WARRANTY
Genesys™ Power Parallel and Series Configurations

Parallel Operation - Master/Slave (*6)
Active current sharing allows up to four identical units to be connected in an Auto-parallel configuration for the Output power. In Advanced Parallel Master/Slave Mode, total current is programmed and reported by the Master. Up to four 10kW/15kW Power Supplies in parallel act as one 40kW/60kW Power Supply.

Series Operation (*6)
Up to two units may be connected in series to increase the Output voltage or to provide bipolar output. (Max 600V to Chassis GND for $V_{or} \leq 600V$; Max 1500V to Chassis GND for $600V < V_{or} \leq 1500V$).

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

Programming Options (Factory installed)

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

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

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

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

Isolated Analog Programming
- Option for models with $V_{out} \leq 600V$ (IS510 & IS420); IS510 built-in for models where $800V \leq V_{out} \leq 1500V$
- Four Channels total (Two channels to Program Voltage and Current; Two channels to Monitor Voltage and Current)
- Isolation allows operation with floating references in harsh electrical environments
- Choose between programming with Voltage or Current
- Connection via removable terminal block: Phoenix MC1,5/8-ST-3.81
- Voltage Programming, User-selectable 0-5V or 0-10V signal
  - Power supply Voltage and Current Programming Accuracy: ±1.0%
  - Power supply Voltage and Current Monitoring Accuracy: ±1.5%
- Current Programming with 4-20mA signal
  - Power supply Voltage and Current Programming Accuracy: ±1.0%
  - Power supply Voltage and Current Monitoring Accuracy: ±1.5%

P/N: IEMD (for all models)

P/N: USB (for all models)

P/N: IS510 (for Vout ≤ 600V)

P/N: IS420 (for all models)
Notes:
1. Busbars for models where Vout < 30V Output: two holes 0.42" (10.72mm) diameter.
2. N/A
3. N/A
4. Input Terminals: M6 x 1" (Qty = 3); Ground Terminal: M5 x 1" (Qty = 2)
5. Mounting for Slide Mounts (not included).
   Recommend: General Devices, Chassis Trak P/N C230-S-122; Verify requirements with slide manufacturer.
   Secure with pan head screw: M5 x 0.8-8mm long (max).
**NOTES:**

1. N/A
2. Bus bars for models 30-300V Output (10kW/15kW): one hole 0.42" (10.72mm) diameter.
3. N/A
4. Input Terminals: M6 x 1" (Qty = 3) + Ground M5 x 1" (Qty = 2)
5. Mounting for Slide Mounts (not included).

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

   Secure with pan head screw: M5 x 0.8-8mm long (max).
NOTES:
1. N/A
2. N/A
3. Threaded-stud terminals for models with $300V < V_{out} \leq 600V$ (M5 x 1”).
4. Input Terminals M6 x 1” (Qty = 3) + Ground M5 x 1” (Qty = 2)
5. Mounting for Slide Mounts (not included).
   Recommend General Devices, Chassis Trak P/N C230-S-122; Verify requirements with slide manufacturer.
   Secure with pan head screw: M5 x 0.8-8mm long (max).
**NOTES:**
1. N/A
2. N/A
3. Threaded stud terminals for models with 800V ≤ Vout ≤ 1500V Output (M5 x 1")
4. Input Terminals M6 x 1" (Qty = 3) + Ground M5 x 1" (Qty = 2)
5. Mounting for Slide Mounts (not included).
   Recommend General Devices, Chassis Trak P/N C230-S-122; Verify requirements with slide manufacturer.

Secure with pan head screw M5 x 0.8-8mm long (max).
Power Supply Identification / Accessories (Genesys™ 3U 10kW/15kW)

How to Order:

<table>
<thead>
<tr>
<th>GEN</th>
<th>10-1000</th>
<th>LAN</th>
<th>3P208</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>Output Voltage (0~10V)</td>
<td>Output Current (0~1000A)</td>
<td>Factory Options</td>
</tr>
<tr>
<td>Name</td>
<td>Voltage</td>
<td>Current</td>
<td>Option: “-----”</td>
</tr>
</tbody>
</table>

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

P/N
- “-----”
- LAN
- IEMD
- USB
- IS510 *(built-in standard on 800-1500V models)
- IS420

Accessories

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

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

2. Serial Link cable (optional)
   - Daisy-chain up to 31 Genesys™ power supplies.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Power Supply Connector</th>
<th>Communication Cable</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-485</td>
<td>EIA/TIA-568A (RJ-45)</td>
<td>Shield Ground, L=50cm</td>
<td>GEN/RJ45</td>
</tr>
</tbody>
</table>
## Genesys™ Family - Output Voltage / Output Current

<table>
<thead>
<tr>
<th>Model</th>
<th>GENH</th>
<th>GEN-1U</th>
<th>GEN-2U</th>
<th>GEN 3U</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Power</td>
<td>750W</td>
<td>750W</td>
<td>1.5kW</td>
<td>2.4kW</td>
</tr>
<tr>
<td>Voltage Range</td>
<td>0~6V</td>
<td>0~100A</td>
<td>0~100A</td>
<td>0~200A</td>
</tr>
<tr>
<td>Output Current Range</td>
<td>0~12.5V</td>
<td>0~100A</td>
<td>0~200A</td>
<td>0~400A</td>
</tr>
<tr>
<td>0~16V</td>
<td>0~38A</td>
<td>0~38A</td>
<td>0~76A</td>
<td>0~120A</td>
</tr>
<tr>
<td>0~20V</td>
<td>0~38A</td>
<td>0~38A</td>
<td>0~76A</td>
<td>0~120A</td>
</tr>
<tr>
<td>0~25V</td>
<td>0~38A</td>
<td>0~38A</td>
<td>0~76A</td>
<td>0~120A</td>
</tr>
<tr>
<td>0~30V (15kW)</td>
<td>0~25A</td>
<td>0~25A</td>
<td>0~50A</td>
<td>0~80A</td>
</tr>
<tr>
<td>0~40V (15kW)</td>
<td>0~19A</td>
<td>0~19A</td>
<td>0~38A</td>
<td>0~60A</td>
</tr>
<tr>
<td>0~50V (15kW)</td>
<td>0~7.5A</td>
<td>0~7.5A</td>
<td>0~15A</td>
<td>0~24A</td>
</tr>
<tr>
<td>0~60V</td>
<td>0~12.5</td>
<td>0~12.5</td>
<td>0~25A</td>
<td>0~40A</td>
</tr>
<tr>
<td>0~80V</td>
<td>0~9.5A</td>
<td>0~9.5A</td>
<td>0~19A</td>
<td>0~30A</td>
</tr>
<tr>
<td>0~100V</td>
<td>0~7.5A</td>
<td>0~7.5A</td>
<td>0~15A</td>
<td>0~24A</td>
</tr>
<tr>
<td>0~125V</td>
<td>0~8.0A</td>
<td>0~12.0A</td>
<td>0~16A</td>
<td>0~22A</td>
</tr>
<tr>
<td>0~150V</td>
<td>0~5.0A</td>
<td>0~5.0A</td>
<td>0~10A</td>
<td>0~16A</td>
</tr>
<tr>
<td>0~200V - NEW !</td>
<td>0~16.5A</td>
<td>0~25A</td>
<td>0~50A</td>
<td>0~75A</td>
</tr>
<tr>
<td>0~250V</td>
<td>0~40A</td>
<td>0~60A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0~300V</td>
<td>0~2.5A</td>
<td>0~2.5A</td>
<td>0~5A</td>
<td>0~8A</td>
</tr>
<tr>
<td>0~400V (5.0kW) - NEW !</td>
<td>0~12.5A</td>
<td>0~25A</td>
<td>0~37.5A</td>
<td></td>
</tr>
<tr>
<td>0~500V (5.0kW) - NEW !</td>
<td>0~10A</td>
<td>0~20A</td>
<td>0~30A</td>
<td></td>
</tr>
<tr>
<td>0~600V</td>
<td>0~1.3A</td>
<td>0~1.3A</td>
<td>0~2.6A</td>
<td>0~4A</td>
</tr>
<tr>
<td>0~800V - NEW !</td>
<td>0~12.5A</td>
<td>0~18.8A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0~1000V - NEW !</td>
<td>0~10A</td>
<td>0~15A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0~1250V - NEW !</td>
<td>0~8A</td>
<td>0~12A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0~1500V - NEW !</td>
<td>0~6.7A</td>
<td>0~10A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (kg/lb)</td>
<td>4.5 / 9.9</td>
<td>7.0 / 15.0</td>
<td>8.5 / 18.0</td>
<td>10.0 / 22.0</td>
</tr>
</tbody>
</table>

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

### AC Inputs

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>GENH</th>
<th>GEN-1U</th>
<th>GEN-2U</th>
<th>GEN 3U</th>
</tr>
</thead>
<tbody>
<tr>
<td>85-265Vac, 1Ø</td>
<td>● (1)</td>
<td>● (1)</td>
<td>● (1)</td>
<td></td>
</tr>
<tr>
<td>230Vac, 1Ø</td>
<td>● (1)</td>
<td>● (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>208Vac, 3Ø</td>
<td>● (1)</td>
<td>● (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>400Vac, 3Ø</td>
<td>● (1)</td>
<td>● (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>480Vac, 3Ø</td>
<td>● (2) - NEW !</td>
<td>● (2) - NEW !</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) UL Listed; CE Mark (RoHS2); (2) UL Listed (RoHS2); (3) UL Recognized, CE Mark (RoHS2) - (Vout > 25V); (4) UL Recognized, RoHS2 (Vout < 25V)

### Options (All Models)

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>“-----”</td>
<td>Standard RS-232/RS-485 Master with RS-485 Multi-Drop capability installed</td>
</tr>
<tr>
<td>LAN</td>
<td>LXI Compliant LAN Interface (Class C) with RS-485 Multi-Drop capability installed</td>
</tr>
<tr>
<td>IEMD</td>
<td>IEEE Master (IEEE 488.2 &amp; SCPI compliant) with RS-485 Multi-Drop capability installed</td>
</tr>
<tr>
<td>USB</td>
<td>USB (2.0) Master with RS-485 Multi-Drop capability installed</td>
</tr>
<tr>
<td>IS510</td>
<td>Isolated Analog Program/Monitor (0-5V or 0-10V, user-selectable) for 6V-600V models; *(5)</td>
</tr>
<tr>
<td>IS420</td>
<td>Isolated Analog Program/Monitor (4-20mA)</td>
</tr>
</tbody>
</table>

*(5) Isolated 5V/10V (IS510) Interface is built-in standard for 800V-1500V models

All “Options” are factory installed and limited to one “option” per power supply

All specifications are subject to change without notice