New! 800V, 1000V, 1250V and 1500V models - 10kW/15kW - 208VAC/400VAC/480VAC

Genesy

**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 ( LX) 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)



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

TDK·Lambda

www.us.tdk-lambda.com/hp

The Genesys<sup>™</sup> 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 3Φ AC inputs, (208VAC, 400VAC, 480VAC)
- Power Factor 0.88 (Passive PFC on all 3Φ 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  $\leq$  600V, standard for models with Vout  $\geq$  800V 4-20mA: option for all models

- LabView<sup>™</sup> and LabWindows<sup>™</sup> 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<sup>TM</sup>** 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<sup>™</sup> Family: <u>1U</u>-750W Half-Rack, <u>1U</u>-750W/ 1.5kW/2.4kW Full-Rack, <u>2U</u>-3.3kW/5kW Full-Rack and <u>3U</u>-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.

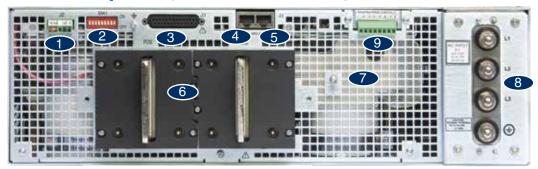
### Front Panel Description (7.5V $\leq$ Vout $\leq$ 25V)



- 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.
- 6. Current Display shows Output Current and displays Baud rate. Displays total current in Parallel Master/Slave Mode.
- 7. Function/Status LEDs:
  - Alarm
- Fine Control
- Preview Settings

- Foldback Mode
- Remote Mode
- Output On
- 8. Pushbuttons allow flexible user configuration
  - Coarse and Fine adjustment of Output Voltage/Output Current and Advanced Parallel Master or Slave select.
  - Preview Settings and set Voltage/Current with Output OFF, Front Panel Lock/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 $\leq$ Vout $\leq$ 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.
- RS-485 OUT to other Genesys<sup>™</sup> Power Supplies.
- 5. RS-232/RS-485 IN Remote Serial Programming.
- 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.

| Genesvs <sup>™</sup> | 311 | 10kW  | Specifica | tions |
|----------------------|-----|-------|-----------|-------|
| Genesys              | 30  | IUNVV | SUECITICA | uuis  |

| chesys do rokii opec   |     | utio     | 110     |          |        |           |             |          |        |        |        |         |        | 10kW |
|--|-----|----------|---------|----------|--------|-----------|-------------|----------|--------|--------|--------|---------|--------|------|
| 1.0 MODEL  | GEN | 7.5-1000 | 10-1000 | 12.5-800 | 20-500 | 25-400    | 30-333      | 40-250   | 50-200 | 60-167 | 80-125 | 100-100 | 125-80 | Х    |
| 1.Rated Output Voltage   | VDC | 7.5      | 10      | 12.5     | 20     | 25        | 30          | 40       | 50     | 60     | 80     | 100     | 125    | Х    |
| 2.Rated Output Current   | ADC | 1000     | 1000    | 800      | 500    | 400       | 333         | 250      | 200    | 167    | 125    | 100     | 80     | Х    |
| 3.Rated Output Power   | kW  | 7.5      | 10.0    | 10.0     | 10.0   | 10.0      | 10.0        | 10.0     | 10.0   | 10.0   | 10.0   | 10.0    | 10.0   | Х    |
| 4.Efficiency (min) at low AC line, 100% Rated Load   | %   | 77       |         |          |        |           |             | 83       |        |        |        |         |        | Х    |
|  |     |          |         |          | C      | ontact Fa | ctory for c | ther mod | els    |        |        |         |        | Х    |
| 1.1 CONSTANT VOLTAGE MODE (CV)   |     |          |         |          |        |           |             |          |        |        |        |         |        |      |
| 1. Max. Line Reg (0.1% - Vor ≤ 30V; 0.01% - 30V < Vor ≤ 600V; 0.05% - 600V < Vor ≤ 1500V)            | mV  | 7.5      | 10      | 12.5     | 20     | 25        | 30          | 4        | 5      | 6      | 8      | 10      | 12.5   | х    |
| 2. Max. Load Reg (0.1% for Vor ≤ 30V; 0.02% for 30V < Vor ≤ 600V; 0.1% for 600V < Vor ≤ 1500V); (*5) | mV  | 7.5      | 10      | 12.5     | 20     | 25        | 30          | 8        | 10     | 12     | 16     | 20      | 25     | Х    |
| 3. Output Ripple, rms (5Hz~1MHz), CV mode; (*1)  | mV  | 20       | 20      | 20       | 20     | 20        | 20          | 20       | 20     | 20     | 25     | 25      | 25     | Х    |

| 600V; 0.05% - 600V < Vor ≤ 1500V)  | mv       | 7.5      | 10         | 12.5        | 20       | 25          | 30        | 4        | 5          | 6        | 8         | 10  | 12.5 | × |
|--|----------|----------|------------|-------------|----------|-------------|-----------|----------|------------|----------|-----------|-----|------|---|
| 2. Max. Load Reg (0.1% for Vor ≤ 30V; 0.02% for 30V < Vor ≤ 600V; 0.1% for 600V < Vor ≤ 1500V); (*5) | mV       | 7.5      | 10         | 12.5        | 20       | 25          | 30        | 8        | 10         | 12       | 16        | 20  | 25   | Х |
| 3. Output Ripple, rms (5Hz~1MHz), CV mode; (*1)  | mV       | 20       | 20         | 20          | 20       | 20          | 20        | 20       | 20         | 20       | 25        | 25  | 25   | Х |
| 4. Output Noise, p-p (20MHz), CV mode; (*1)  | mV       | 60       | 60         | 60          | 60       | 60          | 60        | 60       | 75         | 75       | 100       | 100 | 125  | Х |
| 5.Remote Sense Compensation / Wire   | V        | 1        | 1          | 1           | 1        | 1           | 1.5       | 2        | 3          | 3        | 4         | 5   | 5    | Х |
| 6. Temperature Stability   |          | ± 0.05%  | 6 of Vo(ra | ted) over 8 | hours at | fter 30 mir | nute warn | up (cons | stant Line | , Load & | Temperatu | re) |      | Х |
| 7. Temperature Coefficient   | ppm / °C | ± 200 (: | ± 0.02% c  | of Vo(rated | )) / °C  |             |           |          |            |          |           |     |      | Х |
| 8. Up-Prog. Response Time, 0 ~ Vomax, full-load  | ms       |          |            |             |          |             |           | 100      |            |          |           |     |      | Х |
| 9. Up-Prog. Response Time, 0~Vomax, no-load  | ms       |          |            |             |          |             |           | 50       |            |          |           |     |      | Х |
| 10. Transient Response Time (CV mode); (*2), (*4)  | ms       |          |            |             |          |             | Les       | s than 3 |            |          |           |     |      | Х |

#### 1.2 CONSTANT CURRENT MODE (CC)

| 1. Max. Line Reg. (0.1% - Ior ≥ 333A; 0.050% - 17A < Ior < 333A; 0.15% - Ior < 17A)           | mA     | 1000     | 1000       | 800         | 500       | 400        | 333       | 125      | 100        | 83.5     | 62.5      | 50 | 40 | х |
|---|--------|----------|------------|-------------|-----------|------------|-----------|----------|------------|----------|-----------|----|----|---|
| 2. Max. Load Reg (0.1% - Ior ≥ 333A; 0.075% - 17A ≤ Ior < 333A; 0.2% - Ior < 17A); (*3), (*5) | mA     | 1000     | 1000       | 800         | 500       | 400        | 333       | 188      | 150        | 125      | 94        | 75 | 60 | Х |
| 3. Output Ripple, rms (5Hz~1MHz), CC mode   | mA     | 5300     | 4000       | 2560        | 1000      | 640        | 444       | 250      | 160        | 67       | 50        | 40 | 32 | Х |
| 4. Temperature Stability  |        | ± 0.05%  | of lo(rate | ed) over 8  | hours, af | ter 30 mir | nute warm | up (cons | stant Line | , Load & | Temperatu | e) |    | Х |
| 5. Temperature Coefficient  | ppm/°C | ± 300 (± | ± 0.03% o  | f lo(rated) | ) / °C    |            |           |          |            |          |           |    |    | Х |

#### 13 PROTECTIVE FUNCTIONS

| 1.3 PROTECTIVE FUNCTIONS              |    |   |   |
|---------------------------------------|----|---|---|
| 1. OCP                                | %  | 0 ~ 100   | X |
| 2. OCP type                           |    | Constant current  | X |
| 3. Foldback Protection (FOLD)         |    | Output shutdown; Manual reset by front panel OUT button or Digital communication, user-selectable   | X |
| 4. Foldback Response Time             | S  | Less than 1 (Min = 0.25 / Max = 25 / Default = 0.25); Settable via "FBD" command  | X |
| 5. OVP type                           |    | Inverter shut-down; Manual reset by AC On/Off recycle, OUT button, Remote Analog or Digital communication   | X |
| 6. OVP Programming Accuracy           | %  | ± 5% of Vo(rated)   | X |
| 7. OVP Trip Point                     | V  | 5% to 105% of Vo(rated) for Vor ≤ 600V; 10% to 105% of Vo(rated) for 600V < Vor ≤ 1500V Shall always be greater than 105% of Vo(setting); Default = 105% of Vo(rated) | х |
| 8. OVP Response Time                  | ms | Less than 10 (for Output to begin to drop) for Vor ≤ 600V Less than 2.0 (for Output to begin to drop) for 600V < Vor ≤ 1500V  | х |
| 9. Max. OVP Reset Time                | s  | 7 (from AC On/Off switch turn On)   | X |
| 10. Over-Temperature Protection (OTP) |    | Shut down if internal temperature exceeds safe operating levels (Latched: Safe / Unlatched: Auto)   | X |
| 11. Phase-Loss Protection             |    | Yes, power supply shutdown (Latched: Safe-Start / Unlatched: Auto-Restart)  | X |

#### 1.4 REMOTE ANALOG CONTROLS & SIGNALS

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

#### 1.5 FRONT PANEL

| I.S PHONT FANLE     |   |   |
|---------------------|---|---|
| 1.Control Functions | Vout/ lout manual adjust by separate encoders (COARSE and FINE adjustment selectable)                               | X |
|                     | OVP/UVL manual adjust by VOLTAGE Adjust encoder, Front Panel Lock/Unlock  | Х |
|                     | Address selection by VOLTAGE Adjust encoder. # of Addresses = 31  | X |
|                     | AC ON/OFF, Output On/Off, Restart Modes (Auto/Safe), Foldback Control (CV to CC), Go-to-Local                       | Х |
|                     | RS-232/RS-485, LAN, IEEE (IEMD) and USB selection by rear panel DIP-switch  | Х |
|                     | Baud rate selection (RS-232/RS-485 only): 1200, 2400, 4800, 9600 and 19,200 (by CURRENT Adjust encoder)             | Х |
|                     | Advanced Parallel Master/Slave: Hx = Master unit, where x = # of Slave units (0 to 4), S = Slave unit(s)            | Х |
| 2.Display           | Voltage: 4 digits, Accuracy: ± 0.5% of Vo(rated) ±1 count   | X |
|                     | Current: 4 digits, Accuracy: ± 0.5% of lo(rated) ±1 count   | Х |
|                     | VOLTAGE meter displays voltage at power supply (Local sense) or at load (Remote sense)                              | Х |
| 3.Indications       | Green LED's: PREVIEW, FOLD, REM/LOCAL, OUT ON/OFF, CV/CC, FINE<br>Red LED: ALARM (OVP, OTP, FOLD, AC FAIL, ENA, SO) | х |

#### 1.6 DIGITAL PROGRAMMING & READBACK

| 1.0 DIGITAL I HOGHAMMING & HEADDAOK |   |   |
|-------------------------------------|---|---|
| Vout Programming Accuracy           | ± 0.5% of Vo(rated)   | Х |
| 2. Iout Programming Accuracy        | ± 0.5% of lo(rated) for units with lo < 187.5A; ± 0.7% of lo(rated) for lo ≥187.5A  | Х |
| 3. Vout Programming Resolution      | 0.02% of Vo(rated)  | Х |
| 4. lout Programming Resolution      | 0.04% of lo(rated)  | Х |
| 5. Vout Readback Accuracy           | ± (0.1% of Vo(actual) + 0.2% of Vo(rated))  | Х |
| 6. lout Readback Accuracy           | ± (0.1% of lo(actual) + 0.4% of lo(rated))  | Х |
| 7. Vout Readback Resolution         | 0.02% of Vo(rated)  | Х |
| 8. lout Readback Resolution         | 0.02% of lo(rated)  | Х |
| 9. OV Response Time                 | 20ms maximum (between Vout exceeding IEEE Limit and supply Inhibit turning On)      | Х |
| 10. Other Functions                 | Set OVP/UVL limits; Set Local/Remote, Operating parameters and Status, Get Identity | Х |

<sup>\*1</sup> Ripple and Noise at Vo(rated) and rated Load, Ta = +25C and nominal AC Input per EIJ R900A.

\*2. Time for the Output voltage to recover within 2% of rating for a load current change of 50~100% or 100-50% of lo(rated).

\*3 .From 20% - 100% for models with lor < 17A.

\*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.

<sup>\*5.</sup> CV Mode: from 5% to 100% of Irated (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.

Genesys<sup>™</sup> 3U 10kW Specifications

|  | GEN  | 150-66   | 200-50   | 250-40  | 300-33   | 400-25   | 500-20   | 600-17  | 800-12.5   | 1000-10   | 1250-8              | 1500-6.7   | -  |
|--|--|--|--|---|--|--|--|---|--|---|---------------------|------------|--|
| 1.Rated Output Voltage   | VDC  | 150  | 200  | 250   | 300  | 400  | 500  | 600   | 800  | 1000  | 1250                | 1500       | 7  |
| 2.Rated Output Current   | ADC  | 66   | 50   | 40  | 33   | 25   | 20   | 17  | 12.5   | 10  | 8.0                 | 6.7        | 7  |
| 3.Rated Output Power   | kW   | 9.9  | 10.0   | 10.0  | 9.9  | 10.0   | 10.0   | 10.2  | 10.0   | 10.0  | 10.0                | 10.0       |  |
| 4.Efficiency (min) at low AC line, 100% Rated Load   | %  |  |  |   | 83   |  |  |   | 1  |   | 3.5                 |            |  |
|  | ,,,  |  |  |   |  | act Facto  | ry for othe  | er models   |  |   | 0.0                 |            |  |
| 1.1 CONSTANT VOLTAGE MODE (CV)   |  |  |  |   |  |  |  |   |  |   |                     |            | =  |
| 1. Max. Line Reg (0.1% - Vor ≤ 30V; 0.01% - 30V < Vor ≤ 600V; 0.05% - 600V < Vor ≤ 1500V)  | mV   | 15   | 20   | 25  | 30   | 40   | 50   | 60  | 400  | 500   | 625                 | 750        | )  |
|  | <del>                                     </del>   | ├──  |  |   |  |  |  |   | -  |   | -                   |            | ⊢  |
| 2. Max. Load Reg (0.1% - Vor ≤ 30V; 0.02% - 30V < Vor ≤ 600V; 0.1% - 600V < Vor ≤ 1500V); (*5)   | mV   | 30   | 40   | 50  | 60   | 80   | 100  | 120   | 800  | 1000  | 1250                | 1500       | )  |
| 3. Output Ripple, rms (5Hz~1MHz), CV mode; (*1)  | mV   | 25   | 35   | 35  | 60   | 60   | 60   | 60  | 80   | 100   | 120                 | 140        | <del>                                     </del> |
| 4. Output Noise, p-p (20MHz), CV mode; (*1)  | mV   | 150  | 175  | 200   | 200  | 300  | 350  | 350   | 700  | 800   | 1000                | 1400       |  |
| 5.Remote Sense Compensation / Wire   | V  | 5  |  | 5   | 5  | 5  | 5  | 5   | 5  | 5   | 5                   | 5          |  |
| 6. Temperature Stability   |  |  |  |   |  |  |  |   |  | Load & Te   |                     |            |  |
| o. Temperature Stability 7. Temperature Coefficient  | +  |  | 0.02% of   |   |  | iter 30 m  | nute warr  | n up (con   | istant Line,   | Load & le   | mperature)          | )          | '  |
| 8. Up-Prog. Response Time, 0~Vomax, full-load  | ppm / °C<br>ms   | ± 200 (t   | 0.02 % 01  | vo(rateu)   | 100  |  |  |   | 1  | 17  | 7                   |            |  |
| 9. Up-Prog. Response Time, 0~Vomax, no load  | ms   |  |  |   | 50   |  |  |   | <del>                                     </del>   | 17  |                     |            | -  |
| 10. Transient Response Time (CV mode); (*2), (*4)  | ms   |  |  |   | Less than  | 3  |  |   | <del>                                     </del>   | Less t  |                     |            |  |
|  | 1 1110   |  |  |   | LCGG triari  |  |  |   |  |   | nan i               |            | <u></u>  |
| 1.2 CONSTANT CURRENT MODE (CC)   | 1  |  |  |   |  |  |  |   |  |   |                     |            | _  |
| I. Max. Line Reg. (0.1% - Ior ≥ 333A; 0.050% - 17A < Ior <   | mA   | 33   | 25   | 20  | 17   | 13   | 10   | 9   | 19   | 15  | 12                  | 10         | )  |
| 333A; 0.15% - lor < 17A)<br>2. Max. Load Reg (0.1% - lor > 333A; 0.075% - 17A < lor <  | <del>                                     </del>   | <del> </del>   |  |   |  |  |  |   |  |   |                     |            | $\vdash$   |
| 2. Max. Load Heg (0.1% - Ior $\geq$ 333A; 0.075% - 17A $\leq$ Ior $<$ 333A; 0.2% - Ior $<$ 17A); (*3), (*5)  | mA   | 50   | 38   | 30  | 25   | 19   | 15   | 13  | 25   | 20  | 15                  | 14         | )  |
| 3. Output Ripple, rms (5Hz~1MHz), CC mode  | mA   | 26   | 20   | 16  | 13   | 10   | 8  | 7   | 15   | 10  | 6                   | 4          | -  |
|  |  |  |  |   |  |  |  |   |  |   |                     |            | '  |
| 4. Temperature Stability   |  |  |  |   |  | iei 30 Mil   | iule warm  | uh (con:  | siant LINE,  | Load & Ter  | nperature)          |            | -  |
| 5. Temperature Coefficient   | ppm / °C   | <u> </u> ± 300 (   | 0.03% of   | io(rated)   | 1/ 0   |  |  |   |  |   |                     |            |  |
| 1.3 PROTECTIVE FUNCTIONS   |  |  |  |   |  |  |  |   |  |   |                     |            |  |
| I. OCP   | %  | 0 ~ 100  |  |   |  |  |  |   |  |   |                     |            | oxdot  |
| 2. OCP type  |  |  | nt current   |   |  |  |  |   |  |   |                     |            |  |
| 3. Foldback Protection (FOLD)  |  |  |  |   |  |  |  |   |  | nunication,   | user-selec          | table      |  |
| 4. Foldback Response Time  | s  | Less the   | an 1 (Min  | 1 = 0.25 /  | Max = 25   | / Default  | = 0.25); S   | ettable vi  | a "FBD" co   | mmand   |                     |            |  |
| 5. OVP type  |  | Inverter   | shut-dov   | vn; Manu  | al reset by  | AC On/C  | Off recycle  | , OUT bu  | tton, Remo   | te Analog   | or Digital co       | omm.       |  |
| 6. OVP Programming Accuracy  | %  | ± 5% of  | f Vo(rated   | l)  |  |  |  |   |  |   |                     |            |  |
| 7. OVP Trip Point  | l v  |  |  |   |  |  |  |   |  | ' < Vor <u>&lt;</u> 15  | 500V                |            |  |
| . OVI IIIP I OIII  | \ \ \  |  |  |   |  |  |  |   | % of Vo(rate   | ed)   |                     |            |  |
| 8. OVP response time   | ms   |  |  |   |  |  | Vor ≤ 600  |   | 0) (   |   |                     |            |  |
| O May OVP reset time   | -  |  | AC On/O  |   |  | arop) to   | r 600V < \   | /or ≤ 150   | UV   |   |                     |            | Η,   |
| 9. Max. OVP reset time 10. Over-Temperature Protection (OTP)   | S  | <del></del>  |  |   |  |  | -fa anauati  | na lavala   | /I atalaadı  | Cofo / Unio   | atabadı A.ıt        | ia)        | -  |
| 11. Phase-Loss Protection  |  |  |  |   |  |  |  |   | uto-Restar   | Safe / Unla   | alcried. Aut        | .0)        | -  |
|  |  | 165, po  | wei supp   | iy siluluo  | WII (Latel   | eu. Jaie-  | Jiait / Oili   | alcineu. F  | uio-nesiai   | ij  |                     |            | <u> </u>   |
| 1.4 REMOTE ANALOG CONTROLS & SIGNALS   |  |  |  |   |  |  |  |   |  |   |                     |            | _  |
| 1. Vout Voltage Programming  | 0~100%,  |  |  |   |  |  |  |   |  |   |                     |            |  |
| 2. Iout Voltage Programming  | 0 ~ 100%   |  |  |   |  |  |  |   |  |   |                     |            |  |
|  |  |  |  |   |  |  |  |   | of Vo(rate   |   |                     |            |  |
| 3. Vout resistor programming   |  | 0~5/10ko   | hm full-er   |   |  |  | ov & Linas   |   | of lo(rated  | d)  |                     |            |  |
| 4. lout Resistor Programming   |  |  |  |   |  |  |  |   | · -· '   |   |                     |            |  |
| 4. lout Resistor Programming<br>5. Shut-Off (SO) Control (rear panel)  | By Voltag  | e: 0.6V =  | DIS, 2-15  | 5V = ENA  | (default)  | or Dry Co  | ntact : Op   | en = EN   | A, Short =   | DIS (user-s   | selectable I        | ogic)      | _  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor   | By Voltag<br>0 ~ 5V or   | e: 0.6V =<br>0 ~ 10V,  | DIS, 2-15<br>Accuracy  | 5V = ENA<br>: ± 1% of   | (default)<br>lo(rated),  | or Dry Co<br>user-sele   | ontact : Op<br>ctable  | en = EN   | A, Short =   | DIS (user-s   | selectable I        | logic)     |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor   | By Voltag<br>0 ~ 5V or<br>0 ~ 5V or  | e: 0.6V =<br>0 ~ 10V,<br>0 ~ 10V,  | DIS, 2-15<br>Accuracy<br>Accuracy  | 5V = ENA<br>: ± 1% of<br>: ± 1% of  | (default)<br>lo(rated),<br>Vo(rated)   | or Dry Co<br>user-sele<br>user-sele  | ontact : Op<br>ctable<br>ectable   | en = EN   | A, Short =   | DIS (user-s   | selectable I        | logic)     | -  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal   | By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL   | e: 0.6V =<br>0 ~ 10V,<br>0 ~ 10V,<br>high = Ok   | DIS, 2-15<br>Accuracy<br>Accuracy<br>(, 0V = Fa  | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>ail (500oh  | (default)<br>lo(rated),<br>Vo(rated)<br>m series   | or Dry Co<br>user-sele<br>user-sele<br>impedance   | ontact : Op<br>ctable<br>ectable<br>e)   |   |  |   |                     | logic)     |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal   | By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL   | e: 0.6V =<br>0 ~ 10V, 1<br>0 ~ 10V, 1<br>high = Ok<br>High (4 ~  | DIS, 2-15<br>Accuracy<br>Accuracy<br>(, 0V = Fa<br>5V), Max  | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>ail (500oh<br>source c  | (default) lo(rated), Vo(rated) m series urrent = 1   | or Dry Co<br>user-sele<br>user-sele<br>mpedanc<br>0mA; CC:   | ectable<br>ectable<br>ectable<br>re)   | (0 ~ 0.4\   | /), Max sinl   | k current =   |                     | ogic)      |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable  | By Voltag  0 ~ 5V or  0 ~ 5V or  Yes. TTL I  Dry conta   | e: 0.6V =<br>0 ~ 10V, 1<br>0 ~ 10V, 1<br>high = Ok<br>High (4 ~ 1<br>act; Open   | DIS, 2-15 Accuracy Accuracy K, 0V = Fa 5V), Max = OFF, S   | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>ail (500oh<br>source c<br>hort = ON   | (default) lo(rated), Vo(rated) m series urrent = 1 l; Maximu   | or Dry Co<br>user-sele<br>user-sele<br>impedanco<br>0mA; CC:<br>m voltage  | ectable TTL Low e across E   | (0 ~ 0.4\<br>nable/Dis  | /), Max sinl   | k current =   |                     | ogic)      |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection   | By Voltag  0 ~ 5V or  0 ~ 5V or  Yes. TTL    CV: TTL    Dry conta  | e: 0.6V =<br>0 ~ 10V, 1<br>0 ~ 10V, 1<br>high = Ok<br>High (4 ~ 1<br>act; Open<br>demote or  | DIS, 2-15 Accuracy Accuracy K, 0V = Fa 5V), Max = OFF, S Local op  | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>ail (500oh<br>source c<br>hort = Of<br>eration by   | I (default) Io(rated), Vo(rated) Im series urrent = 1 I; Maximu y voltage:   | or Dry Co<br>user-sele<br>user-sele<br>impedanc<br>0mA; CC:<br>m voltage<br>0 ~ 0.6V   | ontact : Operated to operate the contact in the con | (0 ~ 0.4\<br>nable/Dis<br>2 ~ 15V =   | /), Max sinl<br>sable conta<br>= Remote  | k current =<br>acts = 6V  | 10mA                |            |  |
| 1. lout Resistor Programming 2. Shut-Off (SO) Control (rear panel) 2. Output Current Monitor 2. Output Voltage Monitor 3. Power Supply OK (PS_OK) Signal 3. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection   | By Voltag  0 ~ 5V or  0 ~ 5V or  Yes. TTL    CV: TTL    Dry conta  | e: 0.6V =<br>0 ~ 10V, 1<br>0 ~ 10V, 1<br>high = Ok<br>High (4 ~ 1<br>act; Open<br>demote or  | DIS, 2-15 Accuracy Accuracy K, 0V = Fa 5V), Max = OFF, S Local op  | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>ail (500oh<br>source c<br>hort = Of<br>eration by   | I (default) Io(rated), Vo(rated) Im series urrent = 1 I; Maximu y voltage:   | or Dry Co<br>user-sele<br>user-sele<br>impedanc<br>0mA; CC:<br>m voltage<br>0 ~ 0.6V   | ontact : Operated to operate the contact in the con | (0 ~ 0.4\<br>nable/Dis<br>2 ~ 15V =   | /), Max sinl<br>sable conta<br>= Remote  | k current =   | 10mA                |            |  |
| 1. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal   | By Voltag  0 ~ 5V or  0 ~ 5V or  Yes. TTL    CV: TTL    Dry conta  | e: 0.6V =<br>0 ~ 10V, 1<br>0 ~ 10V, 1<br>high = Ok<br>High (4 ~ 1<br>act; Open<br>demote or  | DIS, 2-15 Accuracy Accuracy K, 0V = Fa 5V), Max = OFF, S Local op  | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>ail (500oh<br>source c<br>hort = Of<br>eration by   | I (default) Io(rated), Vo(rated) Im series urrent = 1 I; Maximu y voltage:   | or Dry Co<br>user-sele<br>user-sele<br>impedanc<br>0mA; CC:<br>m voltage<br>0 ~ 0.6V   | ontact : Operated to operate the contact in the con | (0 ~ 0.4\<br>nable/Dis<br>2 ~ 15V =   | /), Max sinl<br>sable conta<br>= Remote  | k current =<br>acts = 6V  | 10mA                |            |  |
| 1. Iout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 15. FRONT PANEL   | By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL CV: TTL I Dry conta Selects R Signals o   | e: 0.6V = 0 ~ 10V, 1 0 ~ 10V, 2 high = Ok High (4 ~ 2 act; Open demote or perating r   | DIS, 2-15 Accuracy Accuracy (, 0V = Fa 5V), Max = OFF, S Local op mode; Op   | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>ail (500oh<br>source c<br>hort = ON<br>eration by   | I (default) Io(rated), Vo(rated) Im series urrent = 1 I; Maximu y voltage: tor: Local  | or Dry Co<br>user-sele<br>user-sele<br>impedanc<br>0mA; CC:<br>m voltage<br>0 ~ 0.6V<br>= Open (l  | ontact : Operated to operate the contact is operated to operate the contact in th | (0 ~ 0.4\<br>nable/Dis<br>2 ~ 15V =<br>ge = 30V   | /), Max sinl<br>sable conta<br>= Remote  | k current =<br>acts = 6V<br>= On (Max                                 | 10mA                |            |  |
| I. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 15. FRONT PANEL   | By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL CV: TTL I Dry conta Selects R Signals o   | e: 0.6V = 0 ~ 10V, 1 0 ~ 10V, 2 high = Ok High (4 ~ 2 act; Open demote or perating r   | DIS, 2-15 Accuracy Accuracy (, 0V = Fa 5V), Max = OFF, S Local op mode; Op   | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>ail (500oh<br>source chort = ON<br>eration by<br>en collect   | I (default) Io(rated), Vo(rated) Im series urrent = 1 I; Maximu Voltage: tor: Local  | or Dry Couser-selectus | ontact : Operated in the contact : Operated in the contact in the  | (0 ~ 0.4\<br>nable/Dis<br>2 ~ 15V =<br>ge = 30V   | /), Max sinl<br>sable conta<br>= Remote<br>), Remote =   | k current =<br>acts = 6V<br>= On (Max                                 | 10mA                |            |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal   | By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL I CV: TTL I Dry conta Selects R Signals o   | e: 0.6V = 0 ~ 10V, 0 ~ 10V, high = Ok High (4 ~ act; Open Remote or perating r   | DIS, 2-15 Accuracy Accuracy C, 0V = Fa 5V), Max = OFF, S Local op mode; Op adjust by adjust by   | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>ail (500or<br>source c<br>hort = On<br>eration by<br>en collect<br>separate<br>VOLTAGI  | (default) lo(rated), Vo(rated) m series urrent = 1 N; Maximu y voltage: tor: Local encoders E Adjust e   | or Dry Couser-sele<br>user-sele<br>user-sele<br>impedance<br>0mA; CC:<br>m voltage<br>0 ~ 0.6V<br>= Open (I  | ontact : Opctable ectable ectable ectable ectable ectable ectable ectable experiment exp | (0 ~ 0.4\<br>nable/Dis<br>2 ~ 15V =<br>ge = 30V   | /), Max sinl<br>sable conta<br>= Remote<br>), Remote =   | k current =<br>acts = 6V<br>= On (Max                                 | 10mA                |            |  |
| 1. Iout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 15. FRONT PANEL   | By Voltag 0 ~ 5V or 0 ~ 5V or Yes.TTL CV:TTL h Dry conta Selects R Signals o   | e: 0.6V = 0 ~ 10V, 0 ~ 10V, high = OW High (4 ~ act; Open temote or perating r  manual a manual a seelection I   | DIS, 2-15 Accuracy Accuracy C, OV = Fa 5V), Max = OFF, S Local op mode; Op adjust by adjust by by Voltage  | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>ail (500oh<br>source c<br>hort = ON<br>eration by<br>een collect<br>separate<br>VOLTAGI<br>e Adjust e   | (default)<br>lo(rated),<br>Vo(rated)<br>m series<br>urrent = 1<br>l; Maximu<br>y voltage:<br>tor: Local<br>encoders<br>E Adjust e  | or Dry Cc<br>user-sele<br>user-sele<br>impedanc<br>0mA; CC:<br>m voltage<br>0 ~ 0.6V<br>= Open (I  | ontact : Operation of the control of | (0 ~ 0.4\<br>inable/Dis<br>2 ~ 15V =<br>ge = 30V<br>IE adjustr<br>I Lock/Ur   | /), Max sinl<br>sable conta<br>= Remote<br>), Remote =<br>ment select  | k current =<br>acts = 6V<br>= On (Max                                 | 10mA<br>sink currer |            |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal   | By Voltag 0 ~ 5V or 0 ~ 5V or Yes.TTL CV:TTL h Dry conta Selects R Signals o   | e: 0.6V = 0 ~ 10V, 0 ~ 10V, high = OW ligh (4 ~ loct; Open lemote or perating r manual a manual a selection I  | DIS, 2-15 Accuracy Accuracy C, 0V = Fe 5V), Max = OFF, S Local op mode; Op adjust by adjust by by Voltagu ut On/Off,   | 5V = ENA : ± 1% of : ± 1% of ail (500oh source c hort = ON eration be en collect separate VOLTAGI e Adjust € Restart I  | (default) lo(rated), Vo(rated) m series urrent = 1 l; Maximu y voltage: encoders E Adjust e encoder. # Modes (Ai   | or Dry Cc<br>user-sele<br>user-sele<br>user-sele<br>impedanc<br>0mA; CC:<br>m voltage<br>0 ~ 0.6V<br>= Open (I<br>(COARS<br>ncoder, F<br>of Addres<br>uto/Safe),   | ctable ectable | (0 ~ 0.4\\ nable/Dis 2 ~ 15V = ge = 30V  IE adjusti I Lock/Ur  Control (  | /), Max sint sable conta = Remote = Rem | k current = acts = 6V = On (Max table)                                | 10mA<br>sink currer |            |  |
| 1. Iout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 15. FRONT PANEL   | By Voltag 0 ~ 5V or 0 ~ 5V or Ves. TTL CV: TTL h Dry conta Selects R Signals o  Vout/ lout OVP/UVL Address s AC ON/O RS-232/F  | e: 0.6V = 0 ~ 10V, 0 ~ 10V, high = OW ligh (4 ~ loct; Open lemote or perating r manual a manual a selection I FF, Outpu  | DIS, 2-15 Accuracy Accuracy C, 0V = Fe 5V), Max = OFF, S Local op mode; Op adjust by adjust by by Voltagu at On/Off, AN, IEEE  | 5V = ENA : ± 1% of : ± 1% of ail (500oh source c hort = ON eration be en collect  Separate VOLTAGI e Adjust € Restart I : (IEMD) :  | (default) Io(rated), Vo(rated) Im series urrent = 1 I; Maximu y voltage: encoders E Adjust e encoder. # Modes (Al and USB  | or Dry Cc user-sele user-sele user-sele mpedanc 0mA; CC: m voltage 0 ~ 0.6V = Open (I  (COARS ncoder, F of Addre: uto/Safe), selection   | ctable ectable | (0 ~ 0.4\\ nable/Dis 2 ~ 15V = ge = 30V IE adjusti I Lock/Ur Control ( nel DIP-s  | /), Max sinls sable conta = Remote ), Remote = ment selections (CV to CC), switch  | k current = acts = 6V = On (Max table)                                | 10mA<br>sink currer | nt = 10mA) |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal   | By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL Dry conta Selects R Signals o  Vout/ lout OVP/UVL Address s AC ON/O RS-232/F Baud rate  | e: 0.6V = 0 ~ 10V, v 0 ~ 10V, v 10 ~ 10V,  | DIS, 2-15 Accuracy Accuracy C, 0V = Fs SV), Max = OFF, S Local op mode; Op adjust by by Voltag at On/Off, AN, IEEE n (RS-232   | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>ii (500or<br>source of<br>hort = Or<br>eration by<br>en collect<br>Separate<br>VOLTAGI<br>e Adjust &<br>Restart I<br>i (IEMD) &<br>2/RS-485   | (default) Io(rated), Vo(rated) Io(rated), Vo(rated) Im series urrent = 1 I; Maximu y voltage: tor: Local encoders E Adjust e encoder. # Modes (Al and USB only): 120   | or Dry Cc<br>user-sele<br>user-sele<br>user-sele<br>impedanc<br>0mA; Cc<br>m voltage<br>0 ~ 0.6V<br>= Open (I<br>(COARS<br>ncoder, F<br>of Addre<br>uto/Safe),<br>selection<br>10, 2400,   | ontact: Opctable ectable eptable eptab | (0 ~ 0.4\\ nable/Dis 2 ~ 15V = ge = 30V  IE adjusti I Lock/Ur  Control ( nel DIP-s 0 and 19   | //), Max sinflisable conta<br>= Remote<br>), Remote :<br>ment selections<br>(CV to CC),<br>switch<br>,200 (by Cl   | k current = acts = 6V = On (Max table)                                | 10mA sink currer    | nt = 10mA) |  |
| 1. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1.Control Functions   | By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL Dry conta Selects R Signals o  Vout/ lout OVP/UVL Address s AC ON/O RS-232/F Baud rate  | e: 0.6V = 0 ~ 10V, v o ~ 10V, v o ~ 10V, v o ~ 10V, v o o ~ 10V, v o o ~ 10V, v o o o o o o o o o o o o o o o o o o  | DIS, 2-18 Accuracy Accuracy C, 0V = Fs 5V), Max = OFF, S Local op mode; Op adjust by by Voltage at On/Off, AN, IEEE an (RS-232 Master/S  | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>ail (500or<br>source of<br>hort = Of<br>eration by<br>een collect<br>Separate<br>VOLTAGI<br>e Adjust e<br>Restart I<br>: (IEMD) is<br>2/RS-485<br>lave: Hx =  | (default) Io(rated), Vo(rated) Io(rated), Vo(rated) Im series urrent = 1 I; Maximu y voltage: tor: Local encoders E Adjust e encoder. If Modes (Al and USB only): 120 I Master to  | or Dry Cc user-sele user-sele user-sele mpedanc 0mA; Cc: m voltage 0 ~ 0.6V = Open (I  (COARS ncoder, F of Addre: uto/Safe), selection 10, 2400, unit, where   | ctable exctable exclusive exclus | (0 ~ 0.4\\ nable/Dis 2 ~ 15V = ge = 30V  IE adjusti I Lock/Ur  Control ( nel DIP-s 0 and 19   | //), Max sinflisable conta<br>= Remote<br>), Remote :<br>ment selections<br>(CV to CC),<br>switch<br>,200 (by Cl   | k current = acts = 6V = On (Max table) Go-to-Loc                      | 10mA sink currer    | nt = 10mA) |  |
| 1. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1.Control Functions   | By Voltag 0 ~ 5V or 0 ~ 5V or 7 ves. TTL Dry conta Selects R Signals o  Vout/ lout OVP/UVL Address s AC ON/O RS-232/F Baud rate Advanced   | e: 0.6V = 0 ~ 10V, \( \) 10V \( \) 1 | DIS, 2-15 Accuracy Accuracy C, OV = Fa StV), Max = OFF, S Local op mode; Op adjust by adjust by by Voltag ut On/Off, AN, IEEE n (RS-233 Master/S ccuracy:  | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>iii (500or<br>source of<br>hort = 0Th<br>eration by<br>eration by | (default) lo(rated), Vo(rated) m series urrent = 1 l; Maxim, y voltage: tor: Local encoders E Adjust e encoder. # Modes (Al and USB only): 12( Master L f Vo(rated)  | or Dry Cc user-sele user-sele user-sele user-sele oma; CC: m voltage 0 ~ 0.6V = Open (I  (COARS ncoder, F of Addre uto/Safe), selection 10, 2400, onit, where 0 ±1 coun  | ctable exctable exclusive exclus | (0 ~ 0.4\\ nable/Dis 2 ~ 15V = ge = 30V  IE adjusti I Lock/Ur  Control ( nel DIP-s 0 and 19   | //), Max sinflisable conta<br>= Remote<br>), Remote :<br>ment selections<br>(CV to CC),<br>switch<br>,200 (by Cl   | k current = acts = 6V = On (Max table) Go-to-Loc                      | 10mA sink currer    | nt = 10mA) |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 3. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1. Control Functions  | By Voltag 0 ~ 5V or 0 ~ 5V or 1 ~ 5V or 2 ~ 5V or 2 ~ 5V or 3 ~ 5V or 4 ~ 5V or 5 ~ 5V or 5 ~ 6V or 6 ~ 5V or 6 ~ 5V or 7 ~ 6V or 7 ~ 6V or 8 ~ 6V | e: 0.6V = 0 ~ 10V, 0  | DIS, 2-15 Accuracy Accuracy Accuracy C, 0V = F6 5V), Max = OFF, S Local op mode; Op adjust by by Voltag at On/Off, AN, IEEE n (RS-232 Master/S ccuracy: ccuracy: csplays vo  | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>: ± 1% of<br>iii (5000h<br>source c<br>hort = Oh<br>eration by<br>en collect<br>VOLTAGI<br>e Adjust e<br>Restart I<br>: (IEMD) :<br>: (IEMD) :<br>: 2/RS-485<br>lave: Hx =<br>± 0.5% of<br>± 0.5% of<br>bitage at p   | c(default) lo(rated), Vo(rated), Vo(rated) wo series urrent = 1 l; Maximu y voltage: tor: Local encoders = Adjust e encoders = Modes (Al and USB only): 12( = Master u f Vo(rated) lo(rated) bower sup   | or Dry Cc user-sele user-sele user-sele or North Common Co | ctable cotable | (0 ~ 0.4\inable/Dis<br>2 ~ 15V =<br>ge = 30V<br>IE adjusti<br>I Lock/Ur<br>Control (<br>nel DIP-s<br>0 and 19<br>Slave uni                              | //), Max sinll sable contage Remote   R | k current = tcts = 6V = On (Max table) Go-to-Loc URRENT A Slave = Sla | 10mA sink currer    | nt = 10mA) |  |
| 1. Iout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1. Control Functions  | By Voltag 0 ~ 5V or 0 ~ 5V or 10 ~ 5V or 20 ~ 5V or 20 ~ 5V or 21 ~ 5V or 22 ~ 5V or 23 ~ 6V or 24 ~ 6V or 25 ~ 6V or 26 ~ 6V or 26 ~ 6V or 27 ~ 6V or 28 ~ 6V or 28 ~ 6V or 28 ~ 6V or 29 ~ 6V or 20  | e: 0.6V = 0 ~ 10V, 0 ~ 10V, high = Ok light (4 ~ lot; Open demote or perating r  rmanual a manual a selection I FF, Outpu RS-485, L. e selectior d Parallel d digits, Ad a digits, Ad E meter di D's: PRE'   | DIS, 2-15 Accuracy Accuracy Accuracy Accuracy C, 0V = Fe 5V), Max = OFF, S Local op mode; Op adjust by by Voltage at On/Off, AN, IEEE n (RS-232 Master/S ccuracy: ccuracy: splays vo VIEW, FC  | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>: ± 1% of<br>iii (500ol-<br>source c<br>hort = Ol-<br>eration by<br>en collector<br>Separate<br>VOLTAGI<br>e Adjust e<br>Restart i<br>: (IEMD) i<br>: (IEMD) i<br>: (IEMD) i<br>: 2/RS-485<br>lave: Hx =<br>± 0.5% of<br>bltage at p<br>DLD, REI  | (default) Io(rated), Vo(rated), Vo(rated), Wo(rated), Wo(rated), Wo(rated), Wo(rated), Wo(rated) Left (Maximu, Woltage: Local encoders: Endjust e Encoders. # Wodes (Al, and USB only): 120 EMaster t F Vo(rated) Io(rated) Dower sup W/LOCAL  | or Dry Couser-sele user-sele user-sele user-sele user-sele mpedancoma; CC: m voltage 0 ~ 0.6V = Open ((COARS necoder, Fof Addrestoto/Safe), selection (0, 2400, init, where 1) ±1 count ±1 count ±1 count of OUT ON  | intact: Opticable obtable obta | (0 ~ 0.4\inable/Dis<br>2 ~ 15V =<br>ge = 30V<br>IE adjusti<br>I Lock/Ur<br>Control (<br>nel DIP-s<br>0 and 19<br>Slave uni                              | //), Max sinll sable contage Remote   R | k current = tcts = 6V = On (Max table) Go-to-Loc URRENT A Slave = Sla | 10mA sink currer    | nt = 10mA) |  |
| 1. Iout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1. Control Functions  | By Voltag 0 ~ 5V or 0 ~ 5V or 1 ~ 5V or 2 ~ 5V or 2 ~ 5V or 3 ~ 5V or 4 ~ 5V or 5 ~ 5V or 5 ~ 6V or 6 ~ 5V or 6 ~ 5V or 7 ~ 6V or 7 ~ 6V or 8 ~ 6V | e: 0.6V = 0 ~ 10V, 0 ~ 10V, high = Ok light (4 ~ lot; Open demote or perating r  rmanual a manual a selection I FF, Outpu RS-485, L. e selectior d Parallel d digits, Ad a digits, Ad E meter di D's: PRE'   | DIS, 2-15 Accuracy Accuracy Accuracy Accuracy C, 0V = Fe 5V), Max = OFF, S Local op mode; Op adjust by by Voltage at On/Off, AN, IEEE n (RS-232 Master/S ccuracy: ccuracy: splays vo VIEW, FC  | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>: ± 1% of<br>iii (500ol-<br>source c<br>hort = Ol-<br>eration by<br>en collector<br>Separate<br>VOLTAGI<br>e Adjust e<br>Restart i<br>: (IEMD) i<br>: (IEMD) i<br>: (IEMD) i<br>: 2/RS-485<br>lave: Hx =<br>± 0.5% of<br>bltage at p<br>DLD, REI  | (default) Io(rated), Vo(rated), Vo(rated), Wo(rated), Wo(rated), Wo(rated), Wo(rated), Wo(rated) Left (Maximu, Woltage: Local encoders: Endjust e Encoders. # Wodes (Al, and USB only): 120 EMaster t F Vo(rated) Io(rated) Dower sup W/LOCAL  | or Dry Couser-sele user-sele user-sele user-sele user-sele mpedancoma; CC: m voltage 0 ~ 0.6V = Open ((COARS necoder, Fof Addrestoto/Safe), selection (0, 2400, init, where 1) ±1 count ±1 count ±1 count of OUT ON  | intact: Opticable obtable obta | (0 ~ 0.4\inable/Dis<br>2 ~ 15V =<br>ge = 30V<br>IE adjusti<br>I Lock/Ur<br>Control (<br>nel DIP-s<br>0 and 19<br>Slave uni                              | //), Max sinll sable contage Remote   R | k current = tcts = 6V = On (Max table) Go-to-Loc URRENT A Slave = Sla | 10mA sink currer    | nt = 10mA) |  |
| 1. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1. Control Functions  | By Voltag 0 ~ 5V or 0 ~ 5V or 10 ~ 5V or 20 ~ 5V or 20 ~ 5V or 21 ~ 5V or 22 ~ 5V or 23 ~ 6V or 24 ~ 6V or 25 ~ 6V or 26 ~ 6V or 26 ~ 6V or 27 ~ 6V or 28 ~ 6V or 28 ~ 6V or 28 ~ 6V or 29 ~ 6V or 20  | e: 0.6V = 0 ~ 10V, 0 ~ 10V, high = Ok light (4 ~ lot; Open demote or perating r  rmanual a manual a selection I FF, Outpu RS-485, L. e selectior d Parallel d digits, Ad a digits, Ad E meter di D's: PRE'   | DIS, 2-15 Accuracy Accuracy Accuracy Accuracy C, 0V = Fe 5V), Max = OFF, S Local op mode; Op adjust by by Voltage at On/Off, AN, IEEE n (RS-232 Master/S ccuracy: ccuracy: splays vo VIEW, FC  | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>: ± 1% of<br>iii (500ol-<br>source c<br>hort = Ol-<br>eration by<br>en collector<br>Separate<br>VOLTAGI<br>e Adjust e<br>Restart i<br>: (IEMD) i<br>: (IEMD) i<br>: (IEMD) i<br>: 2/RS-485<br>lave: Hx =<br>± 0.5% of<br>bltage at p<br>DLD, REI  | (default) Io(rated), Vo(rated), Vo(rated), Wo(rated), W | or Dry Couser-sele user-sele user-sele user-sele user-sele mpedancoma; CC: m voltage 0 ~ 0.6V = Open ((COARS necoder, Fof Addrestoto/Safe), selection (0, 2400, init, where 1) ±1 count ±1 count ±1 count of OUT ON  | intact: Opticable obtable obta | (0 ~ 0.4\inable/Dis<br>2 ~ 15V =<br>ge = 30V<br>IE adjusti<br>I Lock/Ur<br>Control (<br>nel DIP-s<br>0 and 19<br>Slave uni                              | //), Max sinll sable contage Remote   R | k current = tcts = 6V = On (Max table) Go-to-Loc URRENT A Slave = Sla | 10mA sink currer    | nt = 10mA) |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 3. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1. Control Functions  | By Voltag 0 ~ 5V or 0 ~ 5V or 10 ~ 5V or 20 ~ 5V or 20 ~ 5V or 21 ~ 5V or 22 ~ 5V or 23 ~ 6V or 24 ~ 6V or 25 ~ 6V or 26 ~ 6V or 26 ~ 6V or 27 ~ 6V or 28 ~ 6V or 28 ~ 6V or 28 ~ 6V or 29 ~ 6V or 20  | e: 0.6V = 0 ~ 10V, 0 ~ 10V, 0 ~ 10V, high = Ok ligh (4 ~ 10t; Open lemote or perating r manual a manual a selection I FF, Outpuß 8-485, Lb e selection I digits, Ac digits, Ac digits, Ac digits, Ac manual a manual a selection I Parallel digits, Ac digits, Ac digits, Ac digits, Ac ac selection I Parallel digits, Ac digits, Ac digits, Ac digits, Ac ac manual a man | DIS, 2-15 Accuracy Accuracy Accuracy Accuracy C, 0V = Fa 5V), Max = OFF, S Local op mode; Op adjust by by Voltagu at On/Off, Accuracy I (RS-233 Master/S Couracy: cou | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>: ± 1% of<br>iii (500ol-<br>source c<br>hort = Ol-<br>eration by<br>en collector<br>Separate<br>VOLTAGI<br>e Adjust e<br>Restart i<br>: (IEMD) i<br>: (IEMD) i<br>: (IEMD) i<br>: 2/RS-485<br>lave: Hx =<br>± 0.5% of<br>bltage at p<br>DLD, REI  | (default) Io(rated), Vo(rated), Vo(rated), Wo(rated), W | or Dry Couser-sele user-sele user-sele user-sele user-sele mpedancoma; CC: m voltage 0 ~ 0.6V = Open ((COARS necoder, Fof Addrestoto/Safe), selection (0, 2400, init, where 1) ±1 count ±1 count ±1 count of OUT ON  | intact: Opticable obtable obta | (0 ~ 0.4\inable/Dis<br>2 ~ 15V =<br>ge = 30V<br>IE adjusti<br>I Lock/Ur<br>Control (<br>nel DIP-s<br>0 and 19<br>Slave uni                              | //), Max sinll sable contage Remote   R | k current = tcts = 6V = On (Max table) Go-to-Loc URRENT A Slave = Sla | 10mA sink currer    | nt = 10mA) |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 14. S FRONT PANEL 15. Control Functions  2. Display  2. Display  3. Indications 16. DIGITAL PROGRAMMING & READBACK 16. Vout Programming Accuracy  | By Voltag 0 ~ 5V or 0 ~ 5V or 7 ~ 5V or 7 ~ 5V or 7 Yes. TTL I Dry conta Selects R Signals o  Vout/ lout OVP/UVL Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 4 Current: 4 VOLTAGE Green LE Red LED:   | e: 0.6V = 0 ~ 10V, 0 ~ 10V, 10 ~ 10V | DIS, 2-15 Accuracy Accuracy Accuracy C, 0V = Fe 5V), Max = OFF, S Local op mode; Op adjust by by Voltag ut On/Off, AN, IEEE n (RS-232 Master/S ccuracy: ccuracy: ccuracy: ccuracy: ccuracy: ccuracy: (OVP, OT  | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>iii (500oh<br>source c<br>hort = Oh<br>eration by<br>en collect<br>separate<br>VOLTAGI<br>e Adjust e<br>Restart I<br>: (IEMD) i<br>2/RS-485<br>lave: Hx =<br>± 0.5% of<br>bltg at p<br>DLD, REI<br>P, FOLD,   | (default) lo(rated), Vo(rated) wo (rated), wo (rated)  | or Dry Cc user-sele user-sele user-sele user-sele or Dry Cc m voltage 0 ~ 0.6V = Open (I  (COARS ncoder, F of Addre uto/Safe), selection 100, 2400, nift, where 1 ± 1 count ply (Local OUT ON ENA, SO  | intact: Opctable exclude exclu | (0 ~ 0.4\sinable/Dis<br>2 ~ 15V =<br>ge = 30V<br>IE adjusti<br>I Lock/Ur<br>Control (<br>nel DIP-s<br>0 and 19<br>Slave uni<br>r at load (<br>/CC, FINI | //), Max sinll sable conta: Remote ; Remote se ; Remote s | k current = tcts = 6V = On (Max table) Go-to-Loc URRENT A Slave = Sla | 10mA sink currer    | nt = 10mA) |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 14. FRONT PANEL 15. FRONT PANEL 16. Control Functions 17. Display 18. Indications 18. Ind | By Voltag 0 ~ 5V or 0 ~ 5V or 7 ~ 5V or 7 ~ 5V or 7 ~ 5V or 10 ~ 6V or 10 ~ 6 | e: 0.6V = 0 ~ 10V, 0 ~ 10V, 10V, 10V, 10V, 10V, 10V, 10V, 10V,   | DIS, 2-15 Accuracy Accuracy Accuracy C, 0V = Fe 5V), Max = OFF, S Local op mode; Op adjust by by Voltag ut On/Off, AN, IEEE n (RS-232 Master/S ccuracy: csplays vo VIEW, FC (OVP, OT   | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>iii (500oh<br>source c<br>hort = Oh<br>eration by<br>en collect<br>separate<br>VOLTAGI<br>e Adjust e<br>Restart I<br>: (IEMD) i<br>2/RS-485<br>lave: Hx =<br>± 0.5% of<br>bltg at p<br>DLD, REI<br>P, FOLD,   | (default) lo(rated), Vo(rated) wo (rated), wo (rated)  | or Dry Cc user-sele user-sele user-sele user-sele or Dry Cc m voltage 0 ~ 0.6V = Open (I  (COARS ncoder, F of Addre uto/Safe), selection 100, 2400, nift, where 1 ± 1 count ply (Local OUT ON ENA, SO  | intact: Opctable exclude exclu | (0 ~ 0.4\sinable/Dis<br>2 ~ 15V =<br>ge = 30V<br>IE adjusti<br>I Lock/Ur<br>Control (<br>nel DIP-s<br>0 and 19<br>Slave uni<br>r at load (<br>/CC, FINI | //), Max sinll sable conta: = Remote ; , Remote : ment selection (CV to CC), switch ; ,200 (by Cl ts (0 to 4), (Remote se  | k current = tcts = 6V = On (Max table) Go-to-Loc URRENT A Slave = Sla | 10mA sink currer    | nt = 10mA) |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1. Control Functions  2. Display  3. Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. lout Programming Accuracy 3. Vout Programming Resolution  | By Voltag 0 ~ 5V or 0 ~ 5V or 0 ~ 5V or 10 ~ | e: 0.6V = 0 ~ 10V, 0 ~ 10V, 0 ~ 10V, high = Ok High (4 ~ let; Open lemote or perating r manual a selection l FF, Outpu RS-485, L selection d d Parallel d digits, Ad meter di D's: PRE ALARM  Vo(rated F (o(rated) Vo(rated)   | DIS, 2-15 Accuracy Accuracy Accuracy C, 0V = Fe 5V), Max = OFF, S Local op mode; Op adjust by by Voltag ut On/Off, AN, IEEE n (RS-232 Master/S ccuracy: csplays vo VIEW, FC (OVP, OT   | 5V = ENA<br>: ± 1% of<br>: ± 1% of<br>iii (500oh<br>source c<br>hort = Oh<br>eration by<br>en collect<br>separate<br>VOLTAGI<br>e Adjust e<br>Restart I<br>: (IEMD) i<br>2/RS-485<br>lave: Hx =<br>± 0.5% of<br>bltg at p<br>DLD, REI<br>P, FOLD,   | (default) lo(rated), Vo(rated) wo (rated), wo (rated)  | or Dry Cc user-sele user-sele user-sele user-sele or Dry Cc m voltage 0 ~ 0.6V = Open (I  (COARS ncoder, F of Addre uto/Safe), selection 100, 2400, nift, where 1 ± 1 count ply (Local OUT ON ENA, SO  | intact: Opctable exclude exclu | (0 ~ 0.4\sinable/Dis<br>2 ~ 15V =<br>ge = 30V<br>IE adjusti<br>I Lock/Ur<br>Control (<br>nel DIP-s<br>0 and 19<br>Slave uni<br>r at load (<br>/CC, FINI | //), Max sinll sable conta: = Remote ; , Remote : ment selection (CV to CC), switch ; ,200 (by Cl ts (0 to 4), (Remote se  | k current = tcts = 6V = On (Max table) Go-to-Loc URRENT A Slave = Sla | 10mA sink currer    | nt = 10mA) |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1. Control Functions  2. Display  3. Indications 14. Display 2. Display 3. Indications 15. Output Programming Accuracy 2. Lout Programming Accuracy 2. Iout Programming Resolution 4. Iout Programming Resolution 4. Iout Programming Resolution  | By Voltag 0 ~ 5V or 0 ~ 5V or 1 ~ 5V or 2 ~ 5V or 2 ~ 5V or 3 ~ 5V or 3 ~ 5V or 4 ~ 5V or 5 ~ 5V or 5 ~ 6V or 5 ~ 6V or 6 ~ 6V or 6 ~ 6V or 6 ~ 6V or 7 ~ 6V or 7 ~ 6V or 8 ~ 6V or 9 ~ 6V | e: 0.6V = 0 ~ 10V, 0  | DIS, 2-15 Accuracy Accuracy Accuracy C, 0V = Fe 5V), Max = OFF, S Local op mode; Op adjust by by Voltagy at On/Off, AN, IEEE n (RS-232 Master/S couracy: couracy: couracy: from (OVP, OT ) for units   | 5V = ENA : ± 1% of : ± 1% of : ± 1% of : ± 1% of init (5000h source c hort = Oh eration by en collect  VOLTAGI e Adjust e Restart I : (IEMD) ; 2/RS-485 lave: Hx = ± 0.5% of ± 0.5% of bltage at p DLD, REI P, FOLD, with lo <  | (default) lo(rated), Vo(rated) wo (rated) wo (rated) yo (rated)   | or Dry Cc user-sele user-sele user-sele user-sele or Dry Cc m voltage 0 ~ 0.6V = Open (I  (COARS ncoder, F of Addre uto/Safe), selection 100, 2400, nift, where 1 ± 1 count ply (Local OUT ON ENA, SO  | intact: Opctable exclude exclu | (0 ~ 0.4\sinable/Dis<br>2 ~ 15V =<br>ge = 30V<br>IE adjusti<br>I Lock/Ur<br>Control (<br>nel DIP-s<br>0 and 19<br>Slave uni<br>r at load (<br>/CC, FINI | //), Max sinll sable conta: = Remote ; , Remote : ment selection (CV to CC), switch ; ,200 (by Cl ts (0 to 4), (Remote se  | k current = tcts = 6V = On (Max table) Go-to-Loc URRENT A Slave = Sla | 10mA sink currer    | nt = 10mA) |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1. Control Functions  2. Display  3. Indications  1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. Lout Programming Accuracy 3. Vout Programming Resolution 4. lout Programming Resolution 5. Vout Readback Accuracy  | By Voltag 0 ~ 5V or 0 ~ 5V or 0 ~ 5V or 7 es. TTL I Dry conta Selects R Signals o  Vout/ lout OVP/UVL Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 4 VOLTAGE Green LE Red LED:  ± 0.5% of ± 0.5% of ± (0.1% of   | e: 0.6V = 0 ~ 10V, 0 ~ 10V, 10V, 10V, 10V, 10V, 10V, 10V, 10V,   | DIS, 2-15 Accuracy Accuracy Accuracy Accuracy C, 0V = Fa 5V), Max = OFF, S Local op mode; Op adjust by by Voltage at On/Off, An (RS-233 Master/S Ccuracy: Cc | 5V = ENA:  ± 1% of: ± 1% of: ± 1% of: source c hort = ON: eration b en collect  separate  VOLTAGI e Adjust e Restart I f (IEMD): 2/RS-485 lave: Hx = ± 0.5% of: boltage at p DLD, REIP P, FOLD, with lo < 6 of Vo(ra*   | (default) lo(rated), Vo(rated) wo (rated), vo(rated) win series urrent = 1 l; Maximu y voltage: cor: Local encoders Adjust e encoder. # wodes (Al addes (Al  | or Dry Cc user-sele user-sele user-sele user-sele or Dry Cc m voltage 0 ~ 0.6V = Open (I  (COARS ncoder, F of Addre uto/Safe), selection 100, 2400, nift, where 1 ± 1 count ply (Local OUT ON ENA, SO  | intact: Opctable exclude exclu | (0 ~ 0.4\sinable/Dis<br>2 ~ 15V =<br>ge = 30V<br>IE adjusti<br>I Lock/Ur<br>Control (<br>nel DIP-s<br>0 and 19<br>Slave uni<br>r at load (<br>/CC, FINI | //), Max sinll sable conta: = Remote ; , Remote : ment selection (CV to CC), switch ; ,200 (by Cl ts (0 to 4), (Remote se  | k current = tcts = 6V = On (Max table) Go-to-Loc URRENT A Slave = Sla | 10mA sink currer    | nt = 10mA) |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1. Control Functions  2. Display  3. Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. Lout Programming Resolution 4. Lout Programming Resolution 5. Vout Readback Accuracy 6. Lout Readback Accuracy  | By Voltag 0 ~ 5V or 0 ~ 5V or 7 ~ 5V or 7 ~ 5V or 7 ~ 5V or 7 ~ 5V or 8 - 5V or 7 ~ 5V or 7 ~ 5V or 8 - 5V or 9 - 5V | e: 0.6V = 0 ~ 10V, 0 ~ 10V, 10 ~ 10V, 10V, 10V, 10V, 10V, 10V, 10V, 10V,   | DIS, 2-15 Accuracy Accuracy Accuracy C, 0V = Fe 5V), Max = OFF, S Local op mode; Op adjust by by Voltag ut On/Off, AN, IEEE n (RS-232 Master/S ccuracy: ccuracy: ccuracy: ccuracy: ccuracy: divided by for units   | 5V = ENA:  ± 1% of: ± 1% of: ± 1% of: source c hort = ON: eration b en collect  separate  VOLTAGI e Adjust e Restart I f (IEMD): 2/RS-485 lave: Hx = ± 0.5% of: boltage at p DLD, REIP P, FOLD, with lo < 6 of Vo(ra*   | (default) lo(rated), Vo(rated) wo (rated), vo(rated) win series urrent = 1 l; Maximu y voltage: cor: Local encoders Adjust e encoder. # wodes (Al addes (Al  | or Dry Cc user-sele user-sele user-sele user-sele or Dry Cc m voltage 0 ~ 0.6V = Open (I  (COARS ncoder, F of Addre uto/Safe), selection 100, 2400, nift, where 1 ± 1 count ply (Local OUT ON ENA, SO  | intact: Opctable exclude exclu | (0 ~ 0.4\sinable/Dis<br>2 ~ 15V =<br>ge = 30V<br>IE adjusti<br>I Lock/Ur<br>Control (<br>nel DIP-s<br>0 and 19<br>Slave uni<br>r at load (<br>/CC, FINI | //), Max sinll sable conta: = Remote ; , Remote : ment selection (CV to CC), switch ; ,200 (by Cl ts (0 to 4), (Remote se  | k current = tcts = 6V = On (Max table) Go-to-Loc URRENT A Slave = Sla | 10mA sink currer    | nt = 10mA) |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1. Control Functions  2. Display  3. Indications  1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. Iout Programming Accuracy 3. Vout Programming Resolution 4. Iout Programming Resolution 5. Vout Readback Accuracy 6. Iout Readback Accuracy 7. Vout Readback Resolution  | By Voltag  0 ~ 5V or  0 ~ 5V or  Ves. TTL I  Dry conta  Selects R  Signals o  Vout/ lout  OVP/UVL  Address s  AC ON/O  RS-232/F  Baud rate  Advanced  Voltage: 4  VOLTAGE  Green LE  Red LED:  ± 0.5% of  0.02% of  0.04% of  ± (0.1% of  ± (0.1% of  0.02% of  0.02% of   | e: 0.6V = 0 ~ 10V, 0 ~ 10V, 10V, 10V, 10V, 10V, 10V, 10V, 10V,   | DIS, 2-15 Accuracy Accuracy Accuracy C, 0V = Fe 5V), Max = OFF, S Local op mode; Op adjust by by Voltag ut On/Off, AN, IEEE n (RS-232 Master/S ccuracy: ccuracy: ccuracy: ccuracy: ccuracy: divided by for units   | 5V = ENA:  ± 1% of: ± 1% of: ± 1% of: source c hort = ON: eration b en collect  separate  VOLTAGI e Adjust e Restart I f (IEMD): 2/RS-485 lave: Hx = ± 0.5% of: boltage at p DLD, REIP P, FOLD, with lo < 6 of Vo(ra*   | (default) lo(rated), Vo(rated) wo (rated), vo(rated) win series urrent = 1 l; Maximu y voltage: cor: Local encoders Adjust e encoder. # wodes (Al addes (Al  | or Dry Cc user-sele user-sele user-sele user-sele or Dry Cc m voltage 0 ~ 0.6V = Open (I  (COARS ncoder, F of Addre uto/Safe), selection 100, 2400, nift, where 1 ± 1 count ply (Local OUT ON ENA, SO  | intact: Opctable exclude exclu | (0 ~ 0.4\sinable/Dis<br>2 ~ 15V =<br>ge = 30V<br>IE adjusti<br>I Lock/Ur<br>Control (<br>nel DIP-s<br>0 and 19<br>Slave uni<br>r at load (<br>/CC, FINI | //), Max sinll sable conta: = Remote ; , Remote : ment selection (CV to CC), switch ; ,200 (by Cl ts (0 to 4), (Remote se  | k current = tcts = 6V = On (Max table) Go-to-Loc URRENT A Slave = Sla | 10mA sink currer    | nt = 10mA) |  |
| 4. lout Resistor Programming 5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1. Control Functions  2. Display  3. Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. Lout Programming Resolution 4. lout Programming Resolution 5. Vout Readback Accuracy 6. lout Readback Accuracy  | By Voltag 0 ~ 5V or 0 ~ 5V or 7 ~ 5V or 7 ~ 5V or 7 ~ 5V or 7 ~ 5V or 8 - 5V or 7 ~ 5V or 7 ~ 5V or 8 - 5V or 9 - 5V | e: 0.6V = 0 ~ 10V, 0  | DIS, 2-15 Accuracy Accuracy Accuracy C, OV = Fe 5V), Max = OFF, S Local op mode; Op adjust by adjust by by Voltagy by Voltagy adjust by by Voltagy by Voltagy by Voltagy COUP, OT  To make the couracy: couracy: couracy: couracy: couracy: couracy: couracy: applies to make the couracy by for units al) + 0.29 al) + 0.49   | 5V = ENA  : ± 1% of : ± 1% of : ± 1% of : ± 1% of init (500oh source c hort = Oh eration by en collect separate VOLTAGI e Adjust e Restart I (IEMD) : 2/RS-485 lave: Hx : ± 0.5% of obtage at p DLD, REI P, FOLD, with lo < 6 of Vo(ra 6 of Vo(ra 6 of Vo(ra  | c(default) lo(rated), Vo(rated), Vo(rated) wo rated), Vo(rated) wo series urrent = 1 d; Maximu voltage: tor: Local encoders = Adjust e encoders. # Modes (Ai and USB only): 12( = Master t f Vo(rated) lo(rated) lower sup M/LOCAL AC FAIL, 187.5A; ±  tted)) tted))   | or Dry Cc user-sele user-sele user-sele or North Common Co | intact: Opticable potable pota | (0 ~ 0.4\\ nable/Dis 2 ~ 15V = ge = 30V\\ IE adjusti I Lock/Ur\\ Control (\) nel DIP-s 0 and 19\\ Slave uni\\ r at load \(\) //CC, FINI\\ or lo ≥187\\  | //), Max sinll sable contas Remote   Re | k current = tcts = 6V = On (Max table) Go-to-Loc URRENT A Slave = Sla | 10mA sink currer    | nt = 10mA) |  |



<sup>\*1.</sup> Ripple and Noise at Vo(rated) and rated Load, Ta = +25C and nominal AC input, per EIJ R9002A \*2. Time for the Output voltage to recover within 2% of rating for a load current change of 50~100% or 100~50% of lo(rated). \*3. From 20% - 100% for models with lor < 17A.

<sup>\*4</sup> 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 Irated (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.

| T1/                     |    | 4-1-14 |       |       |      |
|-------------------------|----|--------|-------|-------|------|
| Genesvs <sup>TM</sup> 3 | 3U | 15kW   | Speci | ticat | ions |

| 1.0 MODEL  | GEN  | N/A               | N/A         | N/A                    | N/A        | N/A         | 30-500      | 40-375      | 50-300      |            |                    | 100-150     | 125-120 | _             |
|--|--|-------------------|-------------|------------------------|------------|-------------|-------------|-------------|-------------|------------|--------------------|-------------|---------|---------------|
| 1.Rated Output Voltage                                     | VDC  |                   |             |                        |            |             | 30          | 40          | 50          | 60         | 80                 | 100         | 125     |               |
| 2.Rated Output Current                                     | ADC  |                   |             |                        |            |             | 500         | 375         | 300         | 250        | 187.5              | 150         | 120     | +             |
| 3.Rated Output Power                                       | kW   |                   |             |                        |            |             | 15.0        | 15.0        | 15.0        | 15.0       | 15.0               | 15.0        | 15.0    | _             |
| I.Efficiency (min) at low AC line, 100% Rated Load         | %  |                   |             |                        |            |             |             |             |             | 88         |                    |             |         | +             |
| .1 CONSTANT VOLTAGE MODE (CV)                              |  |                   |             |                        | C          | ontact Fa   | ctory for o | other mod   | els         |            |                    |             |         |               |
| . Max. Line Reg (0.1% - Vor ≤ 30V; 0.01% - 30V < Vor ≤     | 1  | 1                 |             |                        |            |             | -           |             |             |            |                    |             |         | $\overline{}$ |
| 00V; 0.05% - 600V < Vor ≤ 1500V)                           | mV   |                   |             |                        |            |             | 30          | 4           | 5           | 6          | 8                  | 10          | 12.5    |               |
| . Max. Load Reg (0.1% - Vor ≤ 30V; 0.02% - 30V < Vor ≤     | mV   |                   |             |                        |            |             | 30          | 8           | 10          | 12         | 16                 | 20          | 25      | Ť             |
| 00V; 0.1% - 600V < Vor ≤ 1500V); (*5)                      |  | ļ                 |             |                        |            |             |             |             |             |            |                    |             |         | 4             |
| 3. Output Ripple, rms (5Hz~1MHz), CV mode; (*1)            | mV   |                   |             |                        |            |             | 20          | 20          | 20          | 20         | 25                 | 25          | 25      | +             |
| . Output Noise, p-p (20MHz), CV mode; (*1)                 | mV<br>V  |                   |             |                        |            |             | 60          | 60          | 75          | 75         | 100                | 100         | 125     | +             |
| .Remote Sense Compensation / Wire .Temperature Stability   |  |                   |             |                        |            |             | 1.5         | 2           | 3           | 3          | 4<br>Temperatu     | 5<br>       | 5       | +             |
| Temperature Stability Temperature Coefficient              | ppm / °C   |                   |             | f Vo(rated             |            | .ei 30 iiii | ilute waiti | Tup (cons   | starit Line | , LUAU &   | Temperatu          | 16)         |         | +             |
| . Up-Prog. Response Time, 0 ~ Vomax, full-load             | ms   | 1 200 (2          | 2 0.02 /0 0 |                        | ,,, ,      |             |             | 100         |             |            |                    |             |         | +             |
| . Up-Prog. Response Time, 0~Vomax, no load                 | ms   |                   |             |                        |            |             |             | 50          |             |            |                    |             |         | T             |
| 0. Transient Response Time (CV mode); (*2), (*4)           | ms   |                   |             |                        |            |             | Les         | s than 3    |             |            |                    |             |         | Ť             |
| .2 CONSTANT CURRENT MODE (CC)                              |  |                   |             |                        |            |             |             |             |             |            |                    |             |         |               |
| Max. Line Reg. (0.1% - lor ≥ 333A; 0.050% - lor < 333A)    | mA   |                   |             |                        |            |             | 500         | 375         | 334         | 125        | 94                 | 75          | 60      | Т             |
| . Max. Load Reg (0.1% - Ior ≥ 333A; 0.075% - 25A ≤ Ior <   |  |                   |             |                        |            |             | F00         | 075         | 004         | 100        | 141                |             | 00      | Ť             |
| 33A; 0.2% - lor < 25A); (*3), (*5)                         | mA   |                   |             |                        |            |             | 500         | 375         | 334         | 188        | 141                | 113         | 90      |               |
| . Ripple, rms (5Hz~1MHz), CC mode                          | mA   |                   |             |                        |            |             | 350         | 200         | 150         | 100        | 100                | 100         | 50      | Ţ             |
| . Temperature Stability                                    |  | -                 | -           |                        |            | er 30 mir   | ute warm    | up (cons    | tant Line   | , Load &   | Temperatur         | e)          |         | +             |
| . Temperature Coefficient                                  | ppm/°C   | <u> </u> ± 300 (± | ± 0.03% o   | f lo(rated)            | )/°C       |             | -           |             |             |            |                    |             |         | _             |
| 3 PROTECTIVE FUNCTIONS                                     |  |                   |             |                        |            |             |             |             |             |            |                    |             |         | _             |
| OCP  | %  | 0 ~ 100           |             |                        |            |             |             |             |             |            |                    |             |         | 4             |
| . OCP type   |  |                   | nt current  |                        |            |             |             |             |             |            |                    |             |         | 4             |
| S. Foldback Protection (FOLD)                              |  | <del></del>       |             |                        |            |             |             |             |             |            | n, user-sele       | ectable     |         | 4             |
| I. Foldback Response Time                                  | S  | -                 |             | = 0.25 / N             |            |             |             |             |             |            |                    |             |         | +             |
| i. OVP type  |  | <del> </del>      |             |                        | reset by   | AC On/C     | π recycle,  | OUT but     | ton, Hem    | ote Anaic  | og or Digita       | communic    | cation  | +             |
| . OVP Programming Accuracy                                 | %  |                   | Vo(rated)   |                        | - for Vor  | < 600V·     | 10% to 10   | 5% of Vo    | rated) - 6  | 500V < Vc  | or ≤ 1500V         |             |         | +             |
| OVP Trip Point   | V  |                   |             | reater tha             |            |             |             |             |             |            | 51 <u>5</u> 1000 V |             |         |               |
| . OVP Response Time  | ms   | Less tha          | an 10 (for  | Output to<br>Output to | begin to   | drop) for   | Vor ≤ 600   | V           |             |            |                    |             |         | Ī             |
| . Max. OVP Reset Time                                      | s  |                   |             | f switch tu            |            | агор) тог   | 0001 (1     | 01 2 1000   |             |            |                    |             |         | t             |
| 10. Over-temperature Protection (OTP)                      |  | _ `               |             |                        |            | ceeds sa    | fe operati  | na levels   | (Latched    | : Safe / U | nlatched: A        | uto)        |         | Ť             |
| 11. Phase-Loss Protection                                  | <b>†</b>   |                   |             | y shutdow              |            |             |             |             |             |            |                    |             |         | Ť             |
| 1.4 REMOTE ANALOG CONTROLS & SIGNALS                       |  |                   |             |                        |            |             |             |             |             |            |                    |             |         |               |
| . Vout Voltage Programming                                 | 0~100%,  | 0 ~ 5V or         | 0 ~ 10V, ı  | user-selec             | table., Ac | curacy &    | Linearity:  | ±1% of \    | o(rated)    |            |                    |             |         | Т             |
| 2. lout Voltage Programming                                | 0~100%,  | 0 ~ 5V or         | 0 ~ 10V, ı  | user-selec             | table, Acc | uracy &     | Linearity:  | ± 1% of I   | o(rated)    |            |                    |             |         | Ť             |
| 3. Vout Resistor Programming                               | 0~100%,  | 0 ~ 5/10kg        | ohm full-s  | cale, user             | -selectabl | e, Accura   | acy & Line  | earity: ± 1 | % of Vo(r   | ated)      |                    |             |         | Т             |
| I. lout Resistor Programming                               | 0~100%,  | 0 ~ 5/10k         | ohm full-s  | cale, user             | -selectabl | e, Accura   | acy & Line  | earity: ± 1 | % of lo(ra  | ated)      |                    |             |         | $\perp$       |
| 5. Shut-Off (SO) Control (rear panel)                      |  |                   |             |                        |            |             |             | en = ENA    | , Short =   | DIS (use   | r-selectable       | logic)      |         | ┙             |
| 6. Output Current Monitor                                  |  | 0 ~ 10V, A        |             |                        | ` ''       |             |             |             |             |            |                    |             |         | 1             |
| COutput Voltage Monitor                                    |  | 0 ~ 10V, A        |             |                        |            |             |             |             |             |            |                    |             |         | 4             |
| B. Power Supply OK (PS_OK) Signal                          |  | High = Oh         |             |                        |            |             |             |             |             |            |                    |             |         | 4             |
| 9. CV/CC Signal  |  | High (4 ~ !       |             |                        |            |             |             |             |             |            |                    |             |         | +             |
| 0. Enable/Disable  |  | act; Open         |             |                        |            |             |             |             |             | acts = 6V  |                    |             |         | +             |
| 1. Remote/Local Selection                                  | +  | Remote or         |             |                        |            |             |             |             |             | On /M      | av siale suu       |             | ۸\      | +             |
| 2. Remote/Local Signal                                     | Signals o  | perating n        | node; Ope   | en collecto            | r: Locai = | Open (i     | viax voitag | je = 30V)   | , Hemote    | = On (IVI  | ax sink curi       | rent = 10m. | A)      | _             |
| .5 FRONT PANEL   | ,  |                   |             |                        |            |             |             |             |             |            |                    |             |         |               |
| .Control Functions   | 1  | t manual a        | , ,         | •                      | ,          |             |             | •           |             | ctable)    |                    |             |         | L             |
|  |  | _ manual a        |             |                        |            |             |             |             | ock         |            |                    |             |         | Ļ             |
|  |  | selection b       | -           | -                      |            |             |             |             | N/ +- 00    |            |                    |             |         | ŀ             |
|  |  | FF, Outpu         |             |                        |            |             |             | ,           |             | ), Go-to-L | _ocai              |             |         | ŀ             |
|  | 1  | RS-485, LA        |             | . ,                    |            |             |             |             |             | A .        | djust encod        |             |         | ŀ             |
|  |  | d Parallel I      | •           |                        |            |             |             |             |             |            | •                  | ei)         |         | H             |
| P.Display  |  | 4 digits, Ad      |             |                        |            |             |             | Siave unit  | 5 (0 10 4)  | , 0 – Slav | ve uriit(s)        |             |         | +             |
|  |  | 4 digits, Ad      |             |                        | . ,        |             |             |             |             |            |                    |             |         | H             |
|  |  | E meter di        |             |                        |            |             |             | at load (   | Remote s    | sense)     |                    |             |         | H             |
| 3.Indications  |  | D's: PRE          |             |                        |            |             |             |             |             | /          |                    |             |         | 十             |
|  |  | :.ALARM           |             |                        |            |             |             |             | _           |            |                    |             |         |               |
| 6 DIGITAL PROGRAMMING & READBACK                           |  |                   |             |                        |            |             |             |             |             |            |                    |             |         | _             |
| Vout Programming Accuracy                                  | ± 0.5% o   | f Vo(rated)       | )           |                        |            |             |             |             |             |            | -                  |             |         | Т             |
| Lout Programming Accuracy                                  | <del>•                                      </del> | f lo(rated)       |             | with lo < 1            | 87.5A; ± 0 | .7% of Id   | (rated) fo  | r lo ≥187.  | 5A          |            | -                  |             |         | T             |
| B. Vout Programming Resolution                             |  | Vo(rated)         |             |                        |            |             | ,           |             |             |            |                    |             |         | †             |
| I. lout Programming Resolution                             | 0.04% of   |                   |             |                        |            |             |             |             |             |            |                    |             |         | Ť             |
| 5. Vout Readback Accuracy                                  | <del>•                                      </del> | of Vo(actua       | al) + 0.2%  | of Vo(rate             | ed))       |             |             |             |             |            |                    |             |         | I             |
| 6. lout Readback Accuracy                                  | ± (0.1% c  | of lo(actua       | l) + 0.4%   | of lo(rated            | d))        |             |             |             |             |            |                    |             |         | I             |
|  |  | Va(ratad)         |             |                        |            |             |             |             |             |            |                    |             |         | Τ             |
| 7. Vout Readback Resolution                                | 0.02% of   | vo(rateu)         |             |                        |            |             |             |             |             |            |                    |             |         |               |
| 7. Vout Readback Resolution<br>3. lout Readback Resolution | 0.02% of   | lo(rated)         |             |                        |            |             |             |             |             |            |                    |             |         | 1             |
| 7. Vout Readback Resolution                                | 0.02% of<br>20ms ma                                |                   |             |                        |            |             |             |             |             |            |                    |             |         | $\frac{1}{1}$ |

<sup>\*1.</sup> Ripple and Noise at Vo(rated) and rated Load, Ta = 25C and nominal AC input, per EIJ R9002A.

\*2. Time for the Output voltage to recover within 2% of rating for a load current change of 50~100% or 100-50% of rated Output.

\*3. From 20% - 100% for models with lor < 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 Irated (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.

Genesys™ 3U 15kW Specifications

| 1.0 MODEL  | GEN  | 150-100      |            | 250-60      | 300-50      | 400-37.5               | 500-30     |                    | 800-18.8    | 1000-15      | 1250-12       | 1500-10   |   |
|--|--|--------------|------------|-------------|-------------|------------------------|------------|--------------------|-------------|--------------|---------------|-----------|---|
| 1.Rated Output Voltage   | VDC  | 150          | 200        | 250         | 300         | 400                    | 500        | 600                | 800         | 1000         | 1250          | 1500      |   |
| 2.Rated Output Current   | ADC  | 100          | 75         | 60          | 50          | 37.5                   | 30         | 25                 | 18.8        | 15           | 12            | 10        |   |
| B.Rated Output Power   | kW   | 15.0         | 15.0       | 15.0        | 15.0        | 15.0                   | 15.0       | 15.0               | 15.04       | 15.0         | 15.0          | 15.0      |   |
| 1.Efficiency (min) at low AC line, 100% Rated Load   | %  |              |            |             | 88          |                        |            |                    |             | 9            | 3.5           |           |   |
| 1.1 CONSTANT VOLTAGE MODE (CV)   |  |              |            |             | Con         | act Factor             | y for othe | r models           |             |              |               |           |   |
| 1. Max. Line Reg (0.1% - Vor ≤ 30V; 0.01% - 30V < Vor ≤ 600V; 0.05% - 600V < Vor ≤ 1500V)      | mV   | 15           | 20         | 25          | 30          | 40                     | 50         | 60                 | 400         | 500          | 625           | 750       |   |
| 2. Max. Load Reg (0.1% - Vor ≤ 30V; 0.02% - 30V < Vor ≤ 600V; 0.1% - 600V < Vor ≤ 1500V); (*5) | mV   | 30           | 40         | 50          | 60          | 80                     | 100        | 120                | 800         | 1000         | 1250          | 1500      |   |
| 3. Output Ripple, rms (5Hz~1MHz), CV mode; (*1)  | mV   | 25           | 35         | 35          | 60          | 60                     | 60         | 60                 | 80          | 100          | 120           | 140       |   |
| 4. Output Noise, p-p (20MHz), CV mode; (*1)  | mV   | 150          | 175        | 200         | 200         | 300                    | 350        | 350                | 700         | 800          | 1000          | 1400      | ᆫ |
| 5.Remote Sense Compensation / Wire   | V  | 5            | 5          | 5           | 5           | 5                      | 5          | 5                  | 5           | 5            | 5             | 5         | H |
| 6. Temperature Stability   | ppm / °C   |              |            |             |             | atter 30 m             | inute war  | m up, con          | stant Line  | , Load & Te  | mperature     |           | ⊢ |
| 7. Temperature Coefficient 3. Up-Prog. Response Time, 0~Vomax, full-load                       | ms ms  | 200 (0.      | 02% of V   | o(rated)) / | 100         |                        |            |                    |             | 17           | 7             |           | ⊢ |
| D. Up-Prog. Response Time, 0~Vomax, no load  | ms   |              | -          |             | 50          |                        | -          |                    |             | 17           |               |           | H |
| 10. Transient Response Time (CV mode); (*2), (*4)  | ms   |              |            |             | Less than   | 3                      |            |                    |             | Less tl      |               |           | Н |
| 1.2 CONSTANT CURRENT MODE (CC)   |  |              |            |             |             |                        |            |                    |             |              |               |           |   |
| . Max. Line Reg (0.1% - lor ≥ 333A; 0.050% - lor < 333A)                                       | mA   | 50           | 38         | 30          | 25          | 19                     | 15         | 13                 | 28          | 23           | 18            | 15        | г |
| 2. Max. Load Reg (0.1% - lor ≥ 333A; 0.075% - 25A ≤ lor <                                      |  |              |            |             |             |                        |            |                    |             | -            |               |           | H |
| 33A; 0.2% - lor < 25A); (*3), (*5)   | mA   | 75           | 57         | 45          | 38          | 28                     | 23         | 19                 | 38          | 30           | 24            | 20        |   |
| B. Output Ripple, rms (5Hz~1MHz), CC mode  | mA   | 50           | 20         | 20          | 20          | 10                     | 10         | 10                 | 15          | 10           | 6             | 4         | Т |
| 4. Temperature Stability   |  | ± 0.05%      | % of lo(ra | ted) over   | 8 hours a   | fter 30 mir            |            |                    |             | Load & Ter   | nperature)    |           | T |
| 5. Temperature Coefficient   | ppm / °C   | <del> </del> | ± 0.03%    |             |             |                        |            |                    |             |              |               |           | Г |
| 1.3 PROTECTIVE FUNCTIONS   |  |              |            |             |             |                        |            |                    |             |              |               |           | _ |
| I. OCP   | %  | 0 ~ 100      | )          |             |             |                        |            |                    |             |              |               |           | Г |
| 2. OCP type  |  |              | nt current |             |             |                        |            |                    |             |              |               |           | Н |
| 3. Foldback Protection   |  |              |            |             | I reset by  | front nane             | el OUT bi  | tton or DI         | gital comp  | nunication   | user-select   | able      | H |
| 4. Foldback Response Time  | s  | <del></del>  |            |             |             |                        |            |                    | a "FBD" co  |              | 4001 001001   | abic      | Н |
| 5. OVP type  |  | -            |            |             |             |                        |            |                    |             |              | igital comm   | unication | 一 |
| 6. OVP Programming Accuracy  | %  |              | f Vo(rated |             |             |                        | .,,        |                    |             |              | 9             |           | Г |
| <u> </u>   | †  |              |            |             | d) - for Vo | r < 600V:              | 10% to 10  | 15% of Vo          | rated) - 60 | 00V < Vor <  | : 1500V       |           | L |
| 7. OVP Trip Point  | V  | Shall al     | lways be   | greater th  | an 105%     | of Vo(setti            | ng); Defa  | ult = 105%         | of Vo(rat   |              |               |           | L |
| 3. OVP response time   | ms   |              |            |             |             | drop) for<br>drop) for |            |                    | )V          |              |               |           | ĺ |
| 9. Max. OVP reset time   | s  |              | AC On/C    |             |             | o diop) ioi            | 0001       | 101 2 1000         | •           |              |               |           | ⊢ |
| 10. Over temperature Protection  |  | -            |            |             |             | voode ea               | fe onerati | na lovele          | (Latched:   | Safa / Linia | tched: Auto   | Λ         | H |
| 11. Phase Loss Protection  |  |              |            |             |             |                        |            |                    | uto-Restar  |              | itorioa. Auto | ,         | Н |
| '  |  | 100, po      |            | ,           | (==         |                        |            |                    |             | -/           |               |           | _ |
| 1.4 REMOTE ANALOG CONTROLS & SIGNALS 1. Vout Voltage Programming                               | 0 100%   | 0 EV 0       | r 0 10\/   | upor pole   | otoblo A    | curacy &               | Lincority  | . 10/ of \         | /o/rotod)   |              |               |           | _ |
| 2. lout Voltage Programming  | -  |              |            |             |             | curacy &               |            |                    |             |              |               |           | H |
| 3. Vout resistor programming   | <del> </del>                                       |              |            |             |             |                        |            |                    | of Vo(rate  | id)          |               |           | H |
| 4. lout Resistor Programming   |  |              |            |             |             |                        |            |                    | of lo(rate  |              |               |           | H |
| 5. Shut-Off (SO) Control (rear panel)  |  |              |            |             |             |                        |            |                    |             |              | ectable logi  | c)        | H |
| 6. Output Current Monitor  | <del></del>  |              |            |             |             | user-sele              |            |                    | ,           | (            |               | -,        |   |
| 7. Output Voltage Monitor  |  |              |            |             |             | , user-sele            |            |                    |             |              |               |           | Г |
| 8. Power Supply OK (PS_OK) Signal  | <del>.                                      </del> |              |            |             |             | impedano               |            |                    |             |              |               |           | T |
| 9. CV/CC Signal  |  |              |            |             |             |                        |            | (0 ~ 0.4V          | ), Max sin  | k current =  | 10mA          |           |   |
| 10. Enable/Disable   |  |              |            |             |             |                        |            |                    | contacts =  | 6V           |               |           | Г |
| 11. Remote/Local Selection   | Selects F  | Remote or    | Local op   | eration by  | / voltage:  | 0 ~ 0.6V =             | Local / 2  | 2 - 15V = I        | Remote      |              |               |           |   |
| 12. Remote/Local Signal  | Signals o  | perating i   | mode; Op   | en collec   | tor: Local  | = Open (N              | /lax volta | ge = 30V)          | , Remote    | On (Max      | sink curren   | t = 10mA) |   |
| .5 FRONT PANEL   |  |              |            |             |             |                        |            |                    |             |              |               |           |   |
| 1.Control Functions  | Vout/ Iou  | t manual a   | adjust by  | separate    | encoders    | (COARSI                | and FIN    | IE adjustn         | nent selec  | table)       |               |           | Г |
|  | OVP/UVL  | manual       | adjust by  | VOLTAGI     | E Adjust e  | ncoder, Fi             | ont Pane   | I Lock/Un          | lock        |              |               |           |   |
|  | Address  | selection    | by VOLTA   | GE Adjus    | st encode   | r. # of Add            | resses =   | 31                 |             |              |               |           |   |
|  | AC ON/C  | FF, Outpu    | ut On/On   | n, Restar   | Modes (     | Auto/Safe)             | , Foldbac  | k Control          | (CV to CC   | ), Go-to-Lo  | cal           |           | ᆫ |
|  | RS232/R  | S-485, LA    | AN, IEEE   | (IEMD) a    | nd USB s    | election b             | y rear par | nel DIP-sv         | /itch       |              |               |           | ᆫ |
|  |  |              | •          |             |             |                        |            |                    |             |              | djust enco    | der)      | Ĺ |
|  |  |              |            |             |             |                        |            | Slave unit         | s (0 to 4); | S = Slave ı  | unit(s)       |           | L |
| 2.Display  |  | 0 ,          | ,          |             | •           | ) ±1 count             |            |                    |             |              |               |           |   |
|  | Current: 4   |              |            |             |             |                        |            |                    |             |              |               |           | _ |
|  |  |              | <u> </u>   | <u> </u>    |             |                        |            |                    | Remote se   | ense)        |               |           | L |
| 3.Indications  |  |              |            |             |             | , OUT ON               |            | /CC, FINI          | =           |              |               |           |   |
| I.6 DIGITAL PROGRAMMING & READBACK   | I HealtED  | ALAKM        | (UVP, UI   | r, ruld,    | AU FAIL     | ENA, SO                | )          |                    |             |              |               |           |   |
| Nout Programming Accuracy  | ± 0.5% o   | f Vo(rated   | D)         |             |             |                        |            |                    |             |              |               |           |   |
| 2. lout Programming Accuracy   | <del>.                                      </del> |              |            | with In -   | 1875∆. ⊥    | /-0.7% of I            | o(rated) f | or lo >187         | 75A         |              |               |           |   |
| 3. Vout Programming Resolution   | 0.02% of   |              |            |             | .oon, T     | J.1 /0 UI I            | S(Idiou) I | S. 10 <u>2</u> 101 |             |              |               |           | H |
| 4. lout Programming Resolution   | 0.02 % of  |              |            |             | -           |                        |            |                    |             |              |               |           | H |
| 5. Vout Readback Accuracy  | ± (0.1% d  |              | al) + 0.29 | 6 of Vo(ra  | ted))       | -                      |            |                    |             |              | -             |           | H |
| 6. lout Readback Accuracy  | ± (0.1% c  |              |            |             |             | -                      |            |                    |             |              | -             |           | Г |
| 7. Vout Readback Resolution  | 0.02% of   |              |            | 25(.00      |             | -                      | -          |                    |             |              |               |           | H |
|  | <del>.                                      </del> | lo(rated)    |            |             | -           | -                      | -          |                    |             |              |               |           | Т |
| 8. lout Readback Resolution  |  |              |            |             |             |                        |            |                    |             |              |               |           |   |
| Nout Readback Resolution     OV Response Time  | <del>.                                      </del> |              | etween V   | out excee   | eding OVI   | Limit and              | l supply i | nhibit turn        | ing On)     |              |               |           | Г |

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

All specifications subject to change without notice.



<sup>\*1.</sup> Ripple and Noise at Vo(rated) and rated Load, Ta = 25C and nominal AC input, per EIJ R9002A.

\*2. Time for the Output voltage to recover within 2% of rating for a load current change of 50~100% or 100-50% of rated Output.

\*3. From 20% - 100% for models with lor < 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 Irated (over 5% to 100% of Prated); CC Mode: from 20% to 100% of Vrated (over 20% to 100% of Prated).

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

| 2.1 INPUT CHARACTERISTICS                         |  |  |  |  |
|---|--|--|--|--|
| Input Voltage / Frequency (range)                 |  | 208VAC (180-253), 400VAC (342-440 for Vout ≥ 30V; 360-440 for Vout < 30V), 480VAC (432-528); 47-63Hz (all)   |  |  |
| 2. No. of phases                                  |  | 3-Phase (Wye or Delta) 4 wire total (3 phases and 1 Protective Earth (PE) ground)  |  |  |
| 3. Dropout Voltage                                | ٧  | 180 / (342/360) / 432  |  |  |
| 4. Input Current (180VAC/342VAC or 360VAC/432VAC) | Arms   | 10kW - 45/23/20 (Vout ≤ 600V); 40/23/20 (800V ≤ Vout ≤ 1500V) - at full rated Output power<br>15kW - 64/32/27 (Vout ≤ 600V); 55/32/27 (800V ≤ Vout ≤ 1500V) - at full rated Output power |  |  |
| 5. Inrush Current                                 | Α  | Not to exceed full rated Input current (see 2.1.4 (Input Current))   |  |  |
| 6. Power Factor, passive (typical)                |  | Vout < 600V: 0.88 (passive), 10kW/15kW (208VAC, 400VAC, 480VAC)<br>Vout > 600V: 0.90/0.93 - 10kW/15kW (208VAC), 0.89/0.92 - 10kW/15kW (400VAC), 0.84/0.88 - 10kW/15kW (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) |  |  |  |
| 10. Phase Imbalance                               | %  | ≤ 5% on three-phase Input  |  |  |

#### 2.2 POWER SUPPLY CONFIGURATION

| 1. Parallel Operation; (*6) | Up to four (4) identical units may be connected in Master/Slave Mode with Single-Wire/Two-Wire connection. In "Advanced-Parallel", the current of Master unit multiplied by number of units connected in parallel is available via digital interface and displayed on the front panel display of the Master unit. Remote Analog current monitor of Master unit is scaled to the Output current of the Master unit (only) |
|-----------------------------|--|
| 2. Series Operation (*6)    | 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

| 2.5 ENVIRONMENTAL CONDITIONS |  |
|------------------------------|--|
| Operating Temperature        | 0 to +50°C, 100% load  |
| 2. Storage Temperature       | -20 to +70°C   |
| 3. Operating Humidity        | 20 to 80% RH (non-condensing)  |
| 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             | 70dBA at lo(rated) (measured 1m from front panel) for Vout < 30V; 65dBA at lo(rated) (measured 1m from front panel) for Vout ≥ 30V   |

| 2.4 EMC   |  |
|---|--|
| 1. 208VAC Input (all models)  | CE Mark  |
| 1. ESD  | EN61000-4-2 (IEC 801-2): Air-discharge ± 8kV , Contact-discharge ± 4kV |
| 2. Fast Transients  | EN61000-4-4 (IEC 1000-4-3)   |
| 3. Surge Immunity   | EN61000-4-5 (IEC 1000-4-5)   |
| Conducted Immunity  | EN61000-4-6 (IEC 1000-4-6)   |
| 5. Radiated Immunity  | EN61000-4-3 (IEC 1000-4-3)   |
| Power Frequency Magnetic Field  | EN61000-4-8  |
| 7. Conducted Emissions  | EN55011A, FCC part 15J-A   |
| 8. Radiated Emissions   | EN55011A, FCC part 15J-A   |
| 2. 400VAC (all models) /480VAC Input (Vout ≥ 30V)                                       | CE Mark  |
| 1. ESD  | EN61000-4-2 (IEC 801-2): Air-discharge ± 8kV , Contact-discharge ± 4kV |
| 2. Fast Transients  | EN61000-4-4 (IEC 1000-4-3)   |
| 3. Surge Immunity   | EN61000-4-5 (IEC 1000-4-5)   |
| Conducted Immunity  | EN61000-4-6 (IEC 1000-4-6)   |
| 5. Radiated Immunity  | EN61000-4-3 (IEC 1000-4-3)   |
| Power Frequency Magnetic Field  | EN61000-4-8  |
| 7. Voltage Dips, Short Interruptions and Voltage Variations Immunity Test (400VAC Only) | IEC 61000-4-11   |
| 8. Conducted Emissions  | EN55011A, FCC part 15J-A   |
| 9. Radiated Emissions   | EN55011A, FCC part 15J-A   |

| 2.5 SAFETY   |  |
|--|--|
| 1.Applicable Standards   | UL/cUL 60950-1, EN60950-1 recognized, CB Scheme, CE Mark (208VAC, 400VAC and 480VAC) 7.5V ≤ Vout ≤ 400V: Output is Hazardous; LAN/IEEE/USB/Isolated Analog are SELV 400V < Vout ≤ 600V: Output is Hazardous; LAN/IEEE/USB/Isolated Analog are not SELV 600V < Vout ≤ 1500V: Output is Hazardous; LAN/IEEE/USB/Isolated Analog are SELV   |
| 2. Withstand Voltage: (208VAC/400VAC/480VAC; for 60 seconds); (*7) | Vout < 80V:         Input - Ground:         2200VDC/2900VDC/2900VDC,         Input-Hazardous         Output:         2200VDC/3100VDC,         Input - SELV:         2200VDC/2900VDC,           80V ≤ Vout ≤ 300V:         Input - Ground:         2200VDC/2900VDC,         Input - Ground:         2900VDC/2900VDC,         Input - Ground: <t< td=""></t<> |
| 3.Insulation Resistance  | 20Megohms (typical) at 500VDC, Ta = +25°C  |

#### 2.6 MECHANICAL CONSTRUCTION

| 2.0 MECHANICAL CONSTRUCTION                   |   |
|---|---|
| 1. Cooling                                    | Fan-driven with airflow from front to rear. Fan-speed control on models with Vout ≥ 30V "Zero Stackable" top and bottom. Vents on side shall not be blocked. Chassis slides or suitable rear support required. EIA rack mounting                                |
| 2. Dimensions (W x H x D)                     | Width: 429mm / 16.9"; Height: 3U - 133mm / 5.22"  Depth: 564mm / 22.2" for Vout ≤ 600V, 581mm / 22.9" for 800V ≤ Vout ≤ 1500V; excluding connectors, encoders, handles, etc.  |
| 3. Weight                                     | 43kg / 97 lbs (Vout ≤ 600V); 32kg / 70lbs (Vout > 600V)   |
| 4. AC Input connector (with Protective Cover) | M6 x 1" (25.4mm) threaded studs (L1, L2, L3 and Chassis GND) and terminal cover.  |
| 5.Output Connectors (busbar)                  | Busbars: Vout $\leq$ 25V: (two-hole busbars); 30V $\leq$ Vout $\leq$ 300V: busbars (one hole busbars)  Threaded-stud terminals: 400V $\leq$ Vout $\leq$ 600V: M6 x 0.5" (12.7mm) threaded-stud; 800V $\leq$ Vout $\leq$ 1500V: M6 x 1.0" (25.4mm) threaded-stud |
| 6.Control Connectors                          | Analog Programming: DB25, plastic connector, AMP747461-5, Female on Supply; Male on Mating connector, 747321, 25 pin Sub-D connector.   |
| 7. Mounting Method                            | Standard 19" Rack-Mount, provision for standard chassis slides. Side/Rear Support is required; Do not mount by front panel only   |
| 8. Output Ground Connection                   | M5 x 0.91" (23mm) threaded-stud   |

#### 2.7 WARRANTY

| 1. Warranty                                       | 5 years   |
|---|---|
| *6 Please contact TDK-Lambda Sales/Technical Supp | ort to discuss your Parallel or Series application in more detail |

<sup>\*7</sup> Please contact TDK-Lambda Sales/Technical Support to discuss your Parallel of Series application in more detail.

All specifications subject to change without notice.



### Genesys<sup>™</sup> 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)

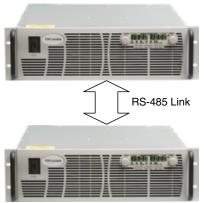
Up to two units may be connected in series to increase the Output voltage or to provide bipolar output. (Max 600V to Chassis GND for Vor < 600V; Max 1500V to Chassis GND for 600V < Vor < 1500V).

### 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.







P/N: LAN (for all models)

P/N: IEMD (for all models)

P/N: USB (for all models)

P/N: "----"

### **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 (LXI Compliant w/ Multi-Drop)

- 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

- IEEÈ 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 Vout ≤ 600V (IS510 & IS420); IS510 built-in for models where 800V ≤ Vout ≤ 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%

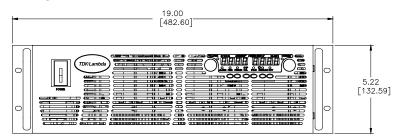
Current Programming with 4-20mA signal

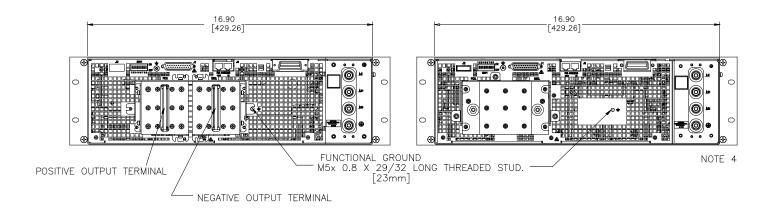
Power supply Voltage and Current Programming Accuracy: ±1.0% Power supply Voltage and Current Monitoring Accuracy: ±1.5%

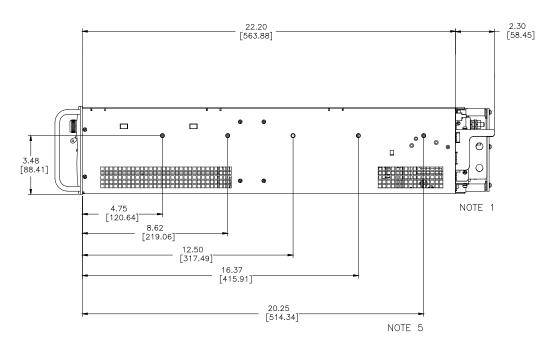
**P/N: IS510 (for Vout ≤ 600V)** 

P/N: IS420 (for all models)

## Outline Drawing: Genesys™ 10kW/15kW (7.5V to 25V - 208VAC/400VAC/480VAC)







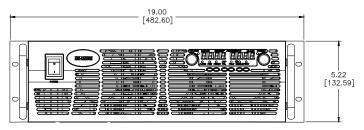
#### NOTES:

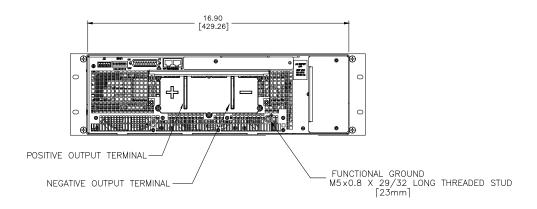
- 1. Busbars for models where Vout < 30V Output: two holes 0.42" (10.72mm) diameter.
- 2. N/A
- 3. N/A
- 4. Input Terminals: M6 x 1" (Qty = 3); Ground Terminal: M5 x 1" (Qty = 2)
- 5. Mounting for Slide Mounts (not included).

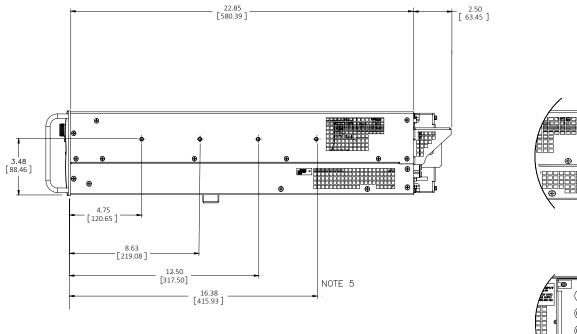
  Recommend: General Devices, Chassis Trak P/N C230-S-122; Verify requirements with slide manufacturer.

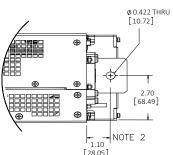
  Secure with pan head screw: M5 x 0.8-8mm long (max).

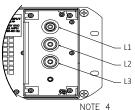
## Outline Drawing: Genesys™ 10kW/15kW (30V to 300V - 208VAC/400VAC/480VAC)











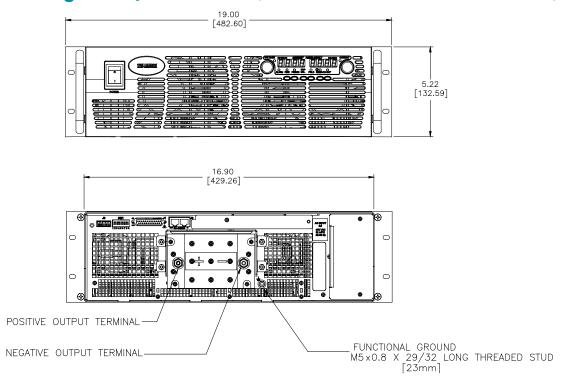
#### NOTES:

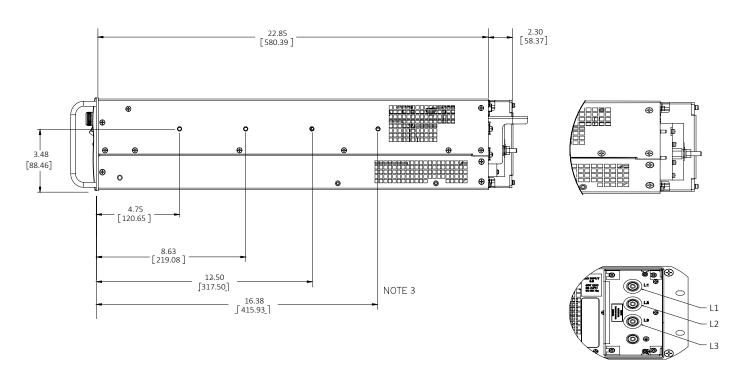
- 1 N/A
- 2. Bus bars for models 30-300V Output (10kW/15kW): one hole 0.42" (10.72mm) diameter.
- N/A
- 4. Input Terminals: M6 x 1" (Qty = 3) + Ground M5 x 1" (Qty = 2)
- 5. Mounting for Slide Mounts (not included).

  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).

## Outline Drawing: Genesys™ 10kW/15kW (400V to 600V - 208VAC/400VAC/480VAC)

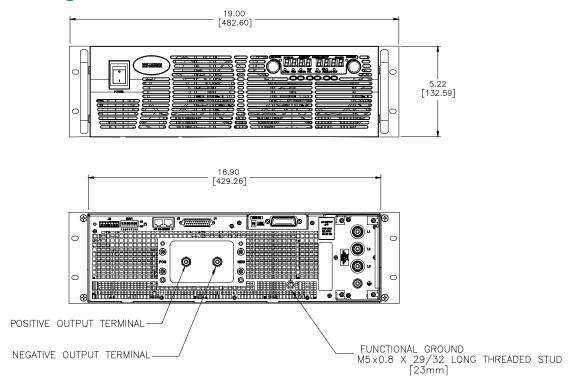


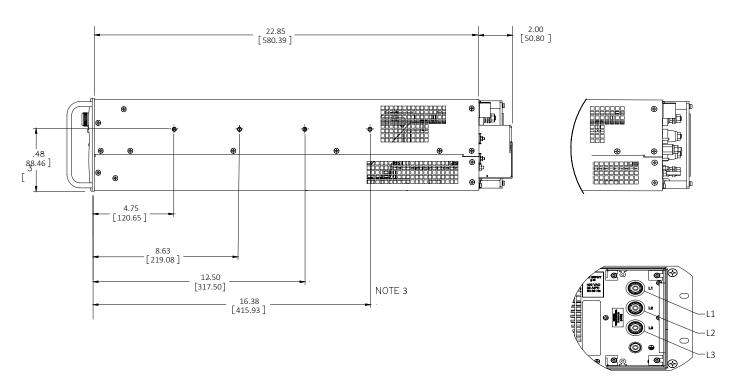


#### NOTES:

- 1. N/A
- 2. N/A
- 3. Threaded-stud terminals for models with 300V < Vout  $\leq$  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).

### **Outline Drawing:** Genesys™ 10kW/15kW (800V to 1500V - 208VAC/400VAC/480VAC)





#### NOTES:

- 1. N/A
- 2. N/A
- 3. Threaded stud terminals for models with  $800V \le Vout \le 1500V$  Output (M5 x 1").
- 4. Input Terminals M6 x 1" (Qty = 3) + Ground M5 x 1" (Qty = 2)
- 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:**

GEN 10 1000 Series Output Output Name Voltage Current (0~10V)(0~1000A)

Factory Options Option: LAN **IEMD** USB IS510 IS420

LAN

3P208

AC Input Options 3P208 (Three-Phase 208VAC) 3P400 (Three-Phase 400VAC) 3P480 (Three-Phase 480VAC)

| Model        | Output<br>Voltage<br>(Vdc) | Output<br>Current<br>(Adc) | Output<br>Power<br>(kW) |
|--------------|----------------------------|----------------------------|-------------------------|
| GEN 7.5-1000 | 0~7.5                      | 0~1000                     | 7.5                     |
| GEN 10-1000  | 0~10                       | 0~1000                     | 10                      |
| GEN 12.5-800 | 0~12.5                     | 0~800                      | 10                      |
| GEN 20-500   | 0~20                       | 0~500                      | 10                      |
| GEN 25-400   | 0~25                       | 0~400                      | 10                      |
| GEN 30-333   | 0~30                       | 0~333                      | 10                      |
| GEN 30-500   | 0~30                       | 0~500                      | 15                      |
| GEN 40-250   | 0~40                       | 0~250                      | 10                      |
| GEN 40-375   | 0~40                       | 0~375                      | 15                      |
| GEN 50-200   | 0~50                       | 0~200                      | 10                      |
| GEN 50-300   | 0~50                       | 0~300                      | 15                      |
| GEN 60-167   | 0~60                       |                            | 10                      |
| GEN 60-250   | 0~60                       | 0~250                      | 15                      |
| GEN 80-125   | 0~80                       | 0~125                      | 10                      |
| GEN 80-187.5 | 0~60                       | 0~187.5                    | 15                      |
| GEN 100-100  | 0~100                      | 0~100                      | 10                      |
| GEN 100-150  | 0~100                      | 0~150                      | 15                      |
| GEN 125-80   | 0~125                      | 0~80                       | 10                      |
| GEN 125-120  | 0~125                      | 0~120                      | 15                      |
| GEN 150-66   | 0~150                      | 0~66                       | 10                      |
| GEN 150-100  | 0~150                      | 0~100                      | 15                      |

| Model         | Output<br>Voltage<br>(Vdc) | Output<br>Current<br>(Adc) | Output<br>Power<br>(kW) |  |
|---------------|----------------------------|----------------------------|-------------------------|--|
| GEN 200-50    | 0~200                      | 0~50                       | 10                      |  |
| GEN 200-75    | 0~200                      | 0~75                       | 15                      |  |
| GEN 250-40    | 0~250                      | 0~40                       | 10                      |  |
| GEN 250-60    | 0~250                      | 0~60                       | 15                      |  |
| GEN 300-33    | 0. 200                     | 0~33                       | 10                      |  |
| GEN 300-50    | 0~300                      | 0~50                       | 15                      |  |
| GEN 400-25    | 0~400                      | 0~25                       | 10                      |  |
| GEN 400-37.5  | 0~400                      | 0~37.5                     | 15                      |  |
| GEN 500-20    | 0~500                      | 0~20                       | 10                      |  |
| GEN 500-30    | 0~500                      | 0~30                       | 15                      |  |
| GEN 600-17    | 0~600                      | 0~17                       | 10                      |  |
| GEN 600-25    | 0~600                      | 0~25                       | 15                      |  |
| *GEN 800-12.5 | 0~800                      |                            | 10                      |  |
| *GEN 800-18.8 | 0~600                      | 0~18.8                     | 15                      |  |
| *GEN 1000-10  | 0~10                       |                            | 10                      |  |
| *GEN 1000-15  | 0~1000                     | 0~15                       | 15                      |  |
| *GEN 1250-8   | -8 0~1250 0~8              |                            | 10                      |  |
| *GEN 1250-12  | 0~1250                     | 0~12                       | 15                      |  |
| *GEN 1500-6.7 | 0~1500                     | 0~6.7                      | 10                      |  |
| *GEN 1500-10  | U~ 1500                    | 0~10                       | 15                      |  |

### **Factory options**

RS-232/RS-485 Multi-Drop Interface (built-in standard) LAN Interface ( LX 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.

| Mode                   | RS-485               | RS-232                               | RS-232               |  |
|------------------------|----------------------|--------------------------------------|----------------------|--|
| PC Connector           | DB-9F                | DB-9F                                | DB-25F               |  |
| Communication Cable    | Shield Ground, L=2m  | Shield Ground, L=2m Shield Ground, L |                      |  |
| Power Supply Connector | EIA/TIA-568A (RJ-45) | EIA/TIA-568A (RJ-45)                 | EIA/TIA-568A (RJ-45) |  |
| P/N                    | GEN/485-9            | GEN/232-9                            | GEN/232-25           |  |

#### 2. Serial Link cable (optional)

Daisy-chain up to 31 Genesys™ power supplies.

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

# Genesys™ Family - Output Voltage / Output Current

| Model                  | GENH      |            | GEN-1U     |              | GE           | N-2U        | GI                     | EN 3U                                     |
|------------------------|-----------|------------|------------|--------------|--------------|-------------|------------------------|---|
| Rated Power            | 750W      | 750W       | 1.5kW      | 2.4kW        | 3.3kW        | 5.0kW       | 10kW                   | 15kW                                      |
| Voltage Range          |           |            |            | Output       | Current Rang | ge          |                        |   |
| 0~6V                   | 0~100A    | 0~100A     | 0~200A     |              |              |             |                        |   |
| 0~7.5V                 |           |            |            |              |              |             | 0~1000A                |   |
| 0~8V                   | 0~90A     | 0~90A      | 0~180A     | 0~300A       | 0~400A       | 0~600A      |                        |   |
| 0~10V                  |           |            |            | 0~240A       | 0~330A       | 0~500A      | 0~1000A                |   |
| 0~12.5V                | 0~60A     | 0~60A      | 0~120A     |              |              |             | 0~800A                 |   |
| 0~15V                  |           |            |            |              | 0~220A       |             |                        |   |
| 0~16V                  |           |            |            | 0~150A       |              | 0~310A      |                        |   |
| 0~20V                  | 0~38A     | 0~38A      | 0~76A      | 0~120A       | 0~165A       | 0~250A      | 0~500A                 |   |
| 0~25V                  |           |            |            |              |              |             | 0~400A                 |   |
| 0~30V (15kW) - NEW !   | 0~25A     | 0~25A      | 0~50A      | 0~80A        | 0~110A       | 0~170A      | 0~333A                 | 0~500A                                    |
| 0~40V (15kW) - NEW !   | 0~19A     | 0~19A      | 0~38A      | 0~60A        | 0~85A        | 0~125A      | 0~250A                 | 0~375A                                    |
| 0~50V (15kW) - NEW !   |           |            | 0~30A      |              |              |             | 0~200A                 | 0~300A                                    |
| 0~60V                  | 0~12.5    | 0~12.5A    | 0~25A      | 0~40A        | 0~55A        | 0~85A       | 0~167A                 | 0~250A                                    |
| 0~80V                  | 0~9.5A    | 0~9.5A     | 0~19A      | 0~30A        | 0~42A        | 0~65A       | 0~125A                 | 0~187.5A                                  |
| 0~100V                 | 0~7.5A    | 0~7.5A     | 0~15A      | 0~24A        | 0~33A        | 0~50A       | 0~100A                 | 0~150A                                    |
| 0~125V                 |           |            |            |              |              |             | 0~80A                  | 0~120A                                    |
| 0~150V                 | 0~5A      | 0~5A       | 0~10A      | 0~16A        | 0~22A        | 0~34A       | 0~66A                  | 0~100A                                    |
| 0~200V - NEW !         |           |            |            |              | 0~16.5A      | 0~25A       | 0~50A                  | 0~75A                                     |
| 0~250V                 |           |            |            |              |              |             | 0~40A                  | 0~60A                                     |
| 0~300V                 | 0~2.5A    | 0~2.5A     | 0~5A       | 0~8A         | 0~11A        | 0~17A       | 0~33A                  | 0~50A                                     |
| 0~400V (5.0kW) - NEW ! |           |            |            |              |              | 0~12.5A     | 0~25A                  | 0~37.5A                                   |
| 0~500V (5.0kW) - NEW ! |           |            |            |              |              | 0~10A       | 0~20A                  | 0~30A                                     |
| 0~600V                 | 0~1.3A    | 0~1.3A     | 0~2.6A     | 0~4A         | 0~5.5A       | 0~8.5A      | 0~17A                  | 0~25A                                     |
| 0~800V - NEW !         |           |            |            |              |              |             | 0~12.5A <sup>(5)</sup> | 0~18.8A (5)                               |
| 0~1000V - NEW !        |           |            |            |              |              |             | 0~10A <sup>(5)</sup>   | 0~15A (5)                                 |
| 0~1250V - NEW !        |           |            |            |              |              |             | 0~8A <sup>(5)</sup>    | 0~12A (5)                                 |
| 0~1500V - NEW !        |           |            |            |              |              |             | 0~6.7A <sup>(5)</sup>  | 0~10A (5)                                 |
| Weight (kg/lb)         | 4.5 / 9.9 | 7.0 / 15.0 | 8.5 / 18.0 | 10 .0 / 22.0 | 13.0 / 29.0  | 16.0 / 35.0 | 43.0 / 97.0            | 43.0 / 97.0<br>32.0 / 70.0 <sup>(6)</sup> |

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

### **AC Inputs**

| 85-265Vac, 1Ø | • (1) | • (1) | • (1) |      |                          |                                 |            |            |
|---------------|-------|-------|-------|------|--------------------------|---------------------------------|------------|------------|
| 230Vac, 1Ø    |       |       |       | • (1 | • (1)                    |                                 |            |            |
| 208Vac, 3Ø    |       |       |       | • (1 | • (1)                    | • (1)                           | • (3)      | • (3)      |
| 400Vac, 3Ø    |       |       |       |      | • (1)                    | • (1)                           | • (3)      | • (3)      |
| 480Vac, 3Ø    |       |       |       |      | • <sup>(2)</sup> - NEW ! | • <sup>(2)</sup> - <b>NEW</b> ! | • (3), (4) | • (3), (4) |

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

### Options (All Models)

| ""    | Standard RS-232/RS-485 Master with RS-485 Multi-Drop capability installed                 |
|-------|---|
| LAN   | LXI Compliant LAN Interface (Class C) with RS-485 Multi-Drop capability installed         |
| IEMD  | IEEE Master (IEEE 488.2 & SCPI compliant) with RS-485 Multi-Drop capability installed     |
| USB   | USB (2.0) Master with RS-485 Multi-Drop capability installed                              |
| IS510 | Isolated Analog Program/Monitor (0-5V or 0-10V, user-selectable) for 6V-600V models; *(5) |
| IS420 | Isolated Analog Program/Monitor (4-20mA)  |

All "Options" are factory installed and limited to one "option" per power supply \*(5) Isolated 5V/10V (IS510) Interface is bulit-in standard for 800V-1500V models All specifications are subject to change without notice