

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2019-05-09 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Listing
CCN:	QQGQ, QQGQ7 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Complementary CCN:	N/A
Product:	AC-DC Power Supply
Model:	<p>1. GENESYS+5000W series</p> <p>1a) Gxxx-yyy-z-v-uuuuuu-w (xxx=010-600; yyy=8.5-500; z="GPIB (IEEE)", "AnyBus", Blank; v="3P200", "3P208", "3P400", "3P480"; u=A-Z, 0-9, Blank; w="CO", Blank: Ordinary unit)</p> <p>1b) GBxxx-yyy-z-v-uuuuuu-w (xxx=010-600; yyy=8.5-500; z="GPIB (IEEE)", "AnyBus", Blank; v="3P200", "3P208", "3P400", "3P480"; u=A-Z, 0-9, Blank; w="CO", Blank: Blank unit)</p> <p>1c) GSSxxx-yyy-z-v-uuuuuu-w (xxx=010-600; yyy=8.5-500; z="GPIB (IEEE)", "AnyBus", Blank; v="3P200", "3P208", "3P400", "3P480"; u=A-Z, 0-9, Blank; w="CO", Blank: Booster unit)</p> <p>2. GSP/GBSP 10kW series</p> <p>2a) Consist of: Ordinary unit + Booster unit GSPxxx-yyy-z-v-uuuuuu-w (xxx=010-600; yyy=17-1000; z="GPIB (IEEE)", "AnyBus", Blank; v="3P200", "3P208", "3P400", "3P480"; u=A-Z, 0-9, Blank; w="CO", Blank)</p> <p>2b) Consist of: Blank unit + Booster unit GBSPxxx-yyy-z-v-uuuuuu-w (xxx=010-600; yyy=17-1000; z="GPIB (IEEE)", "AnyBus", Blank; v="3P200", "3P208", "3P400", "3P480"; u=A-Z, 0-9, Blank; w="CO", Blank)</p> <p>3. GSP/GBSP 15KW series</p> <p>3a) Consist of: Ordinary unit + Two Booster units GSPxxx-yyy-z-v-uuuuuu-w (xxx=010-600; yyy=25.5-1500; z="GPIB (IEEE)", "AnyBus", Blank; v="3P200", "3P208", "3P400", "3P480"; u=A-Z, 0-9, Blank; w="CO", Blank)</p> <p>3b) Consist of: Blank unit + Two Booster units GBSPxxx-yyy-z-v-uuuuuu-w (xxx=010-600; yyy=25.5-1500; z="GPIB (IEEE)", "AnyBus", Blank; v="3P200", "3P208", "3P400", "3P480"; u=A-Z, 0-9, Blank; w="CO", Blank)</p> <p>4. GENESYS+ 1700W series</p> <p>4a) Gxxx-yyy-z-uuuuuu-w (xxx=010-600; yyy=2.8-170; z="GPIB (IEEE)",</p>

“AnyBus”, Blank; u=A-Z, 0-9, Blank;)

w=“CO”, Blank: Ordinary unit.

4b) GBxxx-yyy-z-uuuuuu-w (xxx=010-600; yyy=2.8-170; z=“GPIB (IEEE)”, “AnyBus”, Blank; u=A-Z, 0-9, Blank; w=“CO”, Blank: Blank unit.)

5. GENESYS+ GH1500W series

5a) GHxxx-yyy-z-uuuuuu-w (xxx=010-600; yyy=2.6-150; z=“GPIB (IEEE)”, “AnyBus”, Blank; u=A-Z, 0-9, Blank; w=“CO”, Blank; Ordinary unit.

5b) GHBxxx-yyy-z-uuuuuu-w (xxx=010-600; yyy=2.6-150; z=“GPIB (IEEE)”, “AnyBus”, Blank; u=A-Z, 0-9, Blank; w=“CO”, Blank; Blank unit.

6. GENESYS+ 2700W series

6a) Gxxx-yyy-z-v-uuuuuu-w (xxx=010-600; yyy=4.5-265; z=“GPIB (IEEE)”, “AnyBus”, Blank; v=“1P200” or “1P208” or “1P230”, “3P200” or “3P208”, “3P400”, “3P480”; u=A-Z, 0-9, Blank; w=“CO”, Blank; Ordinary unit

6b) GBxxx-yyy-z-v-uuuuuu-w (xxx=010-600; yyy=4.5-265; z=“GPIB (IEEE)”, “AnyBus”, Blank; v=“1P200” or “1P208” or “1P230”, “3P200” or “3P208”, “3P400”, “3P480”; u=A-Z, 0-9, Blank; w=“CO”, Blank; Blank unit

7. GENESYS+ 3400W series

7a) Gxxx-yyy-z-v-uuuuuu-w (xxx=010-600; yyy=5.6-340; z=“GPIB (IEEE)”, “AnyBus”, Blank; v=“1P200” or “1P208” or “1P230”, “3P200” or “3P208”, “3P400”, “3P480”; u=A-Z, 0-9, Blank; w=“CO”, Blank; Ordinary unit

7b) GBxxx-yyy-z-v-uuuuuu-w (xxx=010-600; yyy=5.6-340; z=“GPIB (IEEE)”, “AnyBus”, Blank; v=“1P200” or “1P208” or “1P230”, “3P200” or “3P208”, “3P400”, “3P480”; u=A-Z, 0-9, Blank; w=“CO”, Blank; Blank unit

Note: see “General product information” and “Definition of variables” in Model Differences section for details

Rating:

Input:

Option 1: AC 190-240V; 3W+PE, 50/60Hz.

1a), 1b), 1c): 18.5A max.

2a), 2b): 37A max.

3a), 3b): 55.5A max.

6a), 6b): 10A max.

7a), 7b): 12.5A max.

Option 2: AC 380-415V; 3W+PE, 50/60Hz.

1a), 1b), 1c): 9.2A max.

2a), 2b): 18.4A max.

3a), 3b): 27.6A max.

6a), 6b): 5.5A max.

7a), 7b): 6.5A max.

Option 3: AC 380-480V; 3W+PE, 50/60Hz.

1a), 1b), 1c): 9.2A max.

2a), 2b): 18.4A max.

3a), 3b): 27.6A max.

6a), 6b): 5.5A max.

7a), 7b): 6.5A max.

Option 4: AC 100-240V; single phase, 50/60Hz.

4a), 4b): 20A max.

5a), 5b): 18.5A max.

Option 5: AC 190-240V; single phase, 50/60Hz.

6a), 6b): 16.5A max.

7a), 7b): 21A max.

Output:

1a), 1b), 1c): DC 0-10V/500A to DC 0-600V/8.5A, 5200 Watt max.

2a), 2b): DC 0-10V/1000A to DC 0-600V/17A, 10400 Watt max.

3a), 3b): DC 0-10V/1500A to DC 0-600V/25.5A, 15600 Watt max.

4a), 4b): DC 0-10V/170A to DC 0-600V/2.8A, 1700 Watt max.

5a), 5b): DC 0-10V/150A to DC 0-600V/2.6A, 1560 Watt max.

6a), 6b): DC 0-10V/265A to DC 0-600V/4.5A, 2720 Watt max.

7a), 7b): DC 0-10V/340A to DC 0-600V/5.6A, 3450 Watt max.

Applicant Name and Address:

TDK-LAMBDA LTD
56 HAHAROSHET STREET
P.O.B. 500 KARMIEL INDUSTRIAL ZONE
2161401 KARMIEL ISRAEL

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Report Reference #

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Prepared By: Luba Joseph / Project Handler

Reviewed By: Davis.J.Snook / Reviewer

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

- i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
- ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
- iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

The GENESYS+5000W series is a family of power supplies having rated output from 0-10VDC/0-500A up to 0-600VDC/0-8.5A with total output power 5200 Watt maximum.

The GENESYS+ 1700W, 5000W series is divided into three types of front panels and operation modes:

- a) Ordinary (full panel) units come with display, on/off switch and may be operated independently or in parallel with another Ordinary, Blank or Booster unit by manual or remote control mode.
- b) Blank units come without display, with on/off switch, and may be operated independently or in parallel with another Blank or Booster unit by remote control mode only.

For GENESYS+ 5000W series only:

- c) Booster units come without on/off switch, display and are operated by master unit only (Ordinary or Blank).

The GSP/GBSP 10kW units consists of two single GENESYS+5000W units, in combination as described above in section " Model/Type reference", connected by the input and output in parallel.

The GSP/GBSP 10kW units is factory assembled only.

The GSP/GBSP 15kW units consists of three single GENESYS+5000W units, in combination as described above in section " Model/Type reference", connected by the input and output in parallel.

The GSP/GBSP 15kW units is factory assembled only

The GENESYS+ 1700W series based on GENESYS+ 5000W. Since the output power of the GENESYS+1700W units is lower than the GENESYS+ 5000W, two DC/DC boards and interconnects board removed because they are no longer needed. The GENESYS+ 1700W series has the same mechanical and electronic construction as the GENESYS+ 5000W, with the exception of input and PFC boards. Power supplies having rated output from 0-10VDC/0-170A up to 0-600VDC/0-2.8A with total output power 1700 Watt maximum.

The GENESYS+ GH1500W series is based on GENESYS+ 1700W. The GENESYS+ GH1500W uses the same modules used in GENESYS+1700W except for the output filter boards. The GENESYS+ GH1500W has a different mechanical construction. The power supplies having rated output from 0-10VDC/0-150A up to 0-600VDC/0-2.6A with total output power 1560 Watt maximum.

The GENESYS+ 2700W and 3400W series are based on GENESYS+ 5000W. Since the output power of the GENESYS+ 2700W or 3400W units are lower than the GENESYS+ 5000W, one DC/DC board removed because it is no longer needed. The GENESYS+ 2700W and 3400W series have the same mechanical and electronic construction as the GENESYS+ 5000W, with the exception of additional one phase input and PFC boards but they are same as GENESYS+ 1700W series. The GENESYS+ 2700W and 3400W series having rated output from 0-10VDC/0-265A up to 0-600VDC/0-4.5A and 0-10VDC/0-340A up to 0-600VDC/0-5.5A respectively with total output power 2720 and 3450 Watt maximum respectively.

For GENESYS+ series:

The following parts are factory installed (or may be installed - optional parts) inside enclosures:

Common parts:

Input board IA764 for input 190-240V or IA765 for inputs 380-415V and 380-480V, that includes:

- Input SELV module IA814 for input 190-240V or IA850 for inputs 380-415V and 380-480V;
- Input control module IA815 for input 190-240V or IA849 for inputs 380-415V and 380-480V;
- Input STBY module IA818 for inputs 380-415V and 380-480V.

For GENESYS+ GH1500W/1700W only:

- Input board IA763 for input 100-240V

For GENESYS+ 2700W/3400W only:

- Input board IA763 for input 190-240V

Power factor control board (PFC) IA766 for input 190-240V- 3Ph, IA767 for inputs 380-415V- 3Ph and 380-480V- 3Ph

For GENESYS+ GH1500W/1700W only: Power factor control board (PFC) IA833 for input 100-240V- 1Ph.

For GENESYS+ 2700W/3400W only: Power factor control board (PFC) IA833 for input 190-240V - 1Ph.

GENESYS+GH1500W/1700W have one DC/DC converter board.

GENESYS+2700W/3400W have two DC/DC converter board connected in parallel.

GENESYS+ 5000W have three DC/DC converter boards connected in parallel,

IA768 for output 10V-30V, IA785 for output 40V-100V, IA769 for output 150-300V or IA851 for output 600V, each board includes (except GENESYS+GH1500W/1700W):

- DC/DC slave module IA771.

Control board IA806.

Output filter board-IA787 for output 10-100V, IA809 for output 150-300V or IA788 for output 400-600V.

For GENESYS+ GH1500W: IA791 for output 10-100V, IA873 for output 150-200V, IA792 for output 300-600V.

Interface board-IA770.

Connect board-IA789.

Display-IA772 (GENESYS+ series)

Display-IA871 (GENESYS+ GH1500W only)

Blank Display-IA854 or IA884 or IA860 or IA910 (GENESYS+ series)

Booster-IA853 (GENESYS+ series)

Air filter kit-IA857:

For all models except 10V 3.4kW~15kW: 0~40°C, 100% load.

For 10V 3.4kW~15kW models: 0~30°C, 100% load, For 30°C ≤Ta≤40°C, derate 5A/1°C.

Operating: Maximum 10000ft (3000m).

For all models except 10V 3.4kW~15kW: Derate 1°C/100m, or 2% Load/100m above 2000m.

For 10V 3.4kW~15kW models: Derate 2°C/100m, or 2% Load/100m above 2000m.

Optional parts:

GPIB (IEEE) board IA834.

Anybus board IA790.

Model Differences

Definition of variable(s): Model configuration code

GENESYS+ GH1500W series

GHxxx-yyy-z-uuuuuu-w - ordinary unit

GHBxxx-yyy-z-uuuuuu-w - blank unit

GENESYS+1700W series:

Gxxx-yyy-z-v-uuuuuu-w - ordinary unit

GBxxx-yyy-z-v-uuuuuu-w - blank unit

GENESYS+2700W/3400W series

Gxxx-yyy-z-v-uuuuuu-w - ordinary unit

GBxxx-yyy-z-v-uuuuuu-w - blank unit

GENESYS+5000W series

Gxxx-yyy-z-v-uuuuuu-w - ordinary unit

GBxxx-yyy-z-v-uuuuuu-w - blank unit

GSSxxx-yyy-z-v-uuuuuu-w - booster unit

GSP/GBSP 10kW series:

GSPxxx-yyy-z-v-uuuuuu-w Consist of: Ordinary unit + Booster unit

GBSPxxx-yyy-z-v-uuuuuu-w Consist of: Blank unit + Booster unit

GSP/GBSP 15kW series:

GSPxxx-yyy-z-v-uuuuuu-w Consist of: Ordinary unit + Two Booster units

GBSPxxx-yyy-z-v-uuuuuu-w Consist of: Blank unit + Two Booster units

for xxx, yyy, z, v, uuuuuu, w values see Enclosure: Miscellaneous-01

Test Item Particulars	
Equipment mobility	movable (for GENESYS+ GH1500W/1700W/2700W/3400W/5000W), stationary (for GSP/GBSP 10kW 15kW)
Connection to the mains	pluggable B, permanent connection; pluggable A (for GENESYS+ GH1500W/1700W/2700W/3400W); non-detachable power supply cord
Operating condition	continuous
Access location	operator accessible
Over voltage category (OVC)	OVC II
Mains supply tolerance (%) or absolute mains supply values	+10%, -10%
Tested for IT power systems	No
IT testing, phase-phase voltage (V)	-
Class of equipment	Class I (earthed)
Considered current rating of protective device as part of the building installation (A)	30A (for 1.7kW up to 3.4kW 1-Phase); 30A (for 2.7kW up to 5kW 3-Phase 208Vac); 20A (for 2.7kW up to 5kW 3-Phase 400/480Vac); 60A (for 10kW 3-Phase 208Vac); 40A (for 10kW 3-Phase 400/480Vac); 90A (for 15kW 3-Phase 208Vac); 60A (for 15kW 3-Phase 400/480Vac.)
Pollution degree (PD)	PD 2
IP protection class	IP 20
Altitude of operation (m)	Less than 3000 m
Altitude of test laboratory (m)	Less than 2000 m
Mass of equipment (kg)	3.5 max (GENESYS+ GH1500W series), 5 max (Genesys+1700W series), 7 max (GENESYS+ 2700W/3400W series), 7.5 max ((GENESYS+5000W series); 16 max (GSP/GBSP 10kW series); 24 max (GSP/GBSP 15kW series)
Technical Considerations	

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 50°C with the following deratings; Units with output 0-10VDC/0-500A: up to Tma=40°C, or 0-10VDC/0-450A up to Tma=50 °C; All units which include GPIB (IEEE) module are limited up to Tma=40°C. Output current derating 2%/100m or Tma derating 1°C /100m above 2000m. Non operating: 40000ft (12000m). , For GENESYS+ 5000W only: Units with output 0-10VDC/0-500A: up to Tma=40°C, or 0-10VDC/0- 450A up to Tma=50 °C; For 10V model derate 5A/1°C above 40°C. For 10V model Tma derating 2°C /100m, , For 10V model only: Max. output current for using GPIB (IEEE) is 400A up to 40 °C and 450A up to 30 °C., For GSP/GBSP+ 10KW only: Units with output 0-10VDC/0-1000A: up to Tma=40°C, or 0-10VDC/0-900A up to Tma=50 °C; For 10V model derate 10A/1°C above 40°C. For 10V model Tma derating 2°C /100m,, For 10V model only: Max. output current for using GPIB (IEEE) is 800A up to 40 °C and 900A up to 30 °C. , For GSP/GBSP+ 15KW only: Units with output 0-10VDC/0-1500A: up to Tma=40°C, or 0-10VDC/0-1350A up to Tma=50 °C; For 10V model derate 15A/1°C above 40°C. For 10V model Tma derating 2°C /100m,, For 10V model only: Max. output current for using GPIB (IEEE) is 1200A up to 40 °C and 1350A up to 30 °C.
- The means of connection to the mains supply is : Pluggable B or, Permanently connected (field wired)
- The product is intended for use on the following power systems : TN, TT
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS) : Data ports
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual
- Units with output rated up to (but not including) 60VDC are considered to be SELV output units.
- Units with output rated 60VDC and higher are considered to be Secondary Hazardous voltage output units.
- The power I/O connectors are suitable for factory and field wiring.
- The units are suitable for maximum operational altitude up to 3000m with the following derating:
- Units with output 0-10VDC/0-500A: temperature derating is 2°C/100m or output current derating is 2%/100m (above 2000 m)
- The Discharge of capacitors in equipment (cl. 2.1.1.7) has not deemed necessary on models GSP/GBSP 10kW and GSP/GBSP 15kW, because: All models GENESYS+5000W has an internal discharge circuit (discharge resistor in parallel to each capacitor,
- In the case of parallel connection of two or three inputs, you also made a parallel connection of the capacitor with its discharge resistor of each unit to another capacitor with its discharge resistor.
- Therefore, when two or more pairs of capacitors are connected in parallel with its discharge resistor, which is connected in parallel, the discharge time remains unchanged.
- The GSP/GBSP 10kW and GSP/GBSP 15kW models consist of a complete and separately approved GENESYS+5000W model, which are mechanically connected together, factory assembly only. In detail, GSP/GBSP 10kW is composed by two GENESYS+5000W and GSP/GBSP 15kW is composed by three GENESYS+5000W
- LPS (according to cl.2.5) test on J6/J7 ports of GSP/GBSP 10kW and GSP/GBSP 15kW have not been deemed necessary because: These ports are inter connection between units factory assembled, and not intended for customers use.
- In addition, according LPS measurements (see attached test sheet below), which was made for the GENESYS+5000W model the open-circuit voltage is 5V and short-circuit current of is 2 A.
- Therefore connection of three units (the worst case) the power does not exceed 100VA
- $5V * 3 \text{ units} * 2 \text{ Amp} = 30VA$
- Heating test (according to cl.4.5) on GSP/GBSP 10kW and GSP/GBSP 15kW has not been deemed necessary because: GSP/GBSP 10kW and GSP/GBSP 15kW are consist of 2 or 3 GENESYS+5000W units connected in parallel.
- Each unit has its own independent cooling system (Fans, Inlet and outlet openings, chassis), this is why the temperature of each unit doesn't influenced by the other units.
- The temperature of each units in GSP/GBSP 10kW and GSP/GBSP 15kW is based on the measurements of GENESYS+5000W This is why an additional test is not required.
- GSP/GBSP 10kW and GSP/GBSP 15kW consist of separately approved GENESYS+5000W models without any construction or design changes. No changes were made for clearance and creepage distance, as well as components and electronic circuits are remained the same in comparison with GENESYS+5000W.
- So based on that the additional test for Clearances, Creepage and Abnormal operating and fault Conditions was not necessary.

Additional Information

Component's description (see also Enclosure: Diagram-01):

1. Input boards

The input board is constructed of UL Recognized input connector, EMI filter, inrush current protection, diode rectifier, SELV BIAS, FAN BIAS and Main BIAS.

There are three types of input boards:

- 3 phase, for units rated 190-240VAC
- 3 phase, for units rated 380-480VAC
- 1 phase, for units rated 190-240VAC
- 1 phase, for units rated 100-240VAC

The input board provides the DC voltage for the PFC (Power Factor Control) board.

2. Power factor control (PFC) board

The PFC board includes a Power Factor Correction circuit

There are three types of PFC board:

- For 3 phase units rated 190-240VAC
- For 3 phase units rated 380-480VAC
- For 1 phase, for units rated 100-240VAC

The PFC board provides 380VDC voltage for the DC/DC boards and internal BIASs.

3. For GENESYS+ 5000W Connection board

Distribute power from PFC to DC/DC boards

4. DC/DC boards

The DC/DC board includes a DC/DC converter

There are four types of DC/DC boards:

- For units having output voltage from 10Vdc up to (and including) 30Vdc
- For units having output voltage from 40Vdc up to (and including) 100Vdc
- For units having output voltage 150Vdc up to (and including) 300Vdc
- For units having output voltage 400Vdc up to (and including) 600Vdc

Each GENESYS+ 5000W has three DC / DC boards that are assembled in parallel to provide a total output power of up to 5200 watts, for GENESYS+ GH1500W/1700W there is one DC / DC board with a maximum output of 1560/1700 watts respectively. GENESYS+ 2700W/3400W there are two DC / DC boards with a maximum output of 2720/3450 watts respectively.

5. Control board

The control board is the same for all models.

The control board includes the control and adjusts circuits for maintenance of functioning of power supply.

6. Output filter board

There are six types of the output filter boards:

- For units having an output voltage from 10Vdc up to (and including) 100Vdc
- For units having an output voltage from 150Vdc up to (and including) 300Vdc
- For units having an output voltage from 400Vdc up to (and including) 600Vdc
- For units having an output voltage from 10Vdc up to (and including) 100Vdc (GENESYS+ GH1500W only)
- For units having an output voltage from 150Vdc up to (and including) 200Vdc (GENESYS+ GH1500W only)
- For units having an output voltage from 300Vdc up to (and including) 600Vdc (GENESYS+ GH1500W only)

The output filter board 10-100Vdc has bus-bar type of output terminals.

The output filter boards 150-200Vdc, 150-300Vdc, 300-600Vdc and 400-600Vdc has a UL Recognized connector intended for factory and field wiring.

7. Display assembly

There are 5 types of display assemblies.
 - Full panel assembly - includes LCD display, silicon buttons, knobs, encoders, on/off switch.
 - Blank panel assembly - includes litepipes, on/off switch.
 - Booster panel assembly - no additional parts assembly
 - Full panel assembly(GENESYS+ GH1500W only) - includes LCD display, silicon buttons, knobs, encoders, on/off switch.
 - Blank panel assembly(GENESYS+ GH1500W only) - includes litepipes, on/off switch.



8.Interface board

Intended to provide external communications (RS232, USB, LAN, remote programming, paralleling, etc.).

Additional Standards

The product fulfills the requirements of: -

Markings and Instructions

Clause Title	Marking or Instruction Details
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Power rating - Company identification	Listees or Recognized companys name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.
Warning to service personnel	"CAUTION: Double pole/neutral fusing"
Fuses - Non-operator access/soldered-in fuses	Unambiguous reference to service documentation for instructions for replacement of fuses replaceable only by service personnel
Terminal for main protective earthing	Provided adjacent to the main protective earthing terminal (60417-5019) 
Symbols - On/Off switch	All other controls to be marked with symbol for "ON" (60417-2-IEC-5007) and  symbol for "OFF" (60417-2-IEC-5008)
Disconnect device - Permanently connected equipment	Statement indicating that a readily accessible disconnect device shall be incorporated in the building installation wiring. (Instruction)

Disconnect device - Pluggable equipment	Statement indicating that the socket-outlet shall be installed near the equipment and shall be easily accessible. (Instruction)
Short Circuit/Overcurrent protection for Pluggable B or permanently connected equipment	Installation Instructions indicate Listed circuit breaker or branch rated fuse, rating, number of poles, special characteristics.
Special Instructions to UL Representative 1.7.2 - Disconnect device - Only one of 2 provided requirements is needed depending on the connection to the mains. 1.7.7.2 - No Neutral conductor terminal in three-phase units, Neutral terminal present only in GENESYS+1700W models.	

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
All models	-	-	Primary to Secondary	3000	4242	1
BD1.2	Earthing Continuity Test Exemptions – This test is not required for the following models:					
	-- (no exemptions)					
BD1.3	Electric Strength Test Exemptions – This test is not required for the following models:					
	-- (no exemptions)					
BD1.4	Electric Strength Test Component Exemptions – The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test:					
	N/A					

BE1.0	Sample and Test Specifics for Follow-Up Tests at UL				
Model	Component	Material	Test	Sample (s)	Test Specifics
N/A	-	-	-	-	-