GSP 15kW/10kW

RELIABILITY

DATA

DWG: IA852-79-01		
APPD	CHK	DWG
26/11/18	26/11/18	MICHAEL G. 26.11.2018

TDK-LAMBDA

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The above data is typical value. As all units have nearly the same characteristics, the data to be considered as ability value.

M.T.B.F.

Calculation based on parts stress reliability projection of Telcordia (Bellcore)
"Reliability Prediction Procedure for Electronic Equipment" Document number TR-322,Issue5)
Individual failure λss is calculated from electrical stress and temperature rise of each device.

$$MTBF = \frac{1}{\lambda_{equip}} = \frac{1}{\pi_E \sum_{i=1}^{m} N_i \cdot \lambda_{SSi}} \times 10^9 \quad \text{(hours)}$$

$$\lambda_{SSi} = \lambda_{Gi} \cdot \pi_{Qi} \cdot \pi_{Si} \cdot \pi_{Ti}$$

λ equip	:	Total Equipment failure rate (FITs = Failures in10^9 hours)
λ Gi	:	Generic failure rate for the *i* th device
π Qi	:	Quality factor for the *i* th device
π Si	:	Stress factor for the *i* th device
π Ti	:	Temperature factor for the *i* th device
m	:	Number of different device types
Ni	:	Quantity of *i* th device type
π E	:	Equipment environmental factor

Conditions:

Ta=25°C
Gf - Ground,Fixed,Uncontrolled

For GSP15kW: **M.T.B.F. = 63069 (HOURS)**

For GSP10kW: **M.T.B.F. = 94603 (HOURS)**

6.VIBRATION TEST

MODEL: G600-25.5 3P400

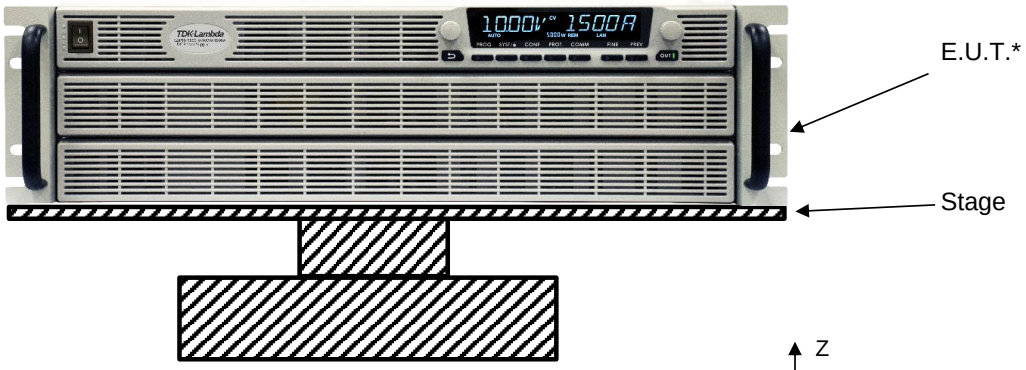
(1) Vibration test class

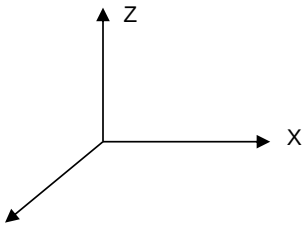
Frequency variable endurance test

(2) Equipment used

Name	Manufaturer	Model
Vibration Test System (Amplifier *SP +93-011I1, Remote Control Panel *SP 9 3-00+I1, Vibrator *SP +93-005I1, Slip Table, Driver Bar, Pomp, Fan, Head Expander)	Ling Dynamic Systems	V875
Precision Barometer, +70 - 1050 hPa	LUFFT Mess- und Regeltechnik GmbH	DKD-K-26701
Temp. & Humidity Meter, (-50 - *70) deg, (20 - 99)% RH	Mad Electronics	HTC-1
APEX SL VIBRATION CONTROLLER	Unholtz-Dickie	APEX SL
Isotron Accelerometer 101.2 mVlg	Dytran Instruments Inc.	3256A2
Isotron Accelerometer 101.7 mVlg	Dytran Instruments Inc.	3049E3

(3) Testing method





Test condition:

Random frequency 10Hz~500Hz
Acceleration X: 0.24
Y: 0.89
Z: 1.25
Direction X,Y,Z Y
Test time 1H.each

*E.U.T. is fixed to vibrator surface by mounting straps

(4)Test Result (OK) NG

Vin=400Vac; Iout=500A

Check item	Vout (V)	Ripple(mVp-p)	E.U.T.state
Directions \Initial			
Before test	600.108	190	O.K.
X	600.146	200	O.K.
Y	600.155	190	O.K.
Z	600.975	200	O.K.