GWS500

TEST DATA

IEC61000 SERIES

DWG. No. PA590-58-01		
APPD	CHK	DWG
1/8/11		

TDK-Lambda

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※ Test results are typical data. Nevertheless the following results are considered to be actual capability data because all units have nearly the same characteristics.

1. Electrostatic Discharge Immunity Test (IEC61000-4-2)

MODEL : GWS500-12

(1) Equipment Used

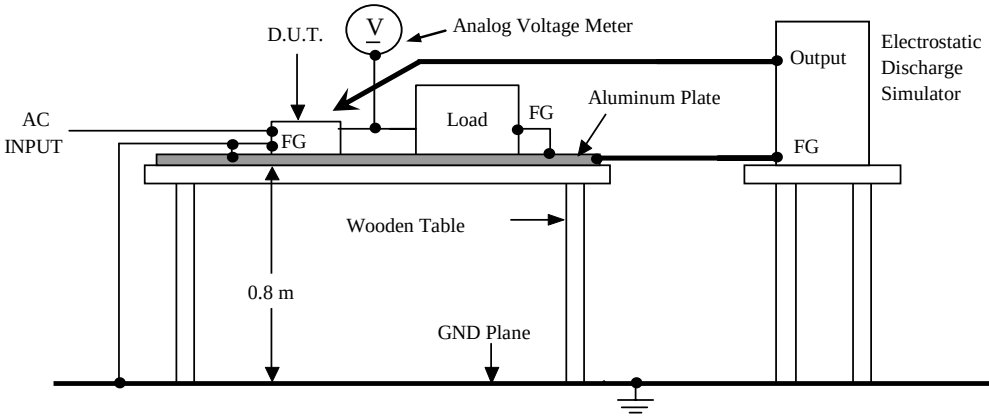
Electrostatic Discharge Simulator	:	NSG435	(SCHAFFNER)		
Discharge Resistance	:	330Ω	Capacitor	:	150pF

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Polarity	:	+, -
Number of Tests	:	10 times	Ambient Temperature	:	25°C
Discharge Interval	:	>1 Second			

(3) Test Method and Device Test Point

Contact Discharge	:	FG terminal, Chassis
Air Discharge	:	Input terminal, Output terminal



(4) Acceptable Conditions

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage to be within regulation specification after the test.
3. Along with 1 and 2, no discharge of fire or smoke, as well as no output failure.

(5) Test Result

Contact Discharge (kV)	GWS500-12	Air Discharge (kV)	GWS500-12
2	PASS	4	PASS
4	PASS	8	PASS

2. Radiated Radio-Frequency Electromagnetic Field Immunity Test (IEC6100-4-3)

MODEL : GWS500-12

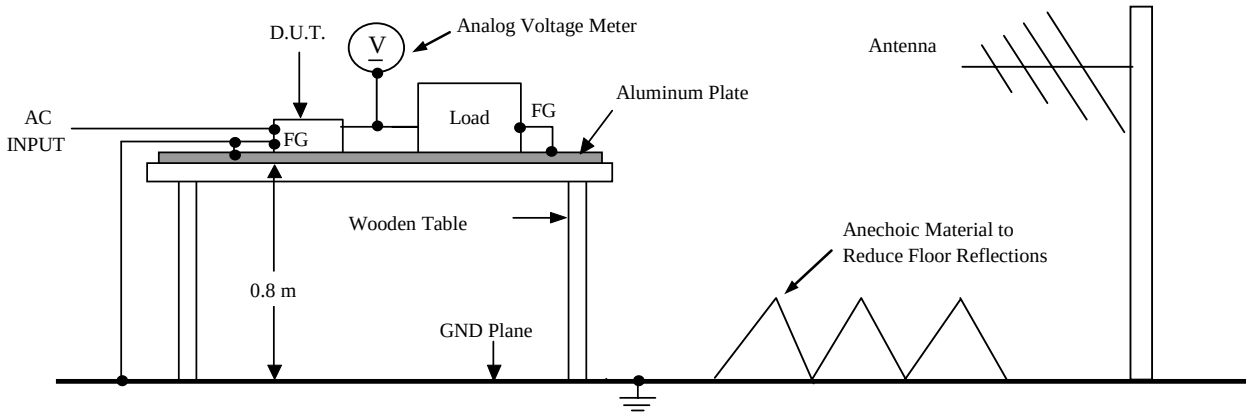
(1) Equipment Used

AR Laser Powered Field Probe (100k-6GHz)	: FL7006
Teseq Bilog Antenna (26-3000Mhz)	: CBL 6144
Agilent Signal Generator (9k-3200MHz)	: 8648C
Agilent EPM Series Power Meter	: E4419B
Schaffner Power Amplifier (80MHz-1GHz)	: CBA9433

(2) Test Conditions

Input Voltage	: 230VAC	Output Voltage	: Rated
Output Current	: 100%	Amplitude Modulated	: 80%, 1kHz
Electromagnetic Frequency	: 80~1000MHz	Ambient Temperature	: 25°C
Distance	: 3.0m	Wave Angle	: Horizontal and Vertical
Sweep Conditions	: 1.0% Step Up, 2.8 Seconds Hold		
Test Angle	: Top, Bottom, Left, Right, Front, Back		

(3) Test Method and Device Test Point



(4) Acceptable Conditions

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage to be within regulation specification after the test.
3. Along with 1 and 2, no discharge of fire or smoke, as well as no output failure.

(5) Test Result

Radiation Field Strength (V/m)	GWS500-12
10	PASS

3. Electrical Fast Transient / Burst Immunity Test (IEC61000-4-4)

MODEL : GWS500-12

(1) Equipment Used

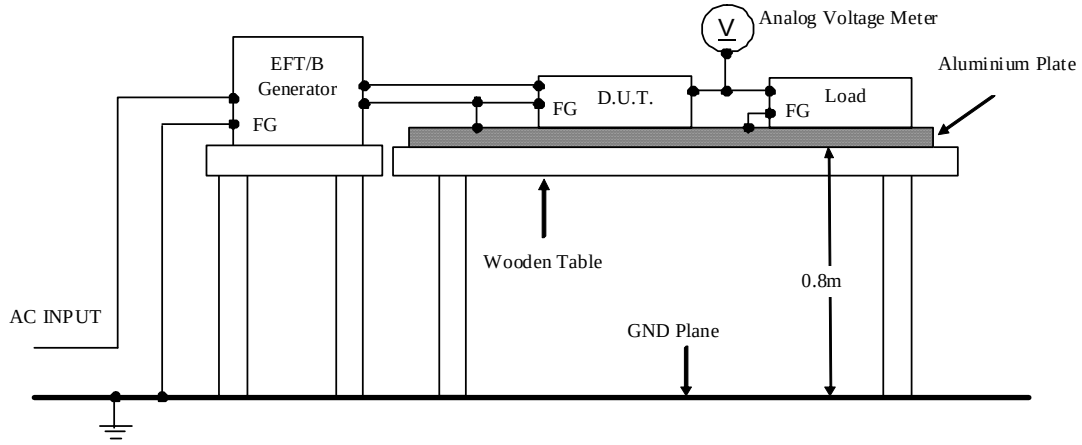
EFT/B Generator	:	EFT6501	(SCHAFFNER)

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Polarity	:	+ , -
Number of Tests	:	3 times	Ambient Temperature	:	25°C
Test time	:	1 minute			

(3) Test Method and Device Test Point

Apply to (N, L, FG), (N, L), (N), (L), (FG)



(4) Acceptable Conditions

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage to be within regulation specification after the test.
3. Along with 1 and 2, no discharge of fire or smoke, as well as no output failure.

(5) Test Result

Test Voltage (kV)	Repetition Rate (kHz)	GWS500-12
1.0	5.0	PASS
2.0	5.0	PASS

4. Surge Immunity Test (IEC61000-4-5)

MODEL : GWS500-12

(1) Equipment Used

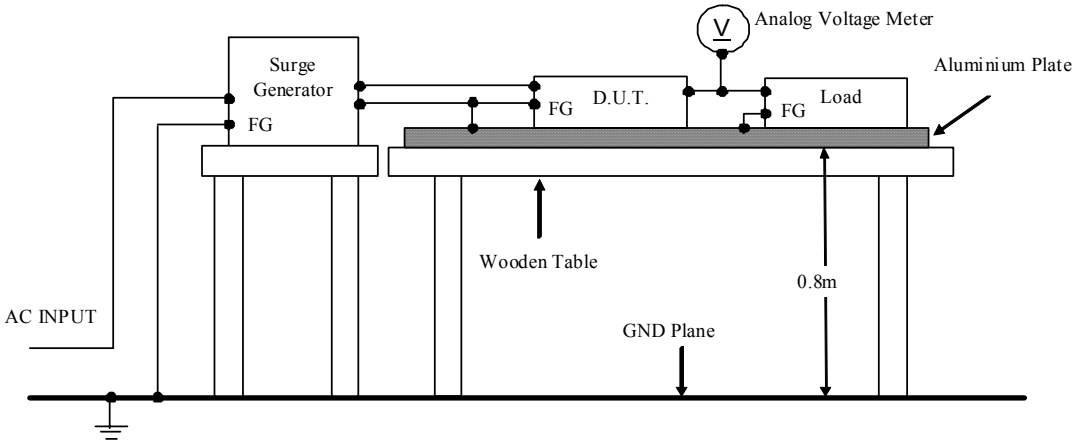
Surge Generator	:	SRG6501		(SCHAFFNER)			
Coupling Impedance	:	Common	12Ω	Coupling Capacitance	:	Common	9μF
		Normal	2Ω			Normal	18μF

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Number of Tests	:	5 times
Polarity	:	+, -	Mode	:	Common, Normal
Phase	:	0, 90 deg	Ambient Temperature	:	25°C

(3) Test Method and Device Test Point

Apply to Common mode (N-FG, L-FG) and Normal mode (N-L).



(4) Acceptable Conditions

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage to be within regulation specification after the test.
3. Along with 1 and 2, no discharge of fire or smoke, as well as no output failure.

(5) Test Result

Test Voltage (kV) Common	GWS500-12	Test Voltage (kV) Normal	GWS500-12
0.5	PASS	0.5	PASS
1.0	PASS	1.0	PASS
2.0	PASS		

5. Conducted Disturbances Induced by Radio-Frequency Field Immunity Test (IEC61000-4-6)

MODEL : GWS500-12

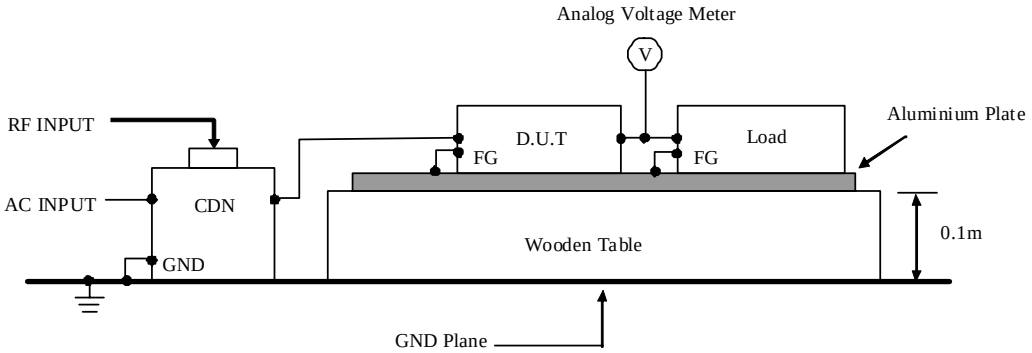
(1) Equipment Used

Schaffner RF Generator	:	NSG-2070
Schaffner Coupling and Decoupling Network (2/3-pin)	:	CDN M016
Schaffner Immunity Injection Clamp	:	KEMZ801
Schaffner 4dB/40W Attenuator	:	INA 2070-1

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Electromagnetic Frequency	:	150kHz~80MHz
Ambient Temperature	:	25°C			
Sweep Conditions	:	1.0% Step Up, 2.8 Seconds Hold			

(3) Test Method and Device Test Point



(4) Acceptable Conditions

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage to be within regulation specification after the test.
3. Along with 1 and 2, no discharge of fire or smoke, as well as no output failure.

(5) Test Result

Test Voltage (V)	GWS500-12
10	PASS

6. Power Frequency Magnetic Field Immunity Test (IEC61000-4-8)

MODEL : GWS500-12

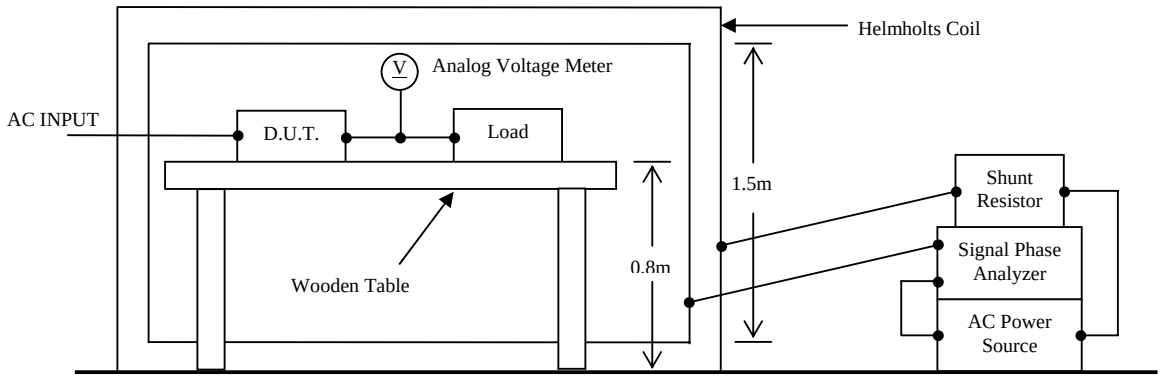
(1) Equipment Used

Narda Magnetic Field Generator : 1008

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Magnetic Frequency	:	50 Hz
Test Time	:	> 10 sec (Each direction)	Ambient Temperature	:	25°C
Direction	:	X, Y, Z			

(3) Test Method and Device Test Point



(4) Acceptable Conditions

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage to be within output voltage regulation specification after the test.
3. Along with 1 and 2, no discharge of fire or smoke, as well as no output failure.

(5) Test Result

Magnetic Field Strength (A/m)	GWS500-12
30	PASS

7. Voltage Dips, Short Interruptions Immunity Test (IEC61000-4-11)

MODEL : GWS500-12

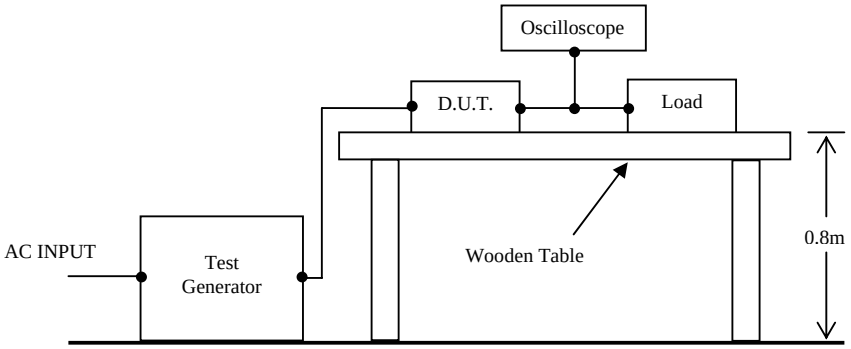
(1) Equipment Used

Test Generator	:	Programmable AC Source Model 61503	(CHROMA)

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Ambient Temperature	:	25°C
Number of Tests	:	3 times	Test Interval	:	> 10 sec.

(3) Test Method and Device Test Point



(4) Acceptable Conditions

At Test level 70%

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage to be within output voltage regulation specification after the test.
3. Along with 1 and 2, no discharge of fire or smoke, as well as no output failure.

At Test level 40%, 0%

1. Output voltage to be within output voltage regulation specification after the test.
2. No discharge of fire or smoke.

(5) Test Result

Dip Rate	Continue Time	GWS500-12
30%	500ms	PASS
60%	200ms	PASS
100%	20ms, 5,000ms	PASS