

DRF120-24-1

TEST DATA

IEC61000 SERIES

DWG. No. PA618-58-01		
APPD	CHK	DWG
<i>2088</i> 28/10/14	<i>h3</i>	<i>Kumelan</i> 25/Jul/14

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Terminology used

FG..... Frame GND

※ Test results are reference data based on our standard measurement condition.

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

MODEL : DRF120-24-1

(1) Equipment Used

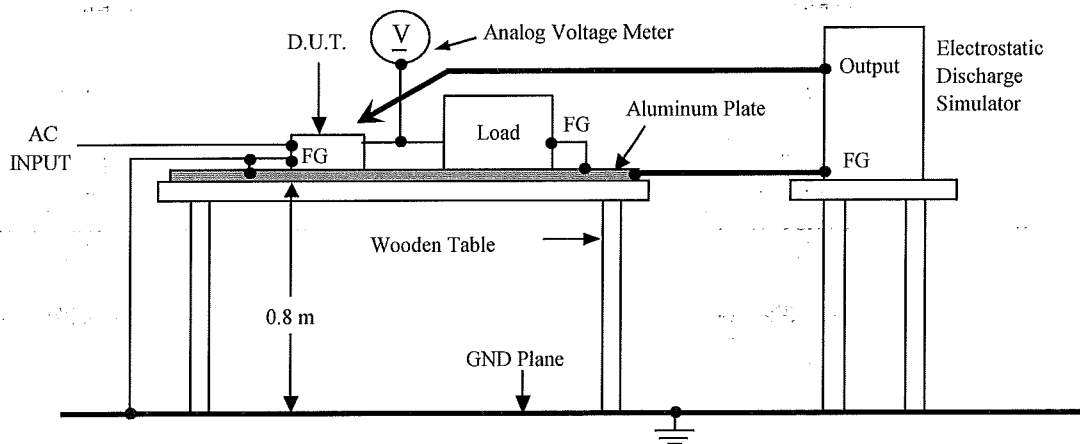
Electrostatic Discharge Simulator : NSG435 (SCHAFFNER)
 Discharge Resistance : 330Ω Capacitor : 150pF

(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 $\pm 5\%$ 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)	DRF120-24-1	Air Discharge (kV)	DRF120-24-1
2	PASS	4	PASS
4	PASS	8	PASS

DRF120-24-1

2. Radiated Radio-Frequency Electromagnetic Field Immunity Test (IEC61000-4-3)

MODEL : DRF120-24-1

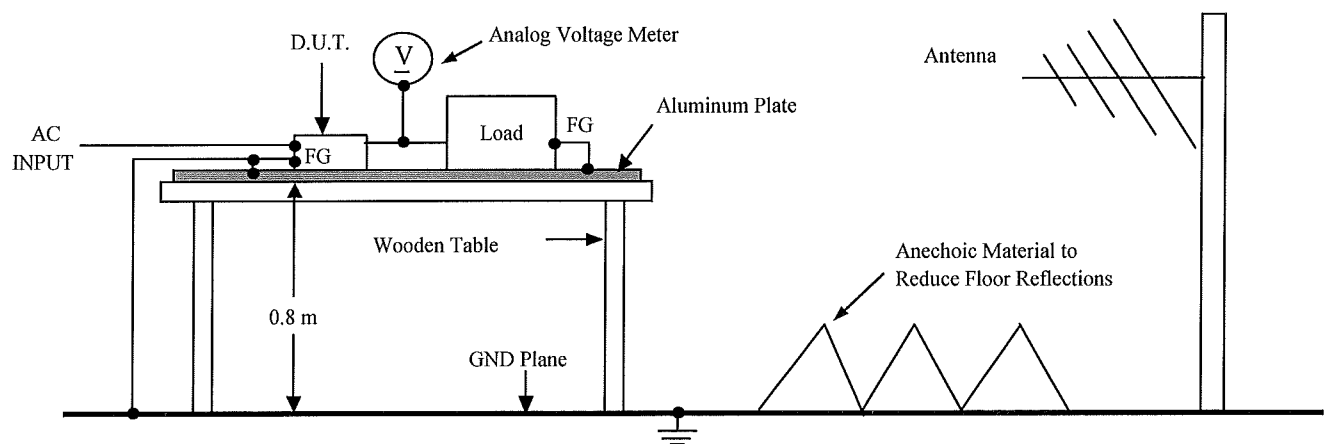
(1) Equipment Used

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 $\pm 5\%$ 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)	DRF120-24-1
10	PASS

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

MODEL : DRF120-24-1

(1) Equipment Used

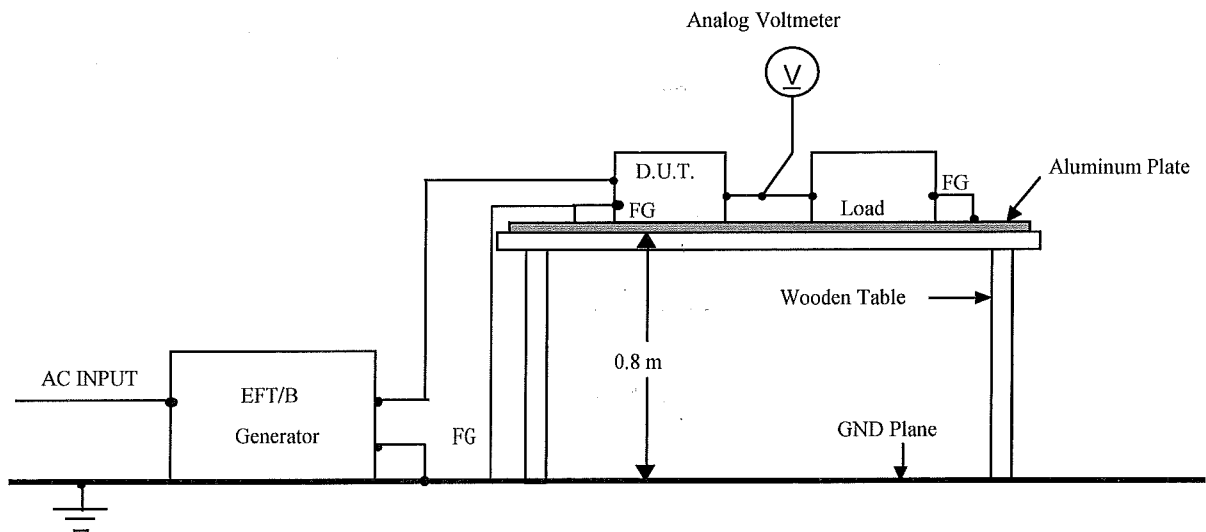
EFT/B Generator : NSG-2025 (SCHAFFNER)

(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 $\pm 5\%$ 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)	DRF120-24-1
1.0	5.0	PASS
2.0	5.0	PASS

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

MODEL : DRF120-24-1

(1) Equipment Used

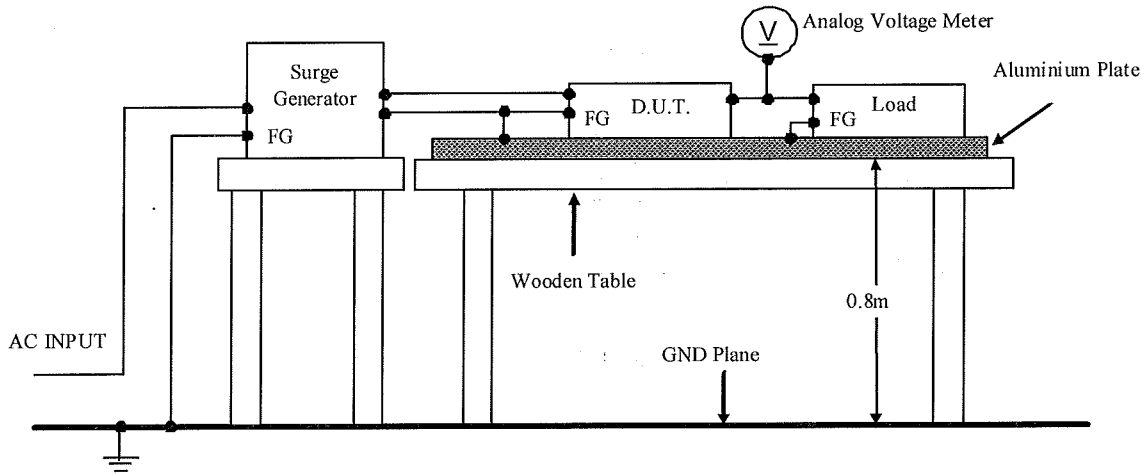
Surge Generator	: NSG-651	(SCHAFFNER)
Coupling Impedance	: Common 12Ω	Coupling Capacitance : Common 9μF
	Normal 2Ω	Normal 18μF

(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 $\pm 5\%$ 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	DRF120-24-1	Test Voltage (kV) Normal	DRF120-24-1
1	PASS	1	PASS
2	PASS	2	PASS
3	PASS	-	-
4	PASS	-	-

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

MODEL : DRF120-24-1

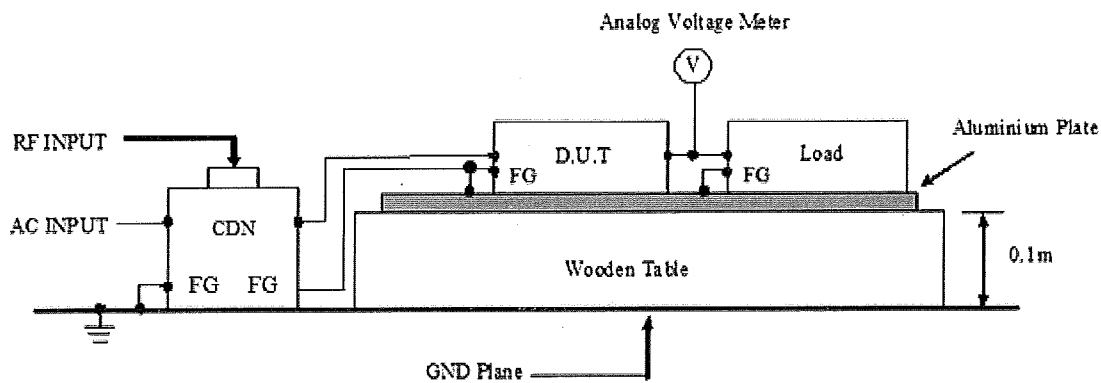
(1) Equipment Used

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 $\pm 5\%$ 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)	DRF120-24-1
10	PASS

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

MODEL : DRF120-24-1

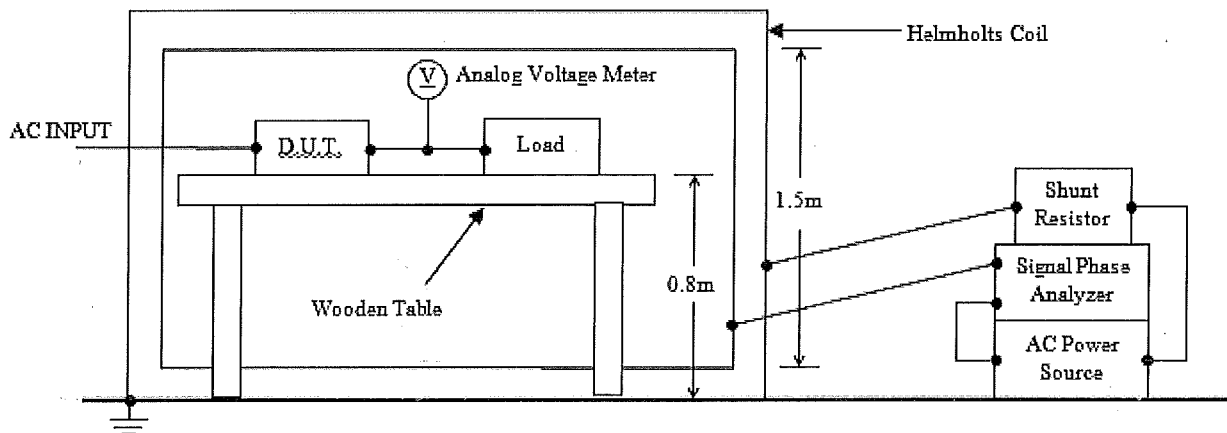
(1) Equipment Used

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 $\pm 5\%$ 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)	DRF120-24-1
30	PASS

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

MODEL : DRF120-24-1

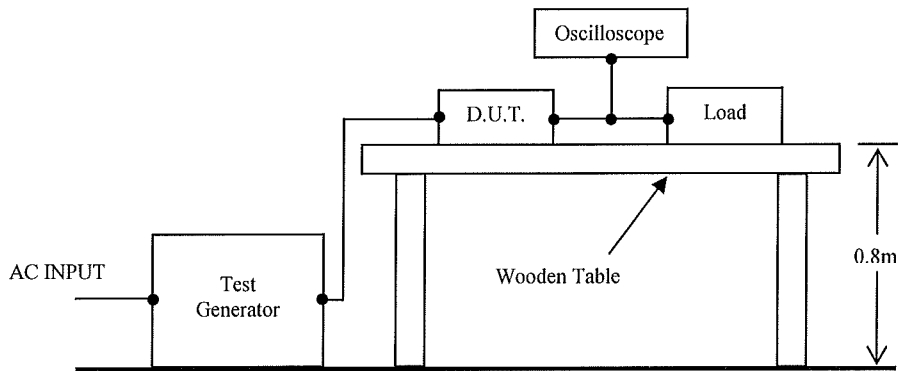
(1) Equipment Used

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 $\pm 5\%$ 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	DRF120-24-1
30%	500ms	PASS
60%	200ms	PASS
100%	20ms, 5,000ms	PASS