

DRF480-24-1

TEST DATA

IEC61000 SERIES

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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 : DRF480-24-1

(1) Equipment Used

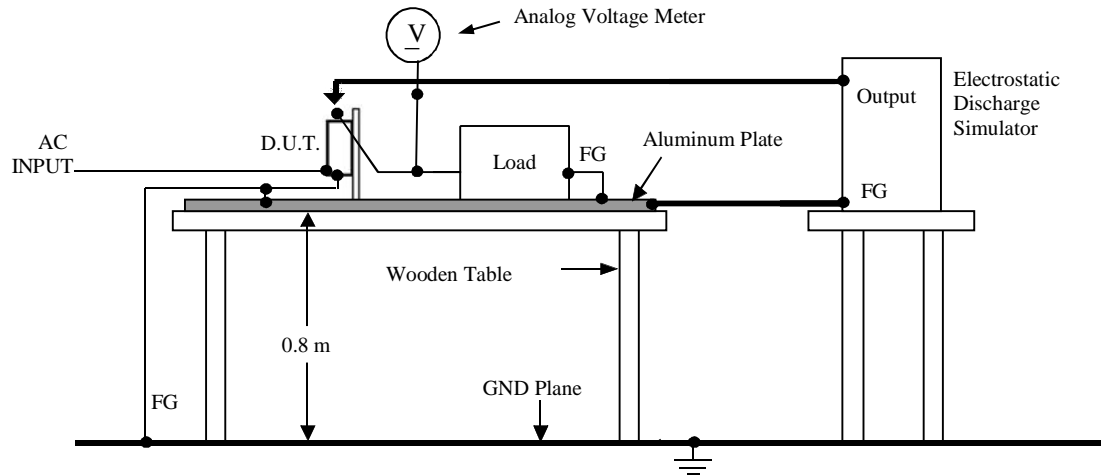
Electrostatic Discharge Simulator : NSG435 (SCHAFFNER)
 Discharge Resistance : 330Ω Capacitor : 150pF

(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) | DRF480-24-1 | Air Discharge (kV) | DRF480-24-1 |
|------------------------|-------------|--------------------|-------------|
| 2 | PASS | 4 | PASS |
| 4 | PASS | 8 | PASS |

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

MODEL : DRF480-24-1

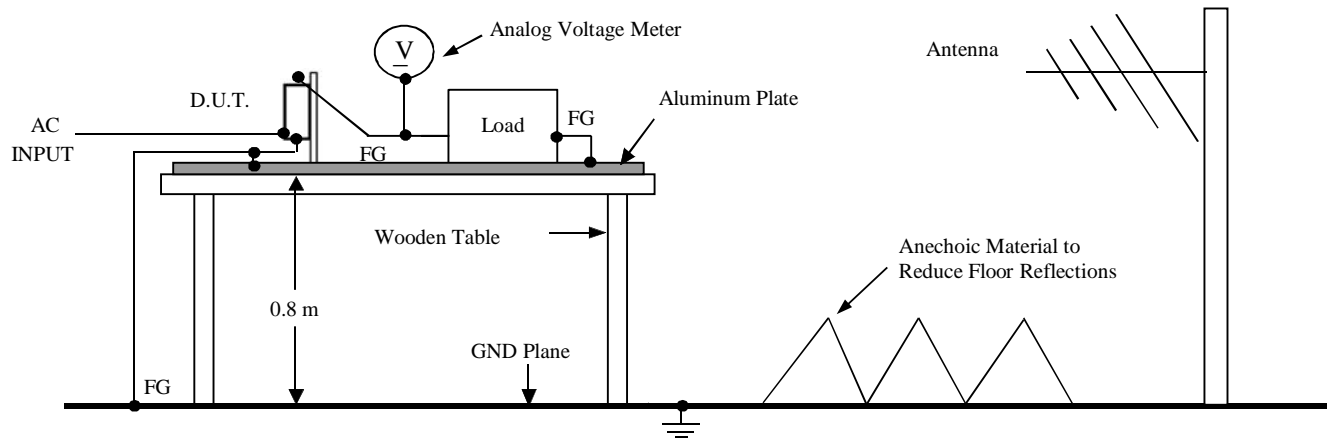
(1) Equipment Used

| | |
|--|------------|
| 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) | DRF480-24-1 |
| 10 | PASS |

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

MODEL : DRF480-24-1

(1) Equipment Used

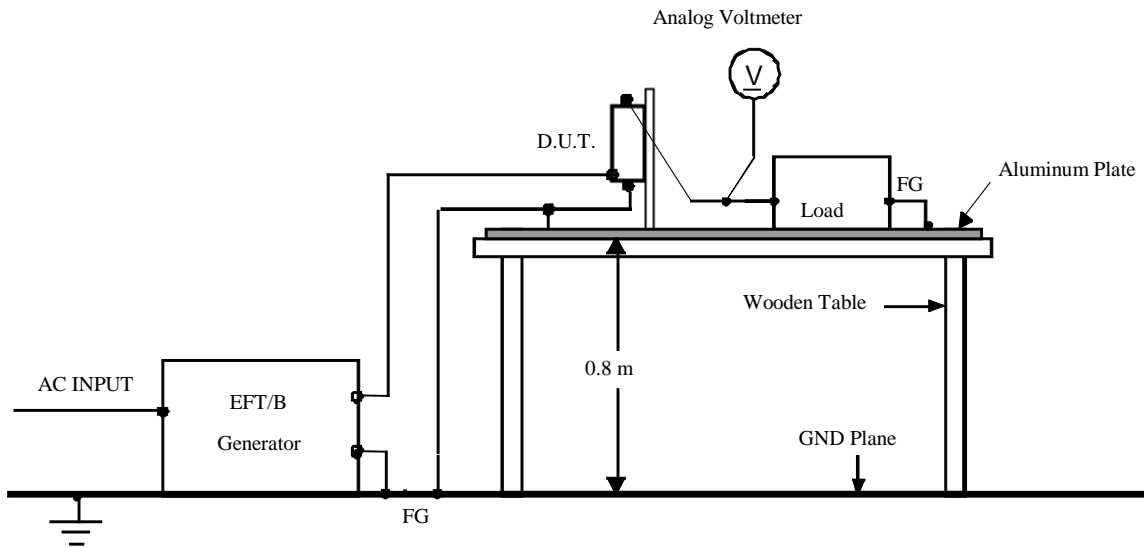
EFT/B Generator : EFT 6501 (SCHAFFNER)

(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) | DRF480-24-1 |
|-------------------|-----------------------|-------------|
| 1.0 | 5.0 | PASS |
| 2.0 | 5.0 | PASS |

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

MODEL : DRF480-24-1/HLIVS

(1) Equipment Used

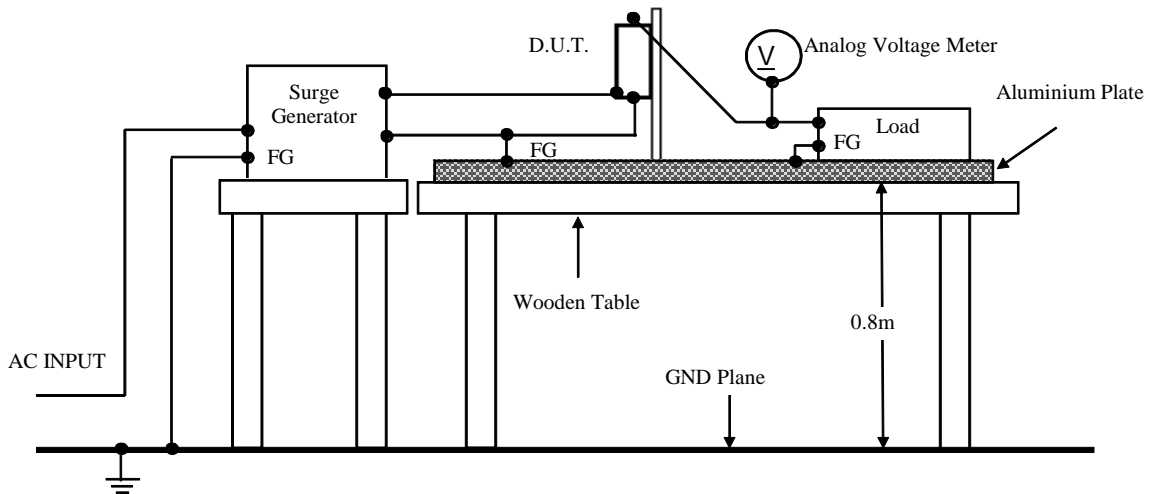
| | | |
|--------------------|--------------|-----------------------------------|
| Surge Generator | : SRG6501 | (SCHAFFNER) |
| Coupling Impedance | : Common 12Ω | Coupling Capacitance : Common 9μF |
| | Normal 2Ω | Normal 18μF |

(2) Test Conditions

| | | | |
|----------------|------------------|---------------------|------------------|
| Input Voltage | : 115VAC, 230VAC | Output Voltage | : Rated |
| Output Current | : 0%, 100% | Number of Tests | : 5 times |
| Polarity | : +, - | Mode | : Common, Normal |
| Phase | : 0, 90, 270 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.

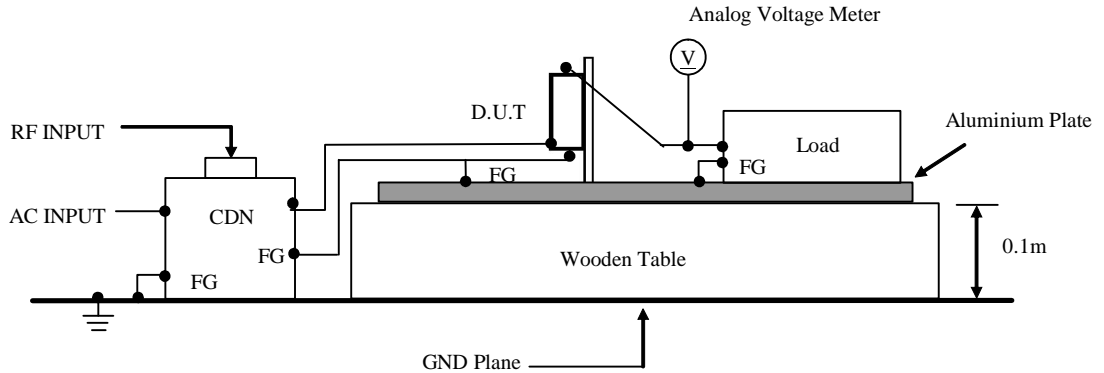
(5) Test Result

| Test Voltage (kV) Common | DRF480-24-1/HLIVS | Test Voltage (kV) Normal | DRF480-24-1/HLIVS |
|-----------------------------|-------------------|-----------------------------|-------------------|
| 1 | PASS | 1 | PASS |
| 2 | PASS | 2 | PASS |
| 4 | PASS | - | - |

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

MODEL : DRF480-24-1

(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) | DRF480-24-1 |
| 10 | PASS |

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

MODEL : DRF480-24-1

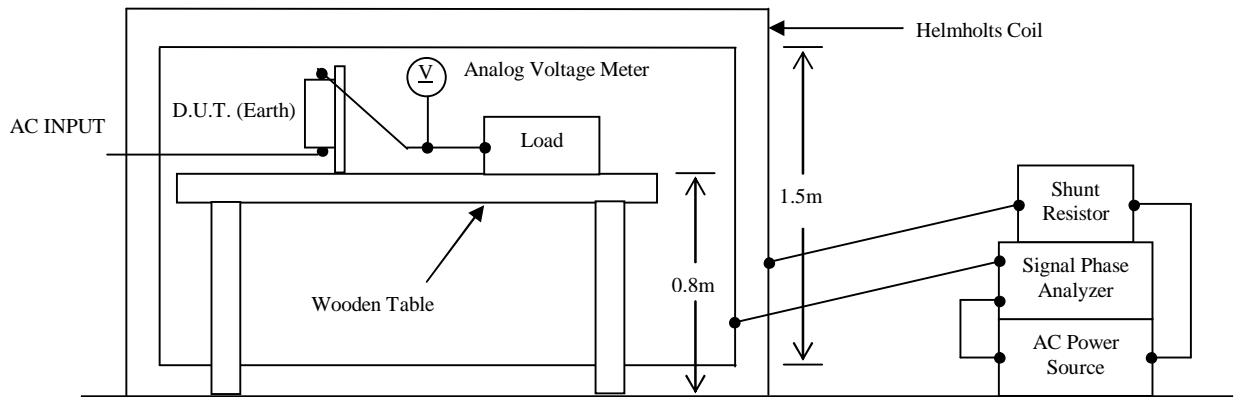
(1) Equipment Used

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) | DRF480-24-1 |
| 30 | PASS |

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

MODEL : DRF480-24-1

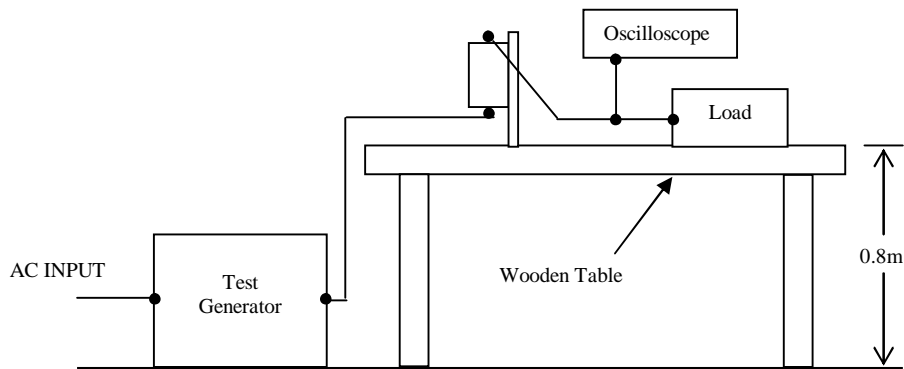
(1) Equipment Used

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 | DRF480-24-1 |
|----------|---------------|-------------|
| 30% | 500ms | PASS |
| 60% | 200ms | PASS |
| 100% | 20ms, 5,000ms | PASS |