

DRM40

TEST DATA

IEC61000 SERIES

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Terminology used

FG	Frame Ground
+IN1	+Input 1
-IN1	-Input 1
+IN2	+Input 2
-IN2	-Input 2
+V	+Output
-V	-Output
CN1	Connector 1
CN2	Connector 2

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

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

MODEL : DRM40

(1) Equipment Used

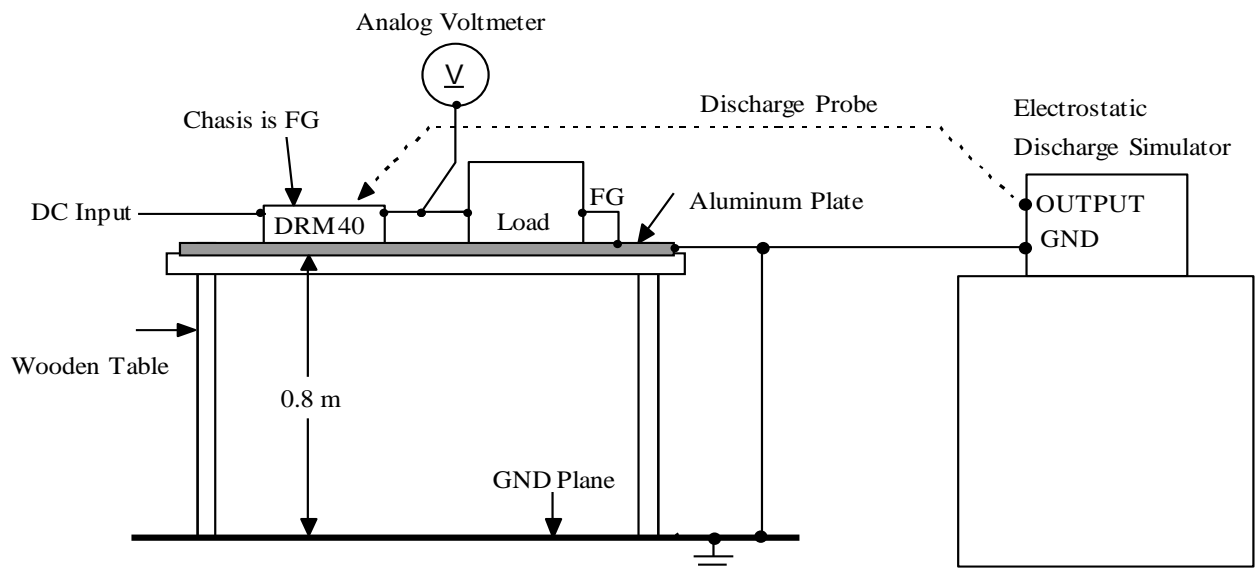
Electrostatic Discharge Tester : NSG 435 (Schaffner)
 Discharge Resistance : 330Ω Capacitor : 150pF

(2) Test Conditions

Input Voltage : 24VDC Output Voltage : Rated
 Output Voltage : 100% Polarity : + , -
 Number of Test : 10 times Ambient Temperature : 25°C
 Discharge Interval : > 1 second

(3) Test Method and Device Test Point

Contact Discharge : FG, Case Screw
 Air Discharge : Input and Output Terminals



(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 Results

Contact Discharge (kV)	DRM40	Air Discharge (kV)	DRM40
4	PASS	4	PASS
6	PASS	8	PASS
8	PASS	15	PASS

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

MODEL : DRM40

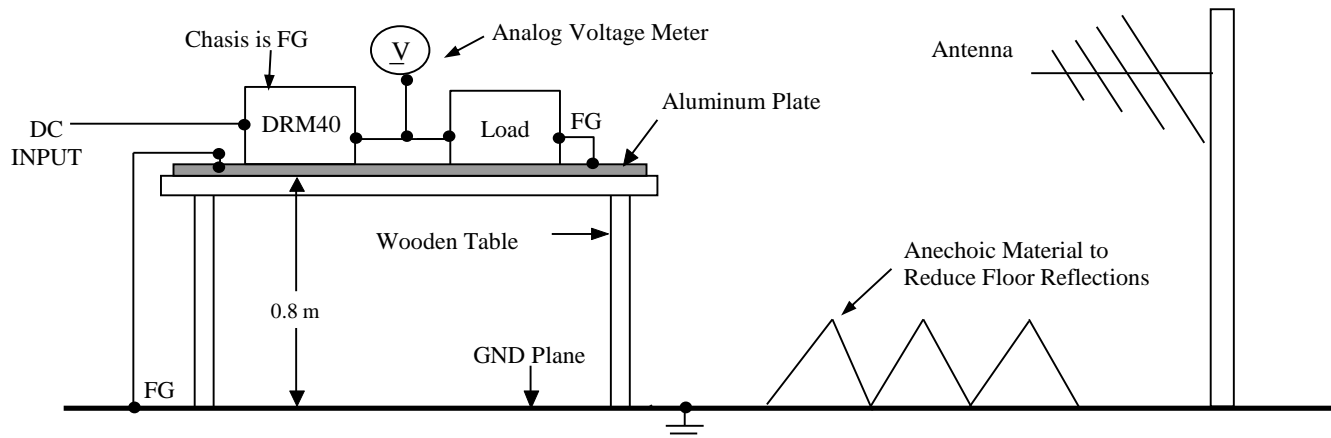
(1) Equipment Used

Agilent Signal Generator	: E4332B
Toyo Corporation RF Selector	: NS4900
Schwarzbeck stacked Double Log.-Per. Antenna	: STLP 9128, STLP 9149
Boonton Power Amplifier	: CBA9413A
Milmega Power Amplifier	: AS0827-230
Boonton Power Sensor	: 51011-EMC
Boonton Power Meter	: 4232A
AR Field Probe	: FL7006

(2) Test Conditions

Input Voltage	: 24VDC	Output Voltage	: Rated
Output Current	: 100%	Ambient Temperature	: 25°C
Electromagnetic Frequency	: 80MHz~3000MHz	Amplitude Modulated	: 80%, 1kHz
Distance	: 3m	Wave angle	: Horizontal and Vertical
Frequency Step	: 1.0%		
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 Results

Radiation Field Strength (V/m)	DRM40
10	PASS

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

MODEL : DRM40

(1) Equipment Used

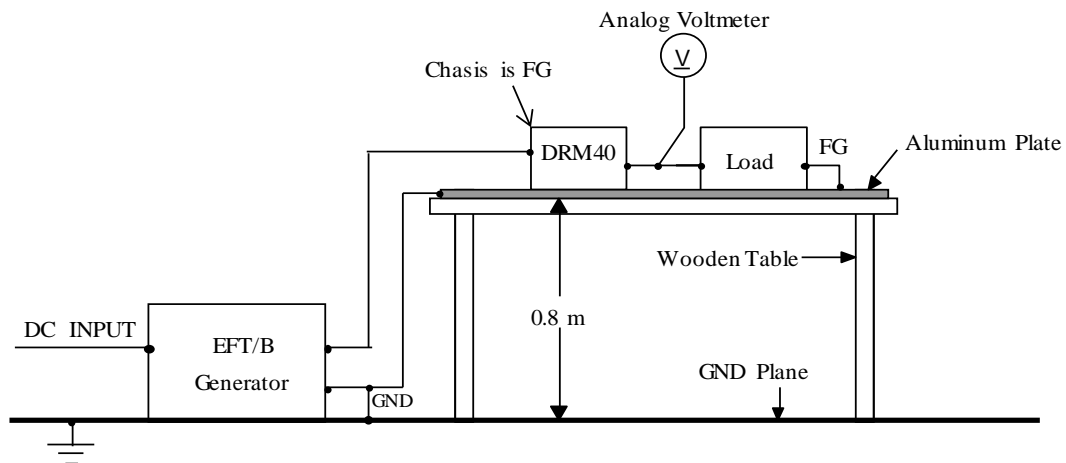
EFT/B Generator : EFT 6501 (SCHAFFNER)
 DC source : GEN5000W (TDK-Lambda)

(2) Test Conditions

Input Voltage	: 24VDC	Output Voltage	: Rated
Output Current	: 0%, 10A	Polarity	: +,-
Number of Tests	: 3 times	Ambient Temperature	: 25°C
Test Duration	: 1 minute		

(3) Test Method and Device Test Point

Apply to [(+IN1)+(IN2) , (-IN1)+(-IN2) , FG] , [(+IN1)+(IN2) , (-IN1)+(-IN2)] ,
 [(+IN1)+(IN2)] , [(-IN1)+(-IN2)] , [FG]



(4) Acceptable Conditions

1. Output voltage regulation not 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 Results

Test Voltage (kV)	Repetition Rate (kHz)	DRM40
2	5	PASS
2.4	5	PASS

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

MODEL : DRM40

(1) Equipment Used

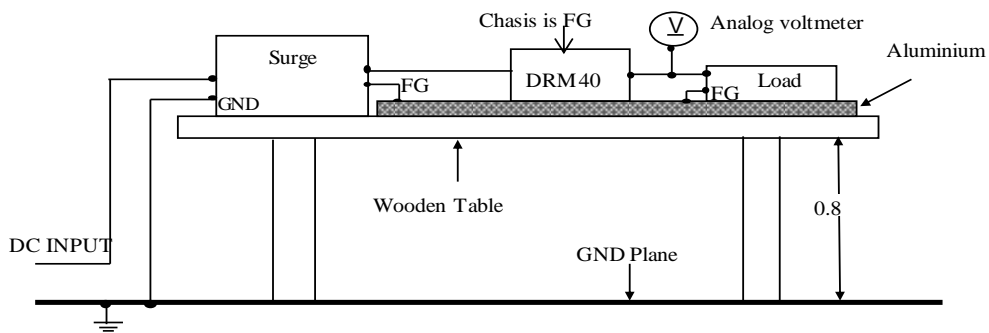
Surge Generator : SRG6501(SCHAFFNER) DC source : GEN5000W (TDK-Lambda)
 Coupling Impedance : Common 12Ω Coupling Capacitance : Common 9μF
 Normal 2Ω Normal 18μF

(2) Test Conditions

Input Voltage : 24VDC Output Voltage : Rated
 Output Current : 0%, 10A Number of Test : 5 times
 Polarity : +, - Mode : Normal, Common
 Ambient Temperature : 25°C

(3) Test Method and Device Test Point

Apply to Input terminals : Normal mode [+IN1,-IN1] , [+IN2,-IN2] and
 Common mode [+IN1,FG] , [-IN1,FG] , [+IN2,FG] , [-IN2,FG]
 Output terminals : Normal mode [+V,-V] and Common mode [+V,FG] , [-V,FG]
 DC OK 1 & 2 (Signal) : Common mode [CN1, FG] , [CN2, 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 Results

Surge (Input Connector)

Test Voltage (kV) Normal	DRM40	Test Voltage (kV) Common	DRM40
0.5	PASS	1	PASS
0.6	PASS	1.2	PASS

Surge (Output Connector)

Test Voltage (kV) Normal	DRM40	Test Voltage (kV) Common	DRM40
0.5	PASS	1	PASS
0.6	PASS	1.2	PASS

Signal Surge (DC-OK Connector)

Test Voltage (kV) Common	DRM40
0.5	PASS
0.6	PASS

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

MODEL : DRM40

(1) Equipment Used

Schloder Immunity Test System : CDG 6000

Teseq Coupling and Decoupling Network : M016

(2) Test Conditions

Input Voltage : 24VDC

Output Voltage : Rated

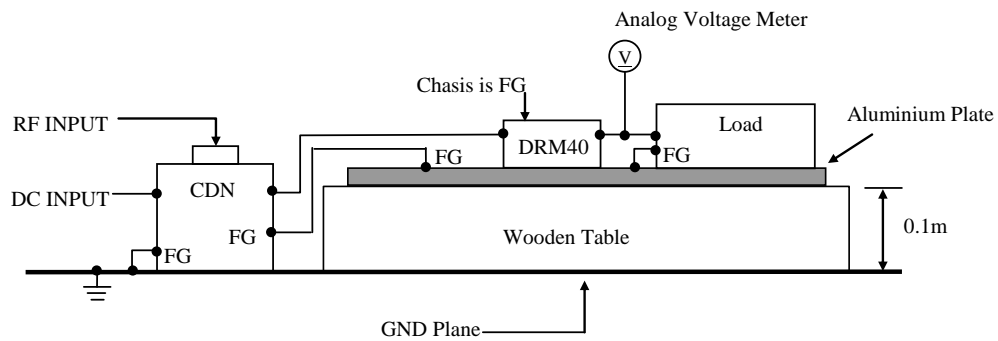
Output Current : 100%

Ambient Temperature : 25°C

Electromagnetic Frequency : 150kHz ~ 80MHz

Frequency Step : 1%

(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 Results

Test Voltage (V)	DRM40
10	PASS

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

MODEL : DRM40

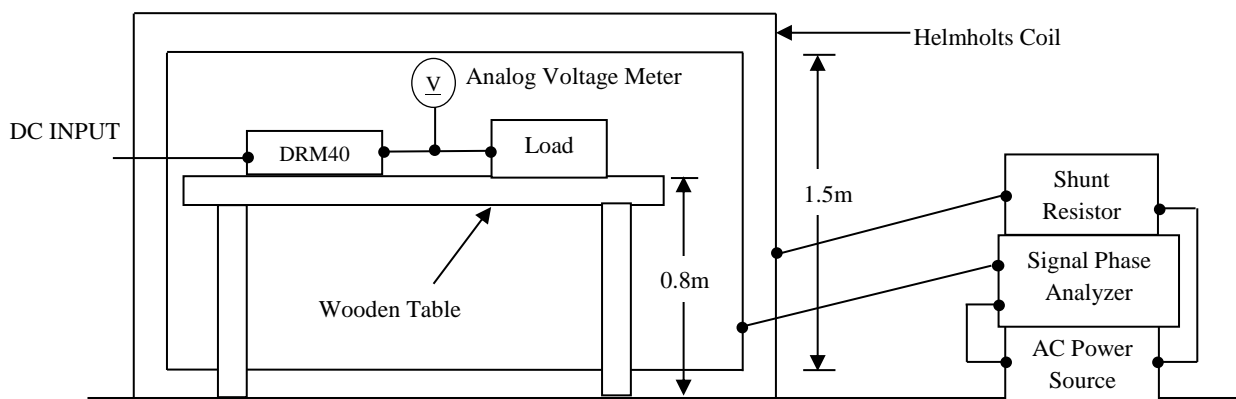
(1) Equipment Used

Narda Exposure Lever Tester : ELT-400

(2) Test Conditions

Input Voltage	:24VDC	Output Voltage	:Rated
Output Current	:100%	Magnetic Frequency	:50 Hz
Direction	:X, Y, Z	Ambient Temperature	:25 ⁰ C

(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 Results

Magnetic Field Strength (A/m)	DRM40
10	PASS