

**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**

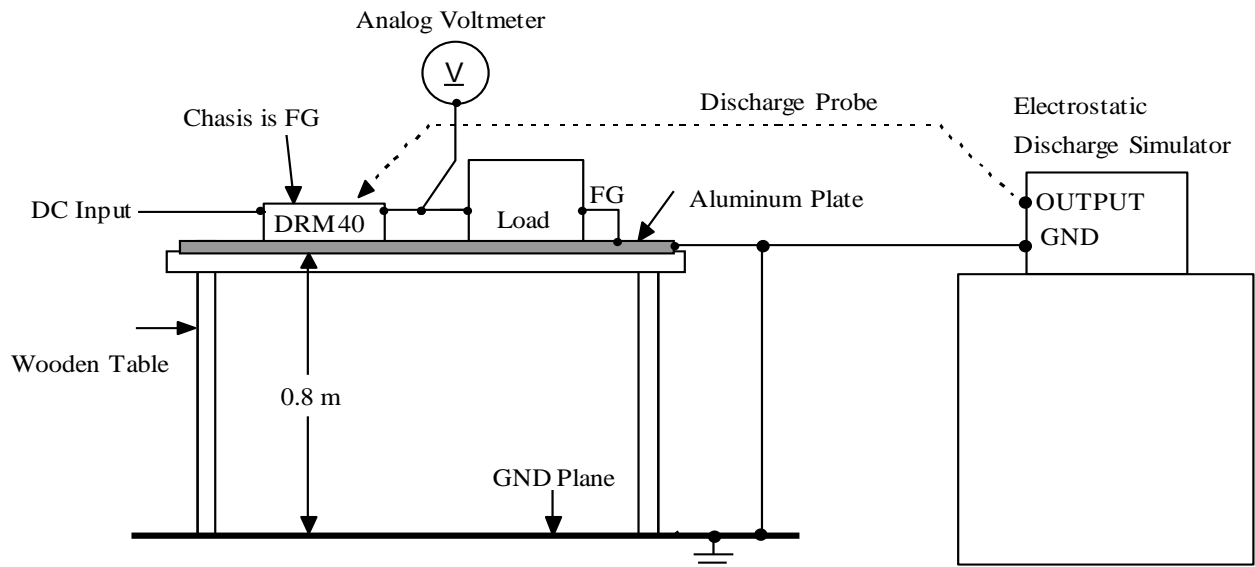
Electrostatic Discharge Tester : NSG 435 (Schaffner)  
 Discharge Resistance : 330Ω Capacitor : 150pF

**(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**

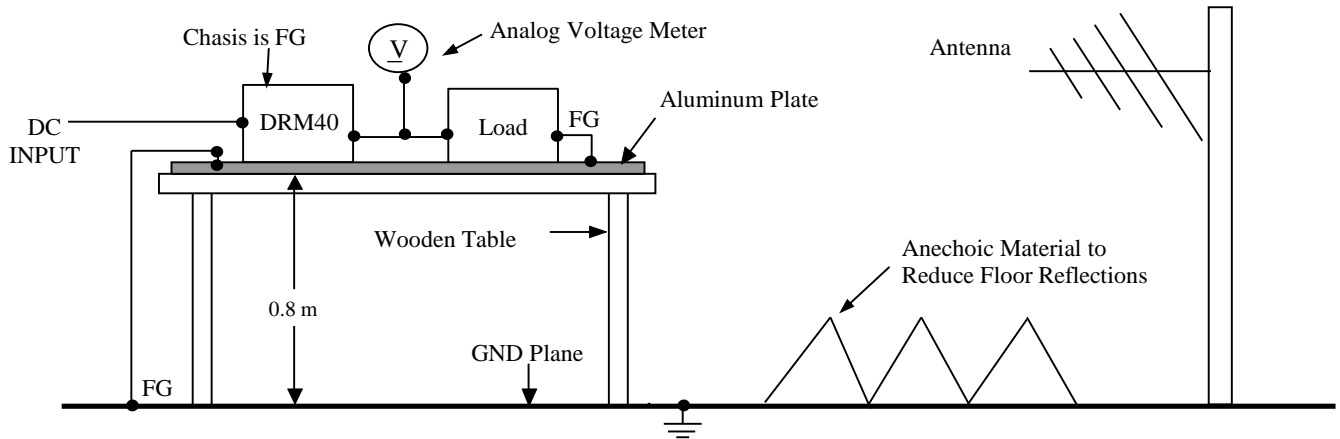
**(1) Equipment Used**

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**

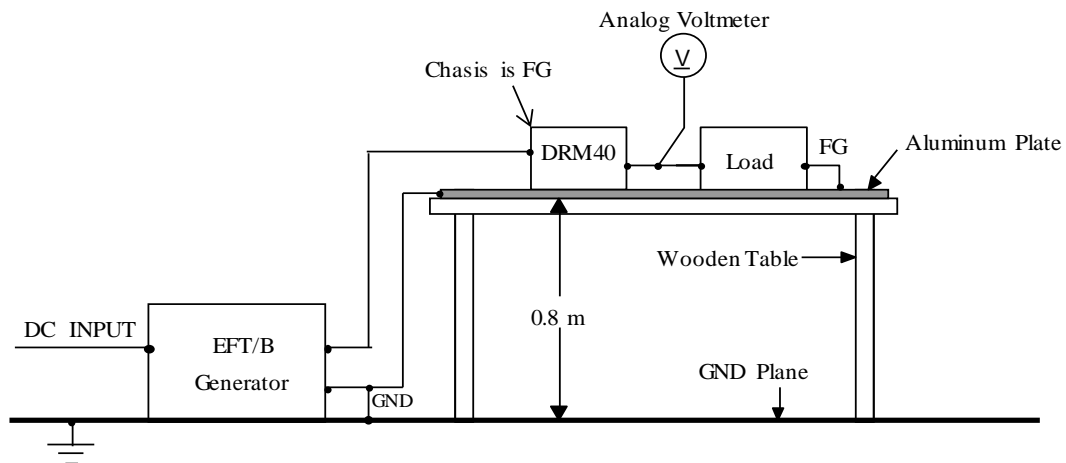
EFT/B Generator : EFT 6501 (SCHAFFNER)  
 DC source : GEN5000W (TDK-Lambda)

**(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 Normal 2Ω	Coupling Capacitance	: Common 9μF Normal 18μF

#### (2) Test Conditions

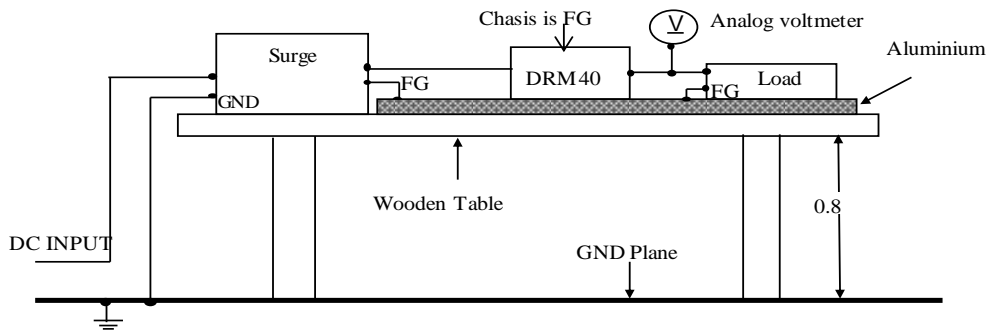
Input Voltage	: 24VDC	Output Voltage	: Rated
Output Current	: 0%, 10A	Number of Test	: 5 times
Polarity	: +, -	Mode	: Normal, Common
		Ambient Temperature	: 25°C

#### (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

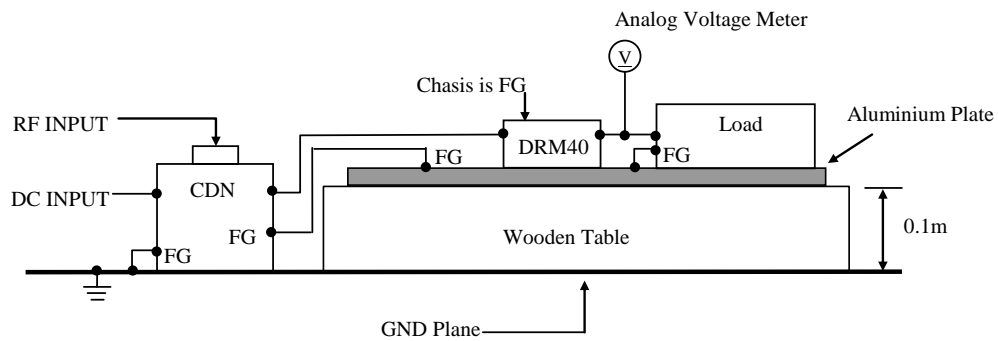
**(2) Test Conditions**

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**

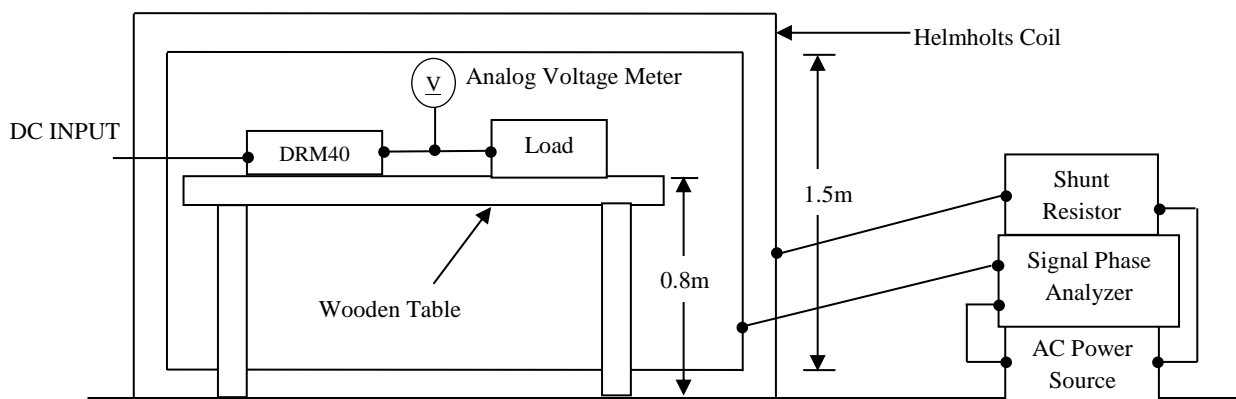
**(1) Equipment Used**

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 <sup>0</sup> 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