

Multi Noise Simulator

MNS-C41

EMC Compliance Testing, With NoiseKen Quality

MNS-C41 combines the key EMC immunity tests, such as Electrical Fast Transient/Burst (IEC 61000-4-4), Lightning Surge (IEC 61000-4-5), and Voltage Short Interruptions (IEC 61000-4-11), into a single platform. Purpose-built for EMC compliance testing, it streamlines the test process, enhances reliability, and provides a dependable testing environment that enables operators to work with confidence.

- Supports EFT/Burst, Lightning Surge, and Voltage short Interruptions Testing
- Compliant with IEC 61000-4-4, IEC 61000-4-5, and IEC 61000-4-11
- * Voltage Dip Testing (16A) also available optionally. Voltage Variation Testing is not supported.
- Dedicated PC Control Software with Malfunction Judgement and Automated Report Generation functions.
- Dedicated Pre-Check Software for Efficient Daily Inspection
- Durable, Maintenance-Friendly Design for Long-Term Reliability
- Color Touch Panel with Excellent Visibility and Operability
- English and Japanese User Interface



Specification

● Electrical Fast Transient / Burst Test

■ Generator Specifications

Parameter	Specification
Applicable Standard	IEC 61000-4-4 Ed.3:2012 Compliant
Output Voltage	200 V to 4500 V, 10 V Step
Polarity	Positive / Negative
Pulse Repetition Frequency	0.1 kHz to 1000 kHz 0.1 kHz to 1 kHz / 0.01 kHz Step 1.0 kHz to 10 kHz / 0.1 kHz Step 10 kHz to 100 kHz / 1 kHz Step 100 kHz to 1000 kHz / 10 kHz Step
Number of pulses	1 to 1000, 1 Pulse Step
Burst Duration	Calculated as: (Number of Pulses) / (Pulse Repetition Frequency) Directly Adjustable Range: 0.01 ms to 999 ms
Burst Period	10 ms to 1000 ms $\pm 10\%$, 10 ms Step
Polarity Alternation Function	Not Available
Continuous Pulse Output	Not Available
Waveform Specification (50 Ω Load)	Pulse Peak Voltage: (Output Voltage / 2) $\pm 10\%$ Rise Time : 5 ns $\pm 30\%$ Pulse Width : 50 ns $\pm 30\%$
Waveform Specification (1 k Ω Load)	Pulse Peak Voltage: (Output Voltage x 0.95) $\pm 20\%$ Rise Time : 5 ns $\pm 30\%$ Pulse Width : 35 ns - 150 ns $\pm 30\%$
Pulse Output	Applicable Range Output Voltage: ± 250 V to 4000 V Pulse Repetition Frequency: 5 kHz to 100 kHz

■ CDN Specifications

Parameter	Specification
EUT Power capacity	Single-Phase AC 85 V - 240 V, 50/60 Hz, DC 125 V, 16 A
Application Phase	L / N / PE Single Line, All Lines, or Individual Lines Selection
Coupling Mode	Common Mode
Output Type	Terminal Block
Coupling Capacitor	33 nF
Waveform Specification (50 Ω Load)	Pulse Peak Voltage: (Voltage Setting / 2) $\pm 10\%$ Rise Time: 5.5 ns (-1.5/+1.5) ns Pulse Width: 45 ns (-15/+15) ns Specified at: Voltage Setting: ± 4000 V Pulse Repetition Frequency: 5 kHz to 100 kHz
Input residual voltage	10% or less of the set pulse voltage Specified with EUT line inputs and outputs open-circuited
AC Line Synchronization	Mode: Synchronous / Asynchronous Phase Angle: 0° - 360° $\pm 10^\circ$, 1° Step Min. Sync Voltage: AC 90 V or Higher Frequency: 50 Hz / 60 Hz $\pm 10\%$

● Lightning Surge Test

■ Generator Specifications

Parameter	Specification
Applicable Standard	IEC 61000-4-5 Ed.3:2014 Compliant
Output Voltage	250 V ~ 4500 V 10 V step
Polarity	Positive / Negative
1.2/50 μ s - 8/20 μ s Combination Wave	Voltage Open-Circuit Voltage: 250 V - 4500 V $\pm 10\%$ Front Time: 1.2 μ s $\pm 30\%$ Duration: 50 μ s $\pm 20\%$ Undershoot: $\leq 30\%$ of Peak Voltage Current Short-Circuit Current : 125 A to 2250 A $\pm 10\%$ Front Time : 8 μ s $\pm 20\%$ Duration : 20 μ s $\pm 20\%$ Undershoot : $\leq 30\%$ of Peak Current
Surge Generation Circuit Type	Floating
Repetition Period	10 s to 999 s
Output Type	4 mm Safety Plug
Pulse Voltage Monitor	BNC Output, 2000 V/V ($\pm 10\%$) Output accuracy: $\pm 10\%$ of actual output. Open-Circuit Output (No Waveform Guarantee)
Pulse Current Monitor	BNC Output, 1000 A/V ($\pm 10\%$) Output accuracy: $\pm 10\%$ of actual output. Short-Circuit Output (No Waveform Guarantee)

■ CDN Specifications

Parameter	Specification
EUT Power capacity	Single-Phase AC 85 V - 240 V, 50/60 Hz DC 125 V, 16 A
Application Phase	L/N
Coupling Mode	Common Mode, Normal Mode
Output Type	Terminal Block
Coupling network	Common Mode: 10 Ω + 9 μ F Normal Mode: 18 μ F
Waveform Specification	Common Mode Voltage Open-Circuit Voltage: 250 V - 4500 V $\pm 10\%$ Front Time: 1.2 μ s $\pm 30\%$ Duration: 50 μ s (+10 μ s / -25 μ s) Current Short-Circuit Current: 20.8 A - 375 A $\pm 10\%$ Front Time: 2.5 μ s $\pm 30\%$ Duration: 25 μ s $\pm 30\%$ Normal Mode Voltage Open-Circuit Voltage: 250 V - 4500 V $\pm 10\%$ Front Time: 1.2 μ s $\pm 30\%$ Duration: 50 μ s (+10 μ s / -25 μ s) Current Short-Circuit Current: 125 A - 2250 A $\pm 10\%$ Front Time: 8 μ s $\pm 20\%$ Duration: 20 μ s $\pm 20\%$
AC Line Synchronization	Mode: Synchronous / Asynchronous Phase Angle: 0° - 360° $\pm 10^\circ$, 1° Step Min. Sync Voltage: AC 90 V or Higher Frequency: 50 Hz / 60 Hz $\pm 10\%$

Specifications

● Voltage Short Interruptions Test

Parameter	Specification
Applicable Standard	IEC 61000-4-11 Ed.3:2020 Compliant (<i>parameters listed below only</i>)
Test Range	0 V - 240 V
Frequency	DC, 50/60 Hz
Output Current	16A
Inrush Current	500 A Peak
Interruption Duration	100 μs - 30 s
Fall Time / Rise Time	1μs - 5 μs
AC Line Sync Output	0° - 360°, 1° Step
Repetition Period	10 ms - 999 s

■ General Specifications

Parameter	Specification
Power Requirements	AC 100 V - 240 V ±10%, 50/60 Hz
Power Consumption	130 VA
Operating Environment	Temperature: 15°C - 35°C Relative Humidity: 25% - 75%
Dimensions	W 430 × H 349 × D 540 mm(Excluding Protrusions)
Weight	Approx. 50 kg

■ Other Specifications

Parameter	Specification
Emergency Stop Button	Push-Lock Pushbutton Switch
Interlock Terminal	Testing Stops When Open-Circuited
Pre-Check Function	PC Software-Based(Basic Waveform Verification)
EUT Line Input/Output Terminal	Terminal Block
LCD	Color Touchscreen
Language	Selectable: English / Japanese

Optional Accessories

Product Name	Model No.	Description
CDN Waveform Verification Connector	02-00169A	Dedicated connector for verifying CDN output waveform.
SG Terminal Connection Plate for MNS-C41	03-00145A	Metal plate for connecting the SG terminal of the tester to the ground plane.
Single-Phase Tap Transformer	17-00008A	Transformer for voltage dips and short interruptions testing in accordance with IEC 61000-4-11. <i>*not an Isolation Transformer!</i>
Outlet Box for MNS(125 V, 15 A, 2P+PE)	18-00089A	Outlet box for connecting EUTs, rated for 125 V, 15 A. JP/USA (Type A)
Outlet Box for MNS(Multi-Type)	18-00090A	Outlet box for EUT connection compatible with multiple outlet standards.
Coupling Clamp	15-00018A	Coupling clamp for communication line testing in accordance with IEC 61000-4-4.
Clamp Calibration Fixture	15-00010A	Fixture for verifying and calibrating the coupling characteristics of the coupling clamp.
OPTICAL INTERFACE BOX	07-00022A	Interface unit for optically isolated connection between the tester and a PC.
MNS-C41 Pre-Check Kit	14-00078A	Pre-check software for verification of MNS-C41 output waveform. <i>* Oscilloscope required separately.</i>
MNS-C41 RemoteW	14-00079A	Dedicated software for remote control of the MNS-C41 from a PC.

* An isolation transformer is required for Lightning Surge testing. Test options for communication and signal lines are currently under development.
 Additional accessories, including waveform verification fixtures for inspection and calibration, as well as safety-related options, are also available.
 Please contact our sales representatives for details.

* Designs, appearances and specifications on the products are subject change without notice.