Technical Specification

No. E-CDN2000A-06-63.doc
Revised: 15. July 2015

1 CDN Type CDN2000A-06-63

1.1 Introduction

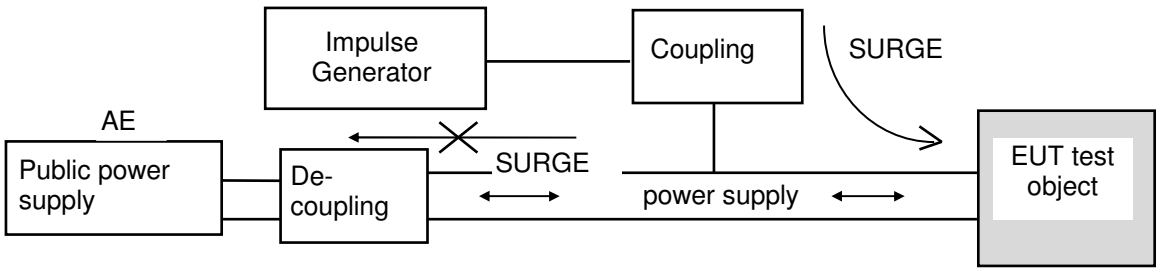
The CDN2000A-06-63 coupling network can be used together with Generators from the MIG, TRA and IMU range. The CDN allows SURGE and EFT pulses to be superimposed onto single and three phase power supply lines.

The CDN2000A-06-63 can be used as a coupling network with the following testers:

- MIG0603INx range testers with single phase coupling network included, extending the application range to three phase
- MIG0603OS2 without any coupling filter
- MIG1203CWG (6kV CWG only)
- TRA3000, TRA2006
- IMU3000, IMU4000

2 General

2.1 Brief description of the coupling de-coupling network



Combination wave testers generate a surge impulse with a voltage wave shape 1,2/50 µs at "no load" and a current wave shape 8/20 µs at short circuit. This type of surge is applied to equipment connected to the public single or three phase power supplies. The surge should only influence the EUT and not the public power supply, therefore the Surge must be coupled to EUT with very low attenuation and must have a very high attenuation to the public power supply.

2.2 Explanation of the term CDN2000A-06-63, application range

Explanation of the term CDN2000A-06-63
C = coupling, D = de-coupling, N = network, A = Automatic path selection, 06 = designed for maximum 6kV, 63 = maximum allowed ac current per phase (63A).

Up to 6 kV CWG the following CDNs can be used:
CDN2000-06-25, CDN2000-06-32, CDN2000A-06-63, CDN2000A-06-32

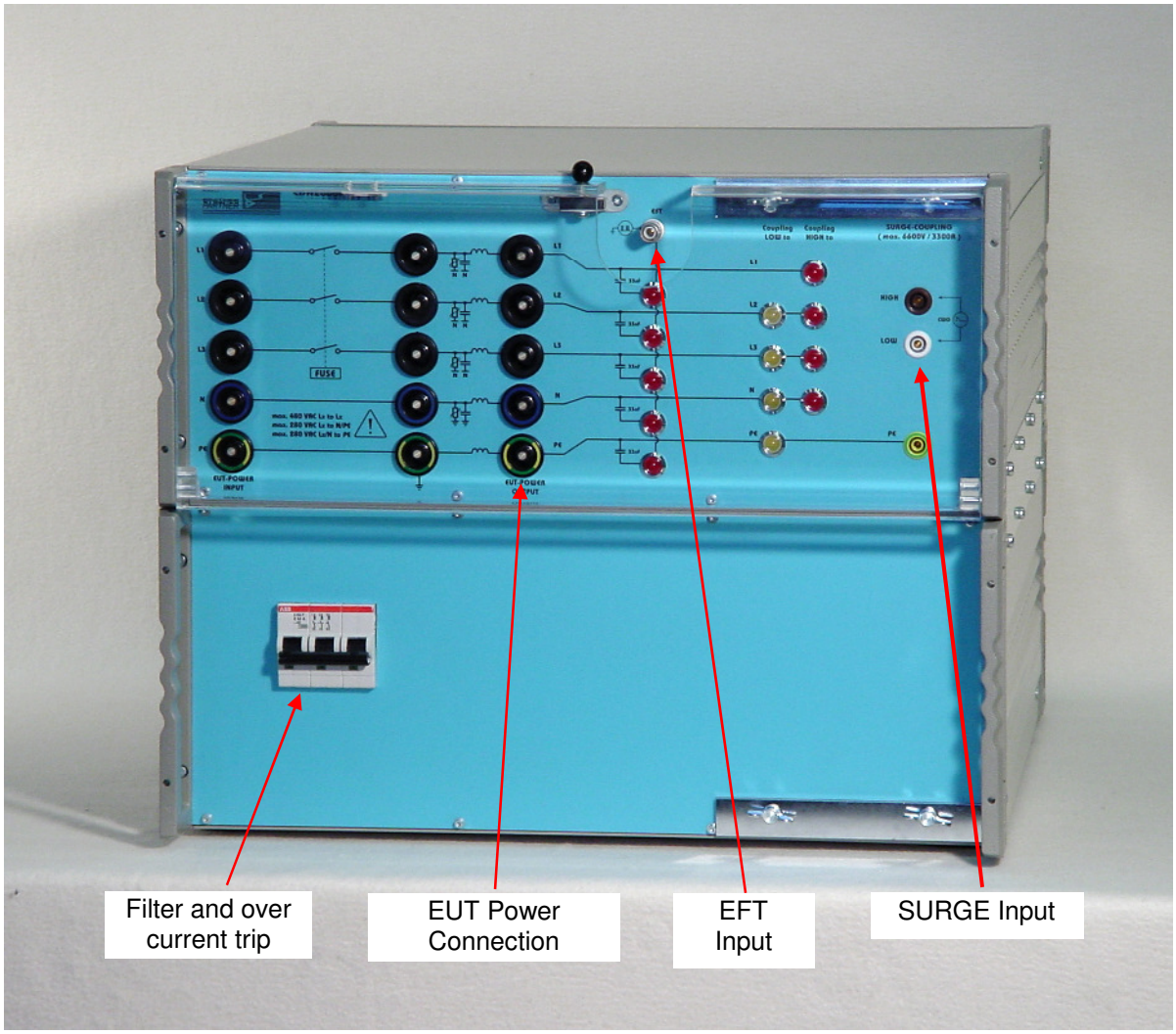
Up to 12 kV 1,2/50 µs the following CDN can be used:
CDNMIG-12-32

2.3 Standards, applications

IEC 61000-4-5, EN 61000-4-5	Electromagnetic compatibility (EMC) - Part 4 Testing and measuring techniques - Section 5: Surge immunity test.
ANSI / IEEE 62.45	Guide on surge testing for equipment connected to low voltage AC power circuit
IEC 61000-4-4, EN 61000-4-4	Electromagnetic compatibility (EMC) - Part 4 Testing and measuring techniques - Section 4: Electric Fast Transient test

3 CDN circuit, wave shapes definition

The power line input and outputs are located on the front of the CDN2000. As an example the CDN2000A-06-63 is shown in the picture below.

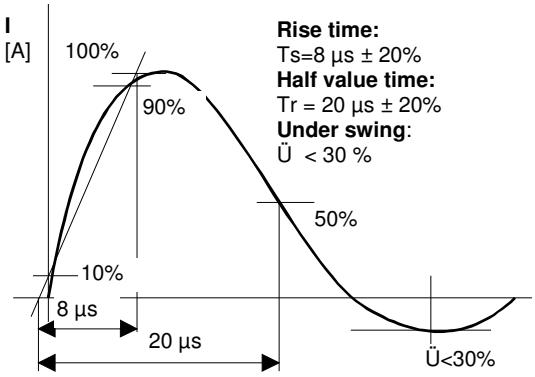


On the left hand side are the power line inputs and in the middle the power line outputs. On the right hand side the SURGE coupling is located.

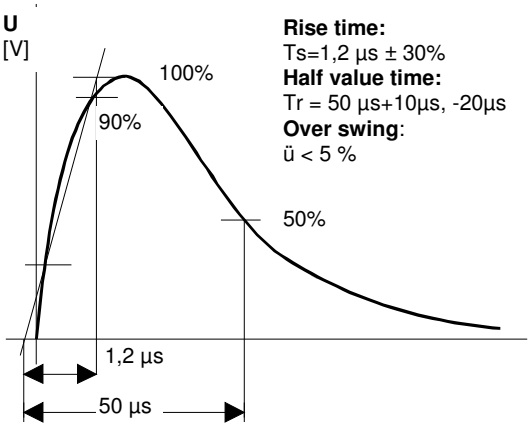
All coupling paths are switched automatically from the controlling generator.

3.1 Wave shape definition

Combination Wave Generator

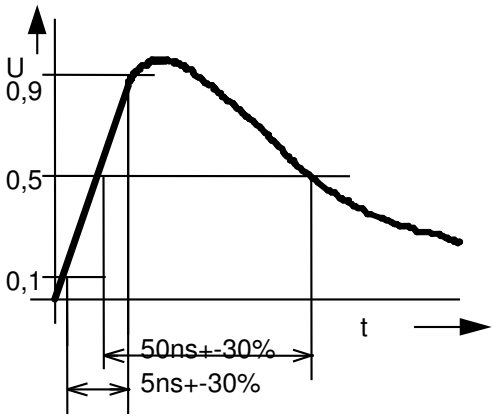


Current into short circuit

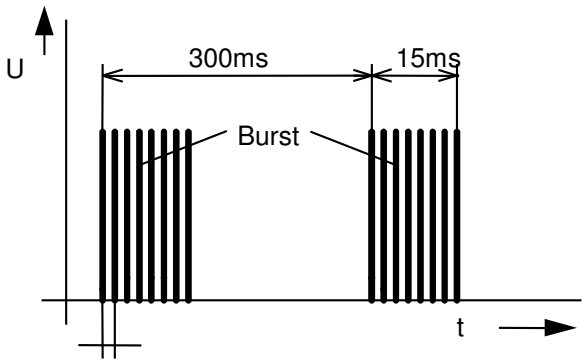


Voltage at no load

Electric Fast Transient (EFT)



EFT Pulse into 50 ohm



EFT Event

3.2 Mechanical dimensions, climatic conditions

Housing	[mm] l x b x h	520 x 450 x 365
Weight	[kg]	max. 29
Inputs and outputs	on the front panel	

Environmental condition:		
Temperature range	°C	0 to 35 °
Humidity	rh %	25 to 80%
Pressure	kPa	86 to 106

3.3 Technical data

3.3.1 Impulse Parameters

Coupling:	Connection between the TESTER and the supply lines of the EUT.	
SURGE	Automatically coupling path selection	In the display of the generators
IEC 61000-4-5 Ed.2	L1-PE, L2-PE, L3-PE, N-PE	10 Ohm 9µF plus 2 Ohm generator
	L1-L2, L2-L3, L1-L3, L1-N, L2-N, L3-N	2 Ohm Generator plus 18µF
Maximum voltage	6000 V	Wave form 1.2/50µs
Damping	complies with IEC 61000-4-5 Ed.2	
EFT:		
IEC 61000-4-4 Ed.2	L1+L2+L3+N+PE - Ref. GND	Coupling capacitance 33 nF
damping	complies with IEC 61000-4-4 Ed.2	

De-coupling:		
SURGE	complies with IEC 61000-4-5 Ed.2	
EFT	complies with IEC 61000-4-4 Ed.2	

3.3.2 EUT Power AC

Mains supply EUT/ac:		
Mains voltage	Phase - Phase	480 V max.
	Phase - Null	280 V max.
	Phase - Earth	280 V max.
Synchronisation	Automatically with coupling path selection. See also chapter 5.1 Synchronisation	
Nominal current	per phase	63 A
Over-current trip	constant current: Short time	Trip at 63 A 250 A to 500 A magnetic trip <1s

3.3.3 EUT Power DC

Supply EUT/dc	**with over current trip connected**	
Supply voltage	Phase - Phase or Phase - Null	110V
Nominal current	L to L/N L1//L2 to L3//N	30 A 60 A

The operator is responsible for the correct d.c. voltage /current fuse, when the over current trip is bypassed.

Supply EUT/dc	**with over current trip bypassed**	
Supply voltage	Line to Line Line to Ground	600V 300V
Nominal current	L to L/N L1//L2 to L3//N	30 A 60 A

3.4 Use with IMU3000 or IMU4000

When using CDN2000A-06-63 with IMU3000 or IMU4000, one ADAPTER TRA-ACC (106427) is required.

3.1 Accessories to CDN2000A-06-63

ADAPTER BOX TRA-ACC is required to connect CDN2000A-06-63 to an IMU3000 or IMU4000 instrument.