

CNI 503X SERIES

COMBINED 3-PHASE COUPLING/DECOUPLING NETWORKS FOR BURST AND SURGE TESTING UP TO 10KV



FOR TESTS ACCORDING TO ...

- › ANSI/IEEE C62.41
- › EN 61000-4-12
- › EN 61000-4-4
- › EN 61000-4-5
- › EN 61000-6-1
- › EN 61000-6-2
- › EN 61543
- › IEC 60601-1-2
- › IEC 61000-4-12
- › IEC 61000-4-4
- › IEC 61000-4-5
- › IEC 61008-1
- › IEC 61009-1
- › IEC 61326
- › IEC 61850-3
- › ITU-T K.20
- › ITU-T K.21
- › ITU-T K.45

COUPLING/DECOUPLING NETWORKS FOR EFT/BURST AND SURGE

The three-phase coupling/decoupling networks of the CNI 503x series are used to couple EFT/Burst pulses and Surge pulses on DC-lines or to three-phase (4-wire or 5-wire supply lines) mains supply systems for voltages up to 1,000VDC / 3x690VAC. This includes the more and more common testing of inverters used in the area of renewable energies (e.g. photovoltaic systems, wind power stations, electric cars).

Within the range of EM TEST coupling/decoupling networks we offer different models for test voltages from 5kV up to 10kV with DUT currents of 16A, 32A, 63A, 100A and 200A for the various test requirements and equipment configuration.

HIGHLIGHTS

- › Combined coupler for EFT/Burst and Surge
- › Surge as per ANSI/IEEE C62.41 (models CNI 503Bx only, other couplers on request)
- › LEDs indicate active mode and coupling
- › Automatic selection of Surge impedance
- › Fully remote controlled by EM TEST generators

APPLICATION AREAS

- | | |
|---|--|
|  INDUSTRY |  RESIDENTIAL |
|  MEDICAL |  RENEWABLE ENERGY |
|  BROADCAST | |
|  TELECOM | |

TECHNICAL DETAILS

BENEFITS

The CNI 503x-series coupling/decoupling networks are built fully complying to the standard requirements of EN/IEC 61000-4-4 and EN/IEC 61000-4-5. Residual voltage levels are carefully considered as well as the value of the decoupling inductors in order to meet the requirements with regard to voltage drop at the rated current of each type of CDN. Apart from the coverage of the EN/IEC 61000-4-5 standard the CNI 503Bx series also fully complies with the surge test requirements outlined in ANSI/IEEE C62.41.

Being fully controlled by the related generators couplings of the CNI 503x are set automatically as selected for the test (either by manual operation or via software). When performing surge tests the generators will automatically set the required source impedance depending on the standard and the coupling mode.

For CNI 503 coupling networks for DC EUT-supply an optional TEST ON function with a contactor up to 1,500 VDC / >100 A capacity is available.

MODEL SERIES

AVAILABLE CNI 503X-MODELS

CNI 503Ax series	3x480V, according to - EN/IEC 61000-4-4 and - EN/IEC 61000-4-5
CNI 503A Sx series	3x690V, according to - EN/IEC 61000-4-4 and - EN/IEC 61000-4-5
CNI 503Bx series	3x480V, according to - EN/IEC 61000-4-4 and - EN/IEC 61000-4-5 and - ANSI/IEEE C62.41
CNI 503B Sx series	3x690V, 3x480V, according to - EN/IEC 61000-4-4 and - EN/IEC 61000-4-5 and - ANSI/IEEE C62.41

TECHNICAL DETAILS

MODEL OVERVIEW

AVAILABLE CNI 503X-MODELS UP TO 5.5KV

CNI 503A	3x480V, 16A AC
CNI 503A.1	3x690V, 16A AC
CNI 503A1.1	3x480V, 16A AC Railway EN 50121-4
CNI 503A2	3x480V, 32A AC
CNI 503A2.5	3x480V, 32A AC Railway EN 50121-4
CNI 503A2.6	3x480V, 32A AC 1,000V, 32A DC 500V, 150A DC, TEST ON function (DC)
CNI 503A2.1	3x690V, 32A AC
CNI 503A3	3x480V, 63A AC
CNI 503A3.2	3x690V, 63A AC
CNI 503A4.1	3x480V, 100A AC Railway EN 50121-4
CNI 503A4.2	3x690V, 100A AC
CNI 503A S23	3x690V, 200A AC 1,000V, 200A DC

AVAILABLE CNI 503X-MODELS UP TO 7KV

CNI 503B5	3x480V, 16A AC
CNI 503B S1	3x690V, 16A AC
CNI 503B7	3x480V, 32A AC
CNI 503B7.6	3x480V, 32A AC Railway EN 50121-4
CNI 503B7.3	3x480V, 32A AC, 1,000V, 32A DC
CNI 503B S2	3x690V, 32A AC
CNI 503B7.5	3x690V, 32A AC, 1,000V, 32A DC, TEST ON function (DC)
CNI 503B8	3x480V, 63A AC
CNI 503B S3	3x690V, 63A AC
CNI 503B9	3x480V, 100A AC

MODEL OVERVIEW

AVAILABLE CNI 503X-MODELS UP TO 7KV

CNI 503B9.2	3x480V, 100A AC, 1,000V, 100A DC
CNI 503B9.6	3x480V, 100A AC, 1,000V, 100A DC, TEST ON function (DC)
CNI 503B S4	3x690V, 100A AC
CNI 503B9.4	3x690V, 100A AC, 1,000V, 100A DC
CNI 503B S12	3x480V, 200A AC, 1,000V, 200A DC
CNI 503B S14	3x690V, 200A AC, 1,000V, 200A DC

AVAILABLE CNI 503X-MODELS UP TO 8KV

CNI 503A10	3x480V, 16A AC
CNI 503A12	3x480V, 32A AC
CNI 503A13	3x480V, 63A AC
CNI 503A14	3x480V, 100A AC

AVAILABLE CNI 503X-MODELS UP TO 10KV

CNI 503A16	3x480V, 16A AC
CNI 503A18	3x480V, 32A AC
CNI 503A19	3x480V, 63A AC
CNI 503A20	3x480V, 100A AC

TECHNICAL DETAILS

TECHNICAL DETAILS (5.5KV MODELS)

CNI 503A, 5.5KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 5.5kV Surge up to 5kV
EUT supply	3x480V, 16A AC
Dimensions	Size: 19" / 6 HU Weight: approx. 25kg

CNI 503A.1, 5.5KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 5.5kV Surge up to 5kV
EUT supply	3x690V, 16A AC
Dimensions	Size: 19" / 6 HU Weight: approx. 27kg

CNI 503A1.1, 5.5KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 5.5kV Surge up to 5kV
EN 50121-x couplings	manual selectable for: 42 ohm, 0.5 uF, 12 ohm, 9 uF
EUT supply	3x480V, 16A AC
Dimensions	Size: 19" / 6 HU, D: 542 mm Weight: 22.75 kg

CNI 503A2, 5.5KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 5.5kV Surge up to 5kV
EUT supply	3x480V, 32A AC
Dimensions	Size: 19" / 6 HU Weight: approx. 35kg

TECHNICAL DETAILS (5.5KV MODELS)

CNI 503A2.5, 5.5KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 5.5kV Surge up to 5kV
EN 50121-x couplings	manual selectable for: 42 ohm, 0.5 uF, 12 ohm, 9 uF
EUT supply	3x480V, 32A AC
Dimensions	Size: 19" / 6 HU, D: 542 mm Weight: 32.85 kg

CNI 503A2.6, 5.5KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 5.5kV Surge up to 5kV TEST ON function
EUT supply	3x480V, 32A AC 1,000V, 32A DC 500V, 150A DC
Dimensions	Size: 19" / 34 HU Rack / 800mm Weight: approx. 400kg
Application	Suitable for testing Hybrid and E-vehicles

CNI 503A2.1, 5.5KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 5.5kV Surge up to 5kV
EUT supply	3x690V, 32A AC
Dimensions	Size: 19" / 6 HU Weight: approx. 37kg

TECHNICAL DETAILS

TECHNICAL DETAILS (5.5KV MODELS)

CNI 503A3, 5.5KV	
Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 5.5kV Surge up to 5kV
EUT supply	3x480V, 63A AC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 100kg

CNI 503A3.2, 5.5KV	
Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 5.5kV Surge up to 5kV
EUT supply	3x690V, 63A AC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 100kg

CNI 503A4.1, 5.5KV	
Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 5.5kV Surge up to 5kV
EN 50121-x couplings	manual selectable for: 42 ohm, 0.5 uF, 12 ohm, 9 uF
EUT supply	3x480V, 100A AC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 30 kg

TECHNICAL DETAILS (5.5KV MODELS)

CNI 503A4.2, 5.5KV	
Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 5.5kV Surge up to 5kV
EUT supply	3x690V, 100A AC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 100kg

CNI 503A S23, 5.5KV	
Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 5.5kV Surge up to 5kV
EUT supply	3x690V, 200A AC 1,000V, 200A DC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 150kg

TECHNICAL DETAILS

TECHNICAL DETAILS (7KV MODELS)

CNI 503B5, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV Surge up to 7kV
EUT supply	3x480V, 16A AC
Dimensions	Size: 19" / 6 HU Weight: approx. 25kg

CNI 503B S1, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV Surge up to 7kV
EUT supply	3x690V, 16A AC
Dimensions	Size: 19" / 6 HU Weight: approx. 27kg

CNI 503B7, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV Surge up to 7kV
EUT supply	3x480V, 32A AC
Dimensions	Size: 19" / 6 HU Weight: approx. 35kg

CNI 503B7.6, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 5.5kV Surge up to 5kV
EN 50121-x couplings	manual selectable for: 42 ohm, 0.5 uF, 12 ohm, 9 uF
EUT supply	3x480V, 32A AC
Dimensions	Size: 19" / 6 HU, D: 542 mm Weight: approx. 42.0 kg

TECHNICAL DETAILS (7KV MODELS)

CNI 503B7.3, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV Surge up to 7kV
EUT supply	3x480V, 32A AC 1,000V, 32A DC
Dimensions	Size: 19" / 6 HU *) Weight: approx. 35kg
*) requires rack mounting	

CNI 503B7.5, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV, Surge up to 7kV, TEST ON function for DC, connector for external warning lamp
EUT supply	3x690V, 32A AC, 1,000V, 32A DC
Dimensions	Size: 19" / 6 HU *) Weight: approx. 35kg
*) requires rack mounting	

CNI 503B S2, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV, Surge up to 7kV,
EUT supply	3x690V, 32A AC
Dimensions	Size: 19" / 6 HU Weight: approx. 37kg

TECHNICAL DETAILS

TECHNICAL DETAILS (7KV MODELS)

CNI 503B8, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV, Surge up to 7kV
EUT supply	3x480V, 63A AC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 100kg

CNI 503B S3, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV, Surge up to 7kV
EUT supply	3x690V, 63A AC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 100kg

CNI 503B9, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV, Surge up to 7kV
EUT supply	3x480V, 100A AC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 100kg

CNI 503B9.2, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV, Surge up to 7kV
EUT supply	3x480V, 100A AC, 1,000V, 100A DC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 100kg

TECHNICAL DETAILS (7KV MODELS)

CNI 503B9.4, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV, Surge up to 7kV with connector for external warning lamp
EUT supply	3x690V, 100A AC, 1,000V, 100A DC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 100kg

CNI 503B9.6, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV, Surge up to 7kV, TEST ON function for DC, connector for external warning lamp
EUT supply	3x480V, 100A AC, 1,000V, 100A DC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 100kg
Application	Suitable for testing Hybrid and E-vehicles

CNI 503B S4, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV, Surge up to 7kV
EUT supply	3x690V, 100A AC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 100kg

TECHNICAL DETAILS

TECHNICAL DETAILS (7KV MODELS)

CNI 503B S12, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV,
EUT supply	3x480V, 200A AC, 1,000V, 200A DC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 230kg

CNI 503B S14, 7KV

Three-phase CDN	according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and ANSI/IEEE C62.41 for Burst up to 5.5kV,
EUT supply	3x690V, 200A AC, 1,000V, 200A DC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 250kg

TECHNICAL DETAILS (8KV MODELS)

CNI 503A10, 8KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 7kV, Surge up to 8kV
EUT supply	3x480V, 16A AC
Dimensions	Size: 19" / 6 HU Weight: approx. 30kg

CNI 503A12, 8KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 7kV, Surge up to 8kV
EUT supply	3x480V, 32A AC
Dimensions	Size: 19" / 6 HU Weight: approx. 40kg

CNI 503A13, 8KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 7kV, Surge up to 8kV
EUT supply	3x480V, 63A AC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 100kg

CNI 503A14, 8KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 7kV, Surge up to 8kV
EUT supply	3x480V, 100A AC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 100kg

TECHNICAL DETAILS

TECHNICAL DETAILS (10KV MODELS)

CNI 503A16, 10KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 7kV, Surge up to 10kV
EUT supply	3x480V, 16A AC
Dimensions	Size: 19" / 6 HU Weight: approx. 30kg

CNI 503A18, 10KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 7kV, Surge up to 10kV
EUT supply	3x480V, 32A AC
Dimensions	Size: 19" / 6 HU Weight: approx. 40kg

CNI 503A19, 10KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 7kV, Surge up to 10kV
EUT supply	3x480V, 63A AC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 100kg

CNI 503A20, 10KV

Three-phase CDN	according to EN/IEC 61000-4-4 and EN/IEC 61000-4-5 for Burst up to 7kV, Surge up to 10kV
EUT supply	3x480V, 100A AC
Dimensions	Size: 19" / height depending on the size of the rack Weight: approx. 100kg

GENERAL DATA

COUPLING MODES

IEC 61000-4-4	Line(s) to Reference Ground; all combinations
IEC 61000-4-5	Line to Line with a 2ohm source impedance Line(s) to PE with a 12ohm source impedance
ANSI/IEEE C62.4	(supporting models only) Surge coupling with a 2ohm source impedance for all lines

OPTIONS

Note:	All CNI 503x models for currents of 63A and 100A are designed for rack mounting. The rack is offered based on the desired configuration. The following racks are available:
MRAC 20 IEC	Mini rack 19", 20HU for CNI 503x only
MRAC 25 IEC	Mini rack 19", 25HU for CNI 503x and one generator 3HU (e.g. UCS 500N5)
MRAC 34 IEC	Rack 19", 34HU for CNI 503x and one generator 6HU (e.g. UCS 500N7) or several standalone generators
MRAC 38 IEC	Rack 19", 38HU for CNI 503x and one generator 6HU (e.g. UCS 500N7) or several standalone generators

OTHER MODELS

	Other models available on request for mains supply voltages up to 1,000V and current exceeding 100A
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Information about scope of delivery, visual design and technical data correspond with the state of development at time of release. Subject to change without further notice.