

COUPLING NX7 SERIES

COMBINED 3-PHASE COUPLING/DECOUPLING NETWORKS FOR BURST, SURGE AND RING WAVE TESTING UP TO 7.0 KV



FOR TESTS ACCORDING TO ...

- › EN 50121
- › EN 50121-3-2
- › EN 50121-4
- › EN 50121-5
- › 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, SURGE AND RING WAVE







The three-phase coupling/decoupling networks of the coupling NX series are used to couple EFT/Burst-, Surge- and Ring wave pulses on DC-lines or to three-phase (4-wire or 5-wire) mains supply systems for voltages up to 1,000 VDC / 3 x 690 VAC. 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).

Full compliance over a wide range of EUT current, within 16 A , 32 A, 63 A, 125 A and 200 A settings. Higher current ratings on request.

HIGHLIGHTS

- › **Automatic coupler for Burst and Surge**
- › **Model with range selection 32, 63, 125 and 200 A**
- › **Meet requirements for 3x690 VAC and 1,000 VDC**
- › **LEDs indicate active mode and coupling**
- › **Automatic selection of Surge impedance**
- › **Fully remote controlled by EM TEST compact NX**
- › **Option for railway application as per EN 50121**

APPLICATION AREAS

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

TECHNICAL DETAILS

BENEFITS

The coupling NX-series coupling/decoupling networks are built fully compliant to the standard requirements of EN/IEC 61000-4-4, EN/IEC 61000-4-5 and EN/IEC 61000-4-12. 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.

Being fully controlled by the related generators, couplings of the coupling NX 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.

Models are available with multiple current ranges with waveshape specification that are fully compliant to IEC 61000-4-5. in each selectable EUT current range. Offering the advantage that nearly all EUT's can be tested with just one CDN!



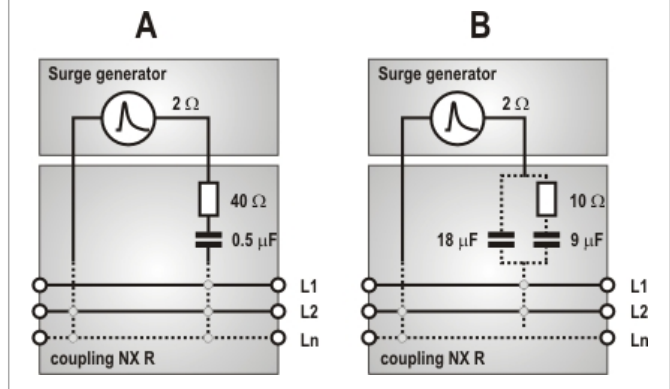
COUPLER FOR RAILWAY APPLICATION

For surge testing according the railway standard EN 50121 an additional coupling RC impedance of 0.5 μF and 40 ohm is required.

This special impedance network is already implemented in the 3-phase couplers for railway application. This railway coupling is automatic offeed in the menu of the NX generators and the iec.control software.

Figure A shows the coupling with the special railway coupling impedance module of 0.5 μF / 40 ohm.

Figure B shows the standard surge coupling with 18 μF for line to line coupling and the coupling impedance for line to ground coupling using 9 μF / 10 ohm.



TECHNICAL DETAILS

MODEL OVERVIEW

GENERAL INFORMATION FOR ALL CDN

| | |
|----------------|--|
| Burst | EN/IEC 61000-4-4, up to 5.5 kV |
| Surge | EN/IEC 61000-4-5, up to 7 kV |
| Ring wave | EN/IEC 61000-4-12, up to 7 kV |
| *Current range | <32 A: 0 A to 32 A 63 A: >32 A to 63 A 125 A: >63 A to 125 A 200 A: >125 A to 200 A |

MODELS FOR 3 X 480 VAC (P-P)

| Current range | Model |
|------------------------|---------------------------------|
| 16 A | coupling NX7 bsr-3-480-16 |
| 32 A | coupling NX7 bsr-3-480-32 |
| | with additional current ranges* |
| <32, 63 A | coupling NX7 bsr-3-480-63.1 |
| <32, 63, 125 A | coupling NX7 bsr-3-480-125.1 |
| <32, 63, 125 and 200 A | coupling NX7 bsr-3-480-200.1 |

MODELS FOR 3 X 690 VAC (P-P)

| Current range | Model |
|------------------------|---------------------------------|
| 16 A | coupling NX7 bsr-3-690-16 |
| 32 A | coupling NX7 bsr-3-690-32 |
| | with additional current ranges* |
| <32, 63 A | coupling NX7 bsr-3-690-63.1 |
| <32, 63, 125 A | coupling NX7 bsr-3-690-125.1 |
| <32, 63, 125 and 200 A | coupling NX7 bsr-3-690-200.1 |

MODELS FOR 3 X 690 VAC (P-P); 1,000 VDC

| Current range | Model |
|------------------------|---------------------------------|
| 16 A | coupling NX7 bsr-3-690-16.2 |
| 32 A | coupling NX7 bsr-3-690-32.2 |
| | with additional current ranges* |
| <32, 63 A | coupling NX7 bsr-3-690-63.3 |
| <32, 63, 125 A | coupling NX7 bsr-3-690-125.3 |
| <32, 63, 125 and 200 A | coupling NX7 bsr-3-690-200.3 |

MODELS FOR RAILWAY APPLICATION

GENERAL INFORMATION FOR ALL RAILWAY CDN

| | |
|-----------------|---|
| Coupling | built in module with 0.5 μ F / 40 Ohm for railway applications according EN 50121; |
| Burst | EN/IEC 61000-4-4, up to 5.5 kV |
| Surge | EN/IEC 61000-4-5, up to 7 kV |
| Ring wave | EN/IEC 61000-4-12, up to 7 kV |
| *Current ranges | <32 A: 0 A to 32 A 63 A: >32 A to 63 A 125 A: >63 A to 125 A 200 A: >125 A to 200 A |

MODELS FOR 3 X 480 VAC (P-P)

| Current range | Model |
|------------------------|---------------------------------|
| 16 A | coupling NX7-R bsr-3-480-16 |
| 32 A | coupling NX7-R bsr-3-480-32 |
| | with additional current ranges* |
| <32, 63 A | coupling NX7-R bsr-3-480-63.1 |
| <32, 63, 125 A | coupling NX7-R bsr-3-480-125.1 |
| <32, 63, 125 and 200 A | coupling NX7-R bsr-3-480-200.1 |

MODELS FOR 3 X 690 VAC (P-P)

| Current range | Models with additional current ranges* |
|------------------------|--|
| <32, 63 A | coupling NX7-R bsr-3-690-63.1 |
| <32, 63, 125 A | coupling NX7-R bsr-3-690-125.1 |
| <32, 63, 125 and 200 A | coupling NX7-R bsr-3-690-200.1 |

MODELS FOR 3 X 690 VAC (P-P); 1,000 VDC

| Current range | Models with additional current ranges* |
|------------------------|--|
| <32, 63 A | coupling NX7-R bsr-3-690-63.3 |
| <32, 63, 125 A | coupling NX7-R bsr-3-690-125.3 |
| <32, 63, 125 and 200 A | coupling NX7-R bsr-3-690-200.3 |

TECHNICAL DETAILS
RAILWAY COUPLER FOR MANUAL APPLICATION

| | |
|-------------|--|
| PCN 7-R s-1 | Manual Coupling network, 7 kV surge pulse, EUT max. 690 VAC Coupling: 0.5 uF / 40 Ohm, Decoupling: Generator internal CDN |
|-------------|--|

TECHNICAL DETAILS (480 V MODELS)
COUPLING NX7 BSR-3-480-16

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 480 V, 16 A, 50/60 Hz |
| Connectors | IN : MC Safety plug 4 mm, OUT: MC Safety plug 4 mm |
| Dimensions | Size: 19" / 6 HU, 448 x 286 x 500 mm, Weight: approx. 30 kg |

COUPLING NX7 BSR-3-480-32

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 480 V, 32 A, 50/60 Hz |
| Connectors | IN : MC Safety plug 4 mm, OUT: MC Safety plug 4 mm |
| Dimensions | Size: 19" / 6 HU, 448 x 286 x 500 mm, Weight: approx. 45 kg |

COUPLING NX7 BSR-3-480-63

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 480 V, 63 A, 50/60 Hz |
| Connectors | IN : CEE 480/63, OUT: MC Safety plug 6 mm |
| Dimensions | Size: RAC 25 IEC included, Weight: approx. 100 kg |

COUPLING NX7 BSR-3-480-125

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 480 V, 125 A, 50/60 Hz |
| Connectors | IN : CEE 480/125, OUT: MC Safety plug 6 mm |
| Dimensions | Size: RAC 25 IEC included, Weight: approx. 200 kg |

TECHNICAL DETAILS
TECHNICAL DETAILS (480 V MODELS WITH ADDITIONAL RANGES)
COUPLING NX7 BSR-3-480-63.1

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 480 V, 63 A, 50/60 Hz |
| Current ranges* | <32 A, 63 A |
| Connectors | IN : CEE 480/63, OUT: MC Safety plug 6 mm |
| Dimensions | Size: RAC 34 IEC included, Weight: approx. 100 kg |

COUPLING NX7 BSR-3-480-125.1

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 480 V, 125 A, 50/60 Hz |
| Current ranges* | <32 A, 63 A, 125 A |
| Connectors | IN : CEE 480/125, OUT: MC Safety plug 6 mm |
| Dimensions | Size: RAC 34 IEC included, Weight: approx. 180 kg |

COUPLING NX7 BSR-3-480-200.1

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 480 V, 200 A, 50/60 Hz |
| Current ranges* | <32 A, 63 A, 125 A, 200 A |
| Connectors | IN : MC Safety plug 10 mm, OUT: MC Safety plug 10 mm |
| Dimensions | Size: RAC 34 IEC included, Weight: approx. 200 kg |

GENERATORS FOR 690 V CDN'S
GENERATOR REQUIREMENTS FOR 690 V MODEL CDN'S

| | |
|-------------------------|--|
| AC voltage requirements | Coupling/decoupling networks for 3 x 690 VAC require a transient generator rated for 400 VAC voltage. |
| compact NX series | Suitable generators for 3 x 690 VAC CDN's: - compact NX7 bsp-1-400-32, - compact NX7 bspr-1-400-32, - compact NX7 bsprt-1-400-32 - compact NX5 bspt-1-400-32 |

TECHNICAL DETAILS (690 V MODELS)
COUPLING NX7 BSR-3-690-16

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 690 V, 16 A AC |
| Connectors | IN : MC Safety plug 4 mm, OUT: MC Safety plug 4 mm |
| Dimensions | Size: 19" / 6 HU Weight: approx. 30 kg |

COUPLING NX7 BSR-3-690-32

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 690 V, 32 A, 50/60 Hz |
| Connectors | IN : MC Safety plug 4 mm, OUT: MC Safety plug 4 mm |
| Dimensions | Size: 19" / 6 HU Weight: approx. 30 kg |

TECHNICAL DETAILS

TECHNICAL DETAILS (690 V MODELS WITH ADDITIONAL RANGES)

COUPLING NX7 BSR-3-690-63.1

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 690 V, 63 A, 50/60 Hz |
| Current ranges* | <32 A, 63 A |
| Connectors | N : CEE 690/63, OUT: MC Safety plug 6 mm |
| Dimensions | Size: RAC 34 IEC included, Weight: approx. 120 kg |

COUPLING NX7 BSR-3-690-125.1

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 690 V, 125 A, 50/60 Hz |
| Current ranges* | <32 A, 63 A, 125 A |
| Connectors | N : CEE 690/125, OUT: MC Safety plug 6 mm |
| Dimensions | Size: RAC 34 IEC included, Weight: approx. 190 kg |

COUPLING NX7 BSR-3-690-200.1

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 690 V, 200 A, 50/60 Hz |
| Current ranges* | <32 A, 63 A, 125 A, 200 A |
| Connectors | IN : MC Safety plug 10 mm, OUT: MC Safety plug 10 mm |
| Dimensions | Size: RAC 34 IEC included, Weight: approx. 220 kg |

TECHNICAL DETAILS (690 VAC AND 1,000 VDC MODELS)

COUPLING NX7 BSR-3-690-16.2

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 690 V, 16 A, 50/60 Hz, 1,000 VDC, 16 A |
| Connectors | IN (AC): CEE 690/16, IN (DC): MC Safety plug 4 mm, OUT: MC Safety plug 4 mm |
| Dimensions | Size: RAC 34 IEC included, Weight: approx. 120 kg |

COUPLING NX7 BSR-3-690-32.2

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 690 V, 32 A, 50/60 Hz 1,000 VDC, 32 A |
| Connectors | IN (AC): CEE 690/32, IN (DC): MC Safety plug 4 mm, OUT: MC Safety plug 4 mm |
| Dimensions | Size: RAC 34 IEC included, Weight: approx. 140 kg |

TECHNICAL DETAILS

TECHNICAL DETAILS (690 VAC AND 1,000 VDC MODELS WITH ADDITIONAL RANGES)

COUPLING NX7 BSR-3-690-63.3

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 690 V, 63 A, 50/60 Hz 1,000 VDC, 63 A |
| Connectors | IN (AC): CEE 690/63, IN (DC): MC Safety plug 6 mm, OUT: MC Safety plug 6 mm |
| Current ranges* | <32 A, 63 A |
| Dimensions | Size: RAC 34 IEC included, Weight: approx. 180 kg |

COUPLING NX7 BSR-3-690-125.3

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 690 V, 125 A, 50/60 Hz 1,000 VDC, 125 A |
| Connectors | IN (AC): CEE 690/125, IN (DC): MC Safety plug 6 mm, OUT: MC Safety plug 6 mm |
| Current ranges* | <32 A, 63 A, 125 A |
| Dimensions | Size: RAC 34 IEC included, Weight: approx. 250 kg |

COUPLING NX7 BSR-3-690-200.3

| | |
|-----------------|--|
| Three-phase CDN | according to EN/IEC 61000-4-4, EN/IEC 61000-4-5 and -4-12 for Burst up to 5.5 kV Surge and Ring wave up to 7 kV |
| EUT supply | 3 x 690 V, 200 A, 50/60 Hz, 1,000 VDC, 200 A |
| Connectors | IN (AC): MC Safety plug 10 mm, IN (DC): MC Safety plug 10 mm, OUT: MC Safety plug 10 mm |
| Current ranges* | <32 A, 63 A, 125 A, 200 A |
| Dimensions | Size: RAC 34 IEC included, Weight: approx. 290 kg |

TECHNICAL DETAILS FOR MODEL FOR DC APPLICATION

COUPLING FOR DC APPLICATION

| | |
|---------------------------------|--|
| coupling NX7-DC bs-1-1000-32 | 1-phase 7 kV coupling/decoupling network for the compact NX7 series, Burst up to 5.5 kV, Surge and Ring wave up to 7 kV, Coupling DC+, DC- and PE (all combinations), Nominal voltage 1.000 VDC, Nominal current 32 A, With TEST ON function |
|---------------------------------|--|

OPTIONS

OPTIONS

| | |
|------------|--|
| RAC 34 IEC | Rack 19", 34 HU, 1717 x 553 x 800 mm (HxWxD), for coupling NX and one generator (e.g. compact NX 7) or several standalone generators |
| RAC 38 IEC | Rack 19", 38 HU, 1895 x 553 x 800 mm (HxWxD), for coupling NX for and one generator (e.g. compact NX 7) or several standalone generators |

SAFETY OPTIONS

| | |
|--------|---|
| ESS 1 | Emergency switch (short circuit), cable 3 m |
| SWL AD | Safety warning lamp adapter, voltage free contact |
| SWL | Safety warning lamp, red / green requires ext supply 24 VDC, 1,6 A |

TECHNICAL DETAILS

GENERAL DATA

INTERFACES

| | |
|----------------------|--|
| sys.link | 26 pin high density connector to control an external devices |
| connector EUT supply | 3 x 480 V, CEE plug, 16 A to 125 A, 3 x 690 V, CEE plug, 16 A to 63 A, plugs for all other current ratings |
| connector to EUT | up to 32 A: 4 mm safety plug, 63 A: 6 mm safety plug, 125 A: 6 mm safety plug, 200 A: 10 mm safety plug |

MAINS (CONTROL)

| | |
|----------------|---|
| Supply voltage | 85 V - 264 V |
| Frequency | 50/60 Hz |
| Power | approx. 75 W Standby: 100 mA |
| Fuses | 115 V: 2 x 4 A slow blow, 230 V: 2 x 2 A slow blow |

SAFETY

| | |
|------------------|----------------------------------|
| Safety standard | IEC/EN 61010 |
| Security circuit | Control input (24 VDC) |
| Warning lamp | Floating contact (max. 60 V/2 A) |

ENVIRONMENT

| | |
|----------------------|---|
| Temperature | 10 °C to 35 °C |
| Humidity | 30 % to 75 %, non condensing |
| Atmospheric pressure | 86 kPa (860 mbar) to 106 kPa (1,060 mbar) |

COMPETENCE WHEREVER YOU ARE



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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.