

CDNS

COUPLING / DECOUPLING NETWORKS ACCORDING TO IEC/EN 61000-4-6, IEC/EN 60945 AND CISPR 15/EN 55015



FOR TESTS ACCORDING TO ...

- › CISPR 15
- › EN 55015
- › EN 60945
- › EN 61000-4-6
- › IEC 60945
- › IEC 61000-4-6

COUPLING/DECOUPLING NETWORKS FOR CONDUCTED IMMUNITY TESTING







Immunity test to conducted disturbances, induced by radio-frequency fields according to the standards IEC/EN 61000-4-6 and IEC/EN 60945 introduce different types of coupling/decoupling networks according to the characteristics of the interconnection lines. Dedicated CDNs are also used as per CISPR 15 and EN 55015 for measurement of emission. A large range of appropriate coupling/decoupling networks as well as the necessary accessories for standard compliant levelling are available.

You'll find an overview of all available CDN's on the datasheet. Apart from the listed standard coupling/decoupling networks EM TEST also supply special or customised coupling/decoupling networks.

HIGHLIGHTS

- › **M-type CDNs for supply lines available up to 75A**
- › **S-type CDNs for shielded lines and different types of connectors (BNC, USB, SubD etc.)**
- › **T-type CDNs for telecom lines**
- › **AF-type CDNs for unbalanced lines**
- › **Calibration certificate included**

APPLICATION AREAS

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

TECHNICAL DETAILS

QUALITY BY LÜTHI

ALL EM TEST CDNS ARE MANUFACTURED BY LÜTHI

The Lüthi AG, headquartered in Frenkendorf, Switzerland, is one of the world's leading and best known manufacturers of coupling/decoupling networks for conducted immunity testing and emission measurement as well as of EMC measuring clamps and accessories.

In January 2010 the Lüthi AG became a part of the EM TEST Group. It will be independently operated and the Lüthi brand will remain. As one of the pioneers in the development of EMC measurement clamps, Lüthi AG products are chosen by the most important suppliers of EMC measuring systems world-wide.

**Lüthi**

a company of the em test group

TECHNICAL DETAILS

CDNS FOR MAINS SUPPLY LINES, TYPE M

16A M-TYPE CDN MODELS

| | |
|---------------|---|
| CDN-M1/16A | For Earth conductor - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 240V/16A - Frequency 150kHz - 230MHz |
| CDN-M2N | For 2 AC/DC supply lines - AE: IEC 320 connector - EUT: 4mm safety lab connectors - Voltage/current max. 240V/16A - Frequency 150kHz - 300MHz |
| CDN-M2-16A S2 | For 2 AC/DC supply lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 1,000V/16A - Frequency 150kHz - 80(230)MHz |
| CDN-M2 S2 | For 2 AC/DC supply lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 240V/16A - Frequency 10kHz - 80MHz |
| CDN-M2/400V | For 2 AC/DC supply lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 400V/16A - Frequency 150kHz - 80(230)MHz |
| CDN-M2/750V | For 2 AC/DC supply lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 750V/16A - Frequency 150kHz - 80(230)MHz |
| CDN-M2/M3N | For 2 or 3 AC/DC supply lines (switchable) - AE: IEC 320 connector - EUT: 4mm safety lab connectors - Voltage/current max. 240V/16A - Frequency 150kHz - 300MHz |
| CDN-M3N | For 3 AC/DC supply lines - AE: IEC 320 connector - EUT: 4mm safety lab connectors - Voltage/current max. 240V/16A - Frequency 150kHz - 300MHz |
| ... | |

16A M-TYPE CDN MODELS (CONTINUATION)

| | |
|--------------|--|
| CDN-M3 S3 | For 3 AC/DC supply lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 240V/16A - Frequency 10kHz - 80MHz |
| CDN-M3/400V | For 3 AC/DC supply lines (L,N,PE) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 400V/16A - Frequency 150kHz - 80 (230) MHz |
| CDN-M3/Delta | For 3 AC/DC supply lines (L1/L2/L3) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 3x400V/16A - Frequency 150kHz - 80 (230) MHz |
| CDN-M4/PE | For 4 AC/DC supply lines (L1/L2/L3/PE) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 3x400V/16A - Frequency 150kHz - 230MHz |
| CDN-M4/N | For 4 AC/DC supply lines (L1/L2/L3/N) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 3x400V/16A - Frequency 150kHz - 230MHz |
| CDN-M5/16A | For 5 AC/DC supply lines (L1/L2/L3/N/PE) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 3x400V/16A - Frequency 150kHz - 230MHz |

TECHNICAL DETAILS
32A M-TYPE CDN MODELS

| | |
|---------------|--|
| CDN-M1/32A | For Earth conductor - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 240V/32A - Frequency 150kHz - 230MHz |
| CDN-M1/32A S1 | For Earth conductor - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 1,000V/32A - Frequency 150kHz - 230MHz |
| CDN-M2N/32A | For 2 AC/DC supply lines (L & N) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 240V/32A - Frequency 150kHz - 230MHz |
| CDN-M2/32A S1 | For 2 AC/DC supply lines (L & N) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 1,000V/32A - Frequency 150kHz - 80 (230) MHz |
| CDN-M2/32A S2 | For 2 AC/DC supply lines (L & N) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 750V/32A - Frequency 150kHz - 80 (230) MHz |
| CDN-M3N/32A | For 3 AC/DC supply lines (L/N/PE) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 240V/32A - Frequency 150kHz - 230MHz |
| CDN-M3/32A S2 | For 3 AC/DC supply lines (L1/L2/L3) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 3x400V/32A - Frequency 150kHz - 80(230)MHz |
| CDN-M3/32A S3 | For 3 AC/DC supply lines (L/N/PE) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 750V/32A - Frequency 150kHz - 80MHz |
| ... | |

32A M-TYPE CDN MODELS (CONTINUATION)

| | |
|------------------|--|
| CDN-M4-PE/32A | For 4 AC/DC supply lines (L1/L2/L3/PE) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 3x400V/32A - Frequency 150kHz - 80MHz |
| CDN-M4-PE/32A S1 | For 4 AC/DC supply lines (L1/L2/L3/PE) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 3x750V/32A - Frequency 150kHz - 80MHz |
| CDN-M4-N/32A | For 4 AC/DC supply lines (L1/L2/L3/N) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 3x400V/32A - Frequency 150kHz - 80MHz |
| CDN-M4-N/32A S1 | For 4 AC/DC supply lines (L1/L2/L3/N) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 3x750V/32A - Frequency 150kHz - 80MHz |
| CDN-M5/32A | For 5 AC/DC supply lines (L1/L2/L3/N/PE) - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 3x400V/32A - Frequency 150kHz - 80MHz |

50A / 75A M-TYPE CDN MODELS

| | |
|------------|--|
| CDN-M2/50A | For 2 AC/DC supply lines (L & N) - AE: 6mm safety lab connectors - EUT: 6mm safety lab connectors - Voltage/current max. 240V/50A - Frequency 150kHz - 80MHz |
| CDN-M2/75A | For 2 AC/DC supply lines (L & N) - AE: 6mm safety lab connectors - EUT: 6mm safety lab connectors - Voltage/current max. 240V/75A - Frequency 150kHz - 80MHz |
| | Special M-type CDN's on request |

TECHNICAL DETAILS

CDNS FOR SHIELDED SIGNAL LINES, TYPE S

S-TYPE CDN MODELS

| | |
|---------------|---|
| CDN-S1-50 | For 1 screened line - AE/EUT: BNC-connectors 50ohm - Voltage/current max. 100V/0.25A - Frequency 150kHz - 230MHz |
| CDN-S1-50/N | For 1 screened line - AE/EUT: N-connectors 50ohm - Voltage/current max. 100V/0.25A - Frequency 150kHz - 230MHz |
| CDN-S1-50/SMA | For 1 screened line - AE/EUT: SMA-connectors 50ohm - Voltage/current max. 100V/0.25A - Frequency 150kHz - 230MHz |
| CDN-S1-75 | For 1 screened line - AE/EUT: BNC-connectors 75ohm - Voltage/current max. 100V/0.25A - Frequency 150kHz - 230MHz |
| CDN-S1-75/N | For 1 screened line - AE/EUT: N-connectors 75ohm - Voltage/current max. 100V/0.25A - Frequency 150kHz - 230MHz |
| CDN-S1-93/BNC | For 1 screened line - AE/EUT: BNC-connectors 93ohm - Voltage/current max. 100V/0.25A - Frequency 150kHz - 230MHz |
| CDN-S2 | For 2 screened lines - AE/EUT: BNC-connectors - Voltage/current max. 100V/0.25A - Frequency 150kHz - 230MHz |
| CDN-S4 | For 4 screened lines - AE/EUT: BNC-connectors - Voltage/current max. 100V/0.25A - Frequency 150kHz - 230MHz |
| CDN-S4-USB | For screened cables, 4 lines - AE/EUT: USB (A/A) connectors - Voltage/current max. 100V/1A - Frequency 150kHz - 230MHz |
| ... | |

S-TYPE CDN MODELS (CONTINUATION)

| | |
|---------------|--|
| CDN-S4/3A-BNC | For 4 screened lines - AE/EUT: BNC-connectors - Voltage/current max. 100V/3A - Frequency 150kHz - 230MHz |
| CDN-S8-RJ45 | For screened cables, 8 lines - AE/EUT: RJ45-connectors - Voltage/current max. 100V/1.5A - Frequency 150kHz - 230MHz |
| CDN-S9 | For screened cables, 9 lines - AE/EUT: Sub-D9 connectors - Voltage/current max. 250V/1.5A - Frequency 150kHz - 230MHz |
| CDN-S15 | For screened cables, 15 lines - AE/EUT: Sub-D15 connectors - Voltage/current max. 100V/1.5A - Frequency 150kHz - 230MHz |
| CDN-S15/VGA | For screened cables, 15 lines - AE/EUT: VGA-connector - Voltage/current max. 100V/0.25A - EUT Frequency 150kHz - 230MHz |
| CDN-S25 | For screened cables, 25 lines - AE/EUT: Sub-D25 connector - Voltage/current max. 250V/1.5A - Frequency 150kHz - 230MHz |
| CDN-S37 | For screened cables, 37 lines - AE/EUT: Sub-D37 connector - Voltage/current max. 100V/0.25A - Frequency 150kHz - 80(230)MHz |
| CDN-S50 | For screened cables, 50 lines - AE/EUT: Sub-D50 connector - Voltage/current max. 100V/0.25A - Frequency 150kHz - 80(230)MHz |
| | Special S-type CDN's on request |

TECHNICAL DETAILS

CDNS FOR UNSHIELDED SYMMETRICAL LINES, TYPE T

T-TYPE CDN MODELS

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|-------------|---|
| CDN-T2-RJ11 | For 2 unscreened balanced lines - AE: RJ11 & 4mm safety lab conn. - EUT: RJ11 & 4mm safety lab conn. - Voltage/current max. 100V/1.5A - Frequency 150kHz - 230MHz |
| CDN-T2 S1 | For 2 unscreened balanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/3A - Frequency 150kHz - 230MHz |
| CDN-T2/5A | For 2 unscreened balanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/5A - Frequency 150kHz - 80(230)MHz |
| CDN-T4 | For 4 unscreened balanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/1.5A - Frequency 150kHz - 230MHz |
| CDN-T4/XLR | For 4 unscreened balanced lines - AE: XLR-connectors - EUT: XLR-connectors - Voltage/current max. 100V/1.5A - Frequency 150kHz - 230MHz |
| CDN-T4 S1 | For 4 unscreened balanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/3A - Frequency 150kHz - 80(230)MHz |
| CDN-T8-RJ45 | For 8 unscreened balanced lines - AE: RJ45-connectors - EUT: RJ45-connectors - Voltage/current max. 100V/1.5A - Frequency 150kHz - 230MHz |
| CDN-T8 | For 8 unscreened balanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/3A - Frequency 150kHz - 80MHz |
| | Special T-type CDN's on request |

CDNS FOR UNSHIELDED UNSYMMETRICAL LINES, TYPE AF

AF-TYPE CDN MODELS

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|---------------|---|
| CDN-AF2 | For 2 unscreened unbalanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/1.5A - Frequency 150kHz - 300MHz |
| CDN-AF2 S1 | For 2 unscreened unbalanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 250V/1.5A - Frequency 150kHz - 230MHz |
| CDN-AF2/10KHz | For 2 unscreened unbalanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/1.5A - Frequency 10kHz - 80MHz |
| CDN-AF3N | For 3 unscreened unbalanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/1.5A - Frequency 150kHz - 300MHz |
| CDN-AF3/3A | For 3 unscreened unbalanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/3A - Frequency 150kHz - 300MHz |
| CDN-AF3 S1 | For 3 unscreened unbalanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 250V/1.5A - Frequency 150kHz - 230MHz |
| CDN-AF3/10KHz | For 3 unscreened unbalanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/1.5A - Frequency 10kHz - 80MHz |
| CDN-AF4 | For 4 unscreened unbalanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/1.5A - Frequency 150kHz - 230MHz |
| ... | |

TECHNICAL DETAILS
AF-TYPE CDN MODELS (CONTINUATION)

| | |
|----------------------------------|---|
| CDN-AF4 S1 | For 4 unscreened unbalanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/1.5A - Frequency 10kHz - 80MHz |
| CDN-AF5 | For 5 unscreened unbalanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/1.5A - Frequency 150kHz - 80MHz |
| CDN-AF6 | For 6 unscreened unbalanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/1.5A - Frequency 150kHz - 80MHz |
| CDN-AF8 | For 8 unscreened unbalanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/1.5A - Frequency 150kHz - 80MHz |
| CDN-AF10 | For 10 unscreened unbalanced lines - AE: 4mm safety lab connectors - EUT: 4mm safety lab connectors - Voltage/current max. 100V/1.5A - Frequency 150kHz - 80MHz |
| CDN-AF15 | For 15 unscreened unbalanced lines - AE: D-Sub 15 connectors - EUT: D-Sub 15 connectors - Voltage/current max. 100V/1.5A - Frequency 150kHz - 80MHz |
| CDN-AF25 | For 25 unscreened unbalanced lines - AE: D-Sub 25 connectors - EUT: D-Sub 25 connectors - Voltage/current max. 100V/1.5A - Frequency 150kHz - 80MHz |
| Special AF-type CDN's on request | |

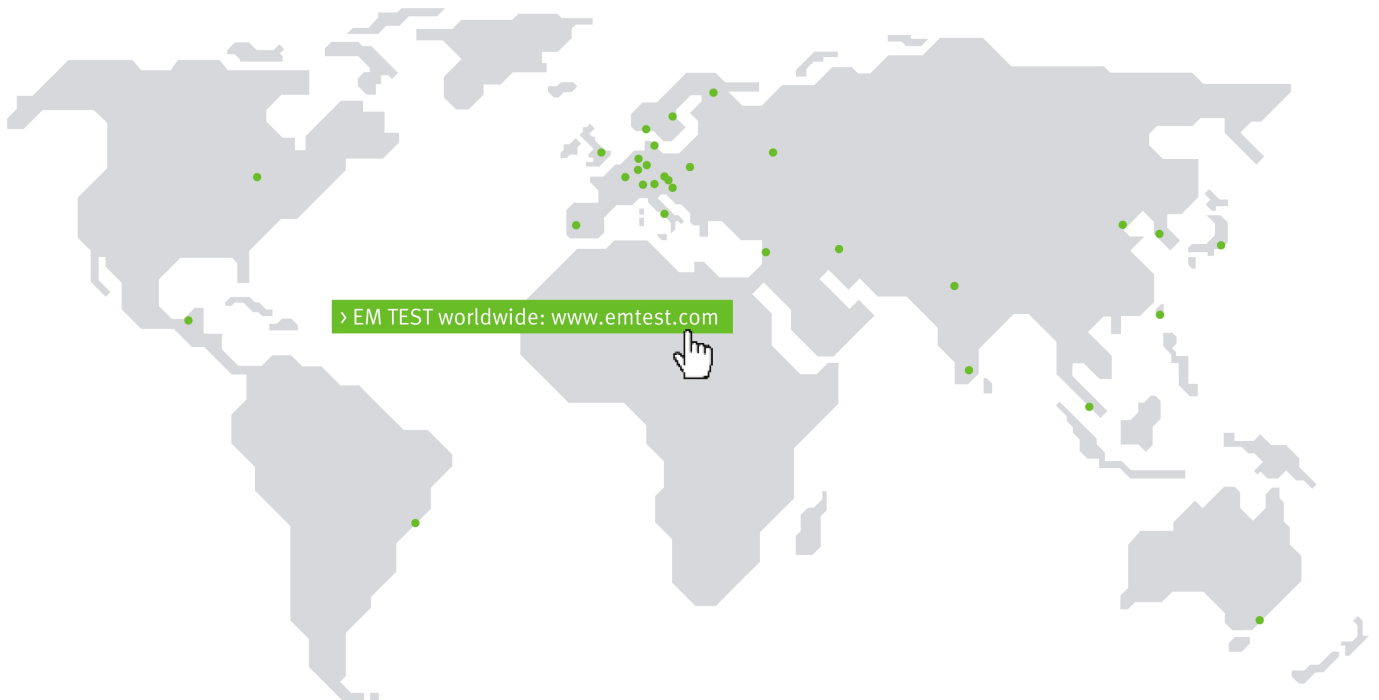
OPTIONS AND ACCESSORIES
OPTION FOR CISPR 15 (FREQUENCY UP TO 300MHZ)

| | |
|---------------|---|
| Available for | CDN-M2N CDN-M2/M3N CDN-M3N CDN-AF2 CDN-AF2 S1 CDN-AF3N CDN-AF3/3A |
|---------------|---|

CALIBRATION/LEVELLING ACCESSORIES

| | |
|---------|--|
| CA xx | Termination adapters matching the connectors of the corresponding CDN |
| R-100N | 150-to-50ohm matching impedance as per IEC 61000-4-6 |
| T-50 | 50ohm termination resistor |
| CWS-Cal | Basic calibration kit with plastic case including 1ea R-100N, BNC-cable 50cm |

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. Technical data subject to change without further notice.