

## 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
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### 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
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**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
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### 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

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

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
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**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	

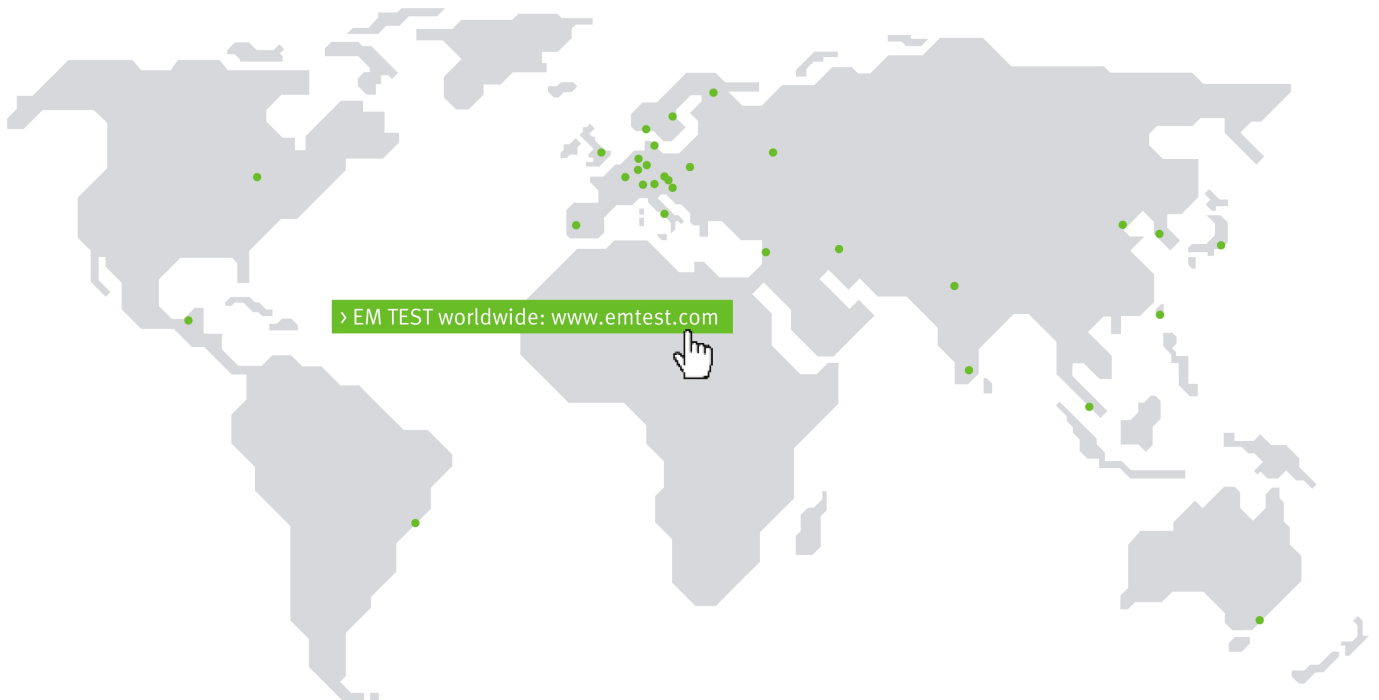
**OPTIONS AND ACCESSORIES**
**OPTION FOR CISPR 15 (FREQUENCY UP TO 300MHZ)**

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