

## CDN AF From 10 kHz Series CDN IEC 61000-4-6

IEC/EN 61000-4-6 specifies the design and performance of a range of coupling/decoupling networks (CDNs). Each CDN is specific to the type of cable and the intended signal carried on the cable. AMETEK CTS with its brand TESEQ offers an extensive range of CDNs which fully comply with the requirements of the standard and provide a simple and reliable method of injecting RF energy into the equipment under test (EUT). In this datasheet, CDN used with unscreened unbalanced for data communications with different line application starting from 10 kHz as required by NAMUR NE21 is presented.

The CDN AF series is used to Inject common mode disturbance signal into unscreened and unbalanced control lines with low currents in the frequency range from 10 kHz to 80 MHz.

Verification results is supplied with each unit. Traceable and accredited calibration according to ISO17025 is available upon request. The CDN can be ordered alone or as a kit, which includes the necessary adapters for verification. please refer to the set order information for more details.

AMTEK CTS cares about the safety of their customers. Hence, a protective earth bolt attached to the bottom plate can be used to increase safety during operations. Furthermore, CDN AF series up to 5 lines comes with a safety banana socket to avoid accidental contact with the metal socket. For 8 line applications, there are two options; either with banan socket or with D-sub 25 pin.

Typical performance with limit lines for common mode impedance and voltage division factor is presented in this datasheet.

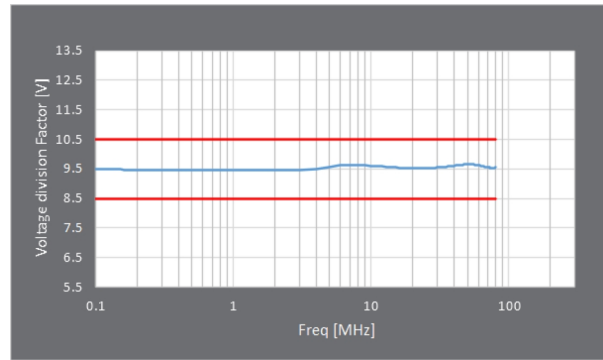
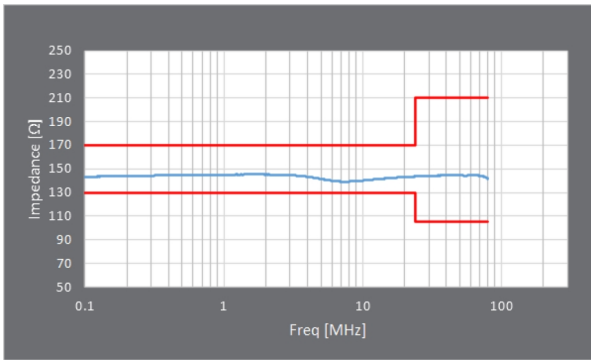
### MAIN FEATURES

- **Coupling networks designed for IEC/EN 61000-4-6**
- **Used for unscreened, unbalanced control lines**
- **Models with 4 mm safety banana sockets or D-Sub 25**
- **Start frequency is from 10 kHz as NAMUR NE 21 specifies**

### Electrical Specifications

	CDN A201A-10	CDN A301A-10	CDN A401A-10	CDN A501-10	CDN A801A-10	CDN A800-10
Frequency Range	10 kHz to 80 MHz					
Application	2 lines application	3 lines application	4 lines application	5 lines application	8 lines application	
Connector EUT Port	4 mm safety banana					D-Sub 25 pins <sup>1</sup>
Connector AE Port						
Line Parameters	unscreened, unbalanced					
AC max. voltage (L- N)	250 V			160 V		63 V
DC max. voltage (L-GND)	300 V			250 V		100 V
Current Max	4 A				2A	200 mA
Test Voltage, 2 sec.	1 kV DC				400 V DC	250 V DC
Common Mode Impedance (EUT Port)	10 kHz to 26 MHz: 150 Ω ±20 Ω 26 MHz to 80 MHz: 150 Ω +60 Ω / -45 Ω					
Footnote	1. From Pin 1 to Pin x, where x is number of lines.					

**Typical Performance for Common Mode Impedance and Voltage Division Factor**



**RF to EUT/AE Specifications**

	CDN A201A-10	CDN A301A-10	CDN A401A-10	CDN A501-10	CDN A801A-10	CDN A800-10
RF Port	BNC 50 Ω (f)					
RF Voltage	30 V <sup>1</sup>					15 V <sup>2</sup>
Voltage division factor (RF input to EUT port)	10 kHz to 80 MHz: 10 dB ±1 dB					
Transmission bandwidth (wanted signal) EUT / AE B3 dB:	> 20 kHz sin.					
Decoupling of CM disturbance (RF port / AE) typ.	10 kHz: >10 dB 150 kHz: >35 dB 26 MHz: >45 dB 80 MHz: >25 dB					
Footnote	1. refers to 50 V test level in 300 Ω / 2. refers to 25 V test level in 300 Ω					

**General Specifications**

	CDN A201A-10	CDN A301A-10	CDN A401A-10	CDN A501-10	CDN A801A-10	CDN A800-10
Dimensions (WxHxD)	100 x 100 x 240 mm <sup>3</sup>					
Net Weight	approx. 1.5 kg					
Operating Environment	Indoor use only					
Operating Temperature	+5°C to +40 °C					
Humidity	up to 80%					

### Available Models

Product	Description	Item #
CDN A201A-10	Coupling/Decoupling Network according IEC 61000-4-6 for asymmetrical 2 lines, max. 4 A, and from 10 kHz to 80 MHz. (AE and EUT safety banana)	256661
CDN A301A-10	Coupling/Decoupling Network according IEC 61000-4-6 for asymmetrical 3 lines, max. 4 A, and from 10 kHz to 80 MHz. (AE and EUT safety banana)	256663
CDN A401A-10	Coupling/Decoupling Network according IEC 61000-4-6 for asymmetrical 4 lines, max. 4 A, and from 10 kHz to 80 MHz. (AE and EUT safety banana)	256665
CDN A501-10	Coupling/Decoupling Network according IEC 61000-4-6 for asymmetrical 5 lines, max. 4 A, and from 10 kHz to 80 MHz. (AE and EUT safety banana)	243865
CDN A801A-10	Coupling/Decoupling Network according IEC 61000-4-6 for asymmetrical 8 lines, max. 2 A, and from 10 kHz to 80 MHz. (AE and EUT banana)	261162
CDN A800-10	Coupling/Decoupling Network according IEC 61000-4-6 for asymmetrical 8 lines, max. 200 mA, and from 10 kHz to 80 MHz. (AE and EUT D-Sub 25)	243014

### Set Information

Set Name Order Nr.	CAL U100B 247825	CAL U100M 257138	A 50-N 257521	SAR M116 239915	SAR MA21 247827	SAR MA31 247828	SAR MA41 247831	SAR MA51 243873	SAR A81 247834	SAR A250 243050
CDN A201A-10S 256662	2	-	1	1	2	-	-	-	-	-
CDN A301A-10S 256664	2	-	1	1	-	2	-	-	-	-
CDN A401A-10S 256666	2	-	1	1	-	-	2	-	-	-
CDN A501-10S 243866	2	-	1	1	-	-	-	2	-	-
CDN A801A-10S 243957	2	-	1	1	-	-	-	-	2	-
CDN A800-10S2 243015	1	1	1	1	-	-	-	-	-	2

### Accessories Information

Product	Description	Item #
CDN-TC	Traceable calibration (ISO17025) for IEC 61000-4-6 requirements, order only with device CDN M, AF or S type	97-231024
CDN-DAkkS	DAkkS accredited calibration (ISO17025) for impedance and VDF in the frequency range of the CDN	98-231024
CAL U100X-TC	Traceable calibration (ISO17025), order only with CAL U100x device	97-247825
CAL U100XDAkkS	DAkkS accredited calibration (ISO17025), order only with CAL U100x device	98-247825
IMA U100	Universal impedance measuring adapter (0 Ω)	239902
IMA U100M	Universal impedance measuring adapter (0 Ω)	257137