



CDN 118A series

COUPLING / DECOUPLING NETWORK FOR UNSHIELDED, SYMMETRICAL LINES



- As per IEC 61000-4-5 Ed.3, Fig 10/A4, ITU K.44
- Dataline surge testing
- Easy to use bench top housing
- Conforms to IEC 61000-4-5
- Complete set includes all accessories
- Supported by the NSG 3040A and NSG 3060A series
- Exchangeable AE port protection

Teseq's CDN 118A series coupling-decoupling network enables convenient surge testing of telecommunications equipment to IEC / EN 61000-4-5 Ed.3 which, specifies a 1.2 / 50 μ s or 10 / 700 μ s pulse. The CDN 118A series includes the special decoupling network and coupling devices that are required for these tests. The design of the CDN is given in IEC 61000-4-5 Ed.3 Figure 10 and A.4.

CDN 118A series is available in two versions

CDN 118A-C4-4-1:	for NSG 3040A series up to 4.8 kV	4 lines, current 1 A
CDN 118A-C6-4-1:	for NSG 3060A series up to 6.6 kV	4 lines, current 1 A

The CDN 118 can be easily interfaced with the EUT and is designed as a bench top unit. It can be used with Teseq's NSG 30x0A-series or any industry standard surge generator with the appropriate connector adapter.

All coupling methods described in IEC / EN 61000-4-5 for unshielded symmetrical line pairs can be performed in common mode coupling (line-to-ground).

- Coupling 1.2/50 μ s: GDT for each coupled line
- Coupling 10/700 μ s: GDT for each coupled line + short circuit bridge



Coupling 1.2/50 μ s: $R_c = 4 \times 160 \Omega$



Coupling 10 / 700 μ s: $R_c = 4 \times 25 \Omega$

AE Port protection modules with 4 lines can be plugged in manually. The different voltage levels and impedances of the modules makes the CDN 118 A series to a universal device for Surge testing for signal and data lines.

DPM 50-1:	Module 50 V, bidirectional diodes, Impedance to GND: 1 k Ω per line
DPM 50:	Module 50 V, bidirectional diodes, Impedance to GND: open circuit
VPM 250-100:	Varistor Protection Module, 250 VAC, 350 VDC, Impedance to GND: 100 k Ω

The CDN 118A series is a complete set of coupling elements consisting of:

- The coupling-decoupling network itself
- Interface cables to the surge generator
- DPM 50-1, AE port protection device for 4 lines
- 4 coupling bridges with a GDT spark gap device
- 4 short circuit bridges
- Short circuit bridge 19 mm for coupling differential or common mode

CDN 118A series

COUPLING / DECOUPLING NETWORK FOR UNSHIELDED, UNSYMMETRICAL INTERCONNECTION LINES

Model	Max. impulse voltage
CDN 118A-C4-4-1	4.8 kV (designed for NSG 3040A series)
CDN 118A-C6-4-1	6.6 kV (designed for NSG 3060A series)

Parameter	Value
Max operating voltage:	AC 250 V, DC 350 V (depending AE protection module)
Max operating current:	1 A
Max pulse voltage:	CDN 118A-C4-4-1: 4.8 kV CDN 118A-C6-4-1: 6.6 kV
Ohmic resistance per path:	<1.0 Ω (typical 0.49 Ω)
Decoupling chokes 1 kHz:	20 mH nominal each line \pm 10 % pairwise current compensated
Transmission 3 dB BW:	100 kHz (@ 600 Ω load)
Connectors	4 mm safety banana, to generator and EUT
Pulse:	Surge: 1.2 / 50 μ s and 10 / 700 μ s pulse
Surge coupling:	- 0.5 μ F capacitor via 40 Ω - GDT: Gas discharge tube (90V) via 40 Ω - ABG: Avalanche breaking diode (140V) via 40 Ω

Included Accessories	
1 HVS	HV cable Banana – Banana, 0.5 m, 1 x red, 1 x black
Earth connection	1 brass bar 0.3 m including mounting parts, screw M4 x 10 mm
User manual	Delivered on USB memory card
Calibration certificate	included

Protection module options	
VPM 250-100	Varistor Module 250 V, 250 VAC, 350 VDC, Impedance to GND: 100 k Ω
DPM 50-1	Module 50 V, bidirectional diodes, Impedance to GND: 1 k Ω per line
DPM 50	Module 50 V, bidirectional diodes, Impedance to GND: open circuit

Dimension, Weight	CDN 118A-C4-4-1	CDN 118A-C6-4-1
Size: (L x W x H)	19", 3 HU, 447 x 500 x 143 mm	19", 6 HU, 447 x 500 x 186 mm
Weight:	approx. 10 kg	approx. 14 kg
Safety Standard	IEC/EN 61010	IEC/EN 61010

Environment	
Temperature	10 °C to 40 °C
Humidity	10 % to 80 %, non-condensing
Atmospheric pressure	86 kPa (860 mbar) to 106 kPa (1,060 mbar)
Atmospheric pressure	86 kPa (860 mbar) to 106 kPa (1,060 mbar)

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November 2019