

# CNV 504N / 508N SERIES

## COUPLING/DECOUPLING NETWORKS FOR UNSHIELDED UNSYMMETRICAL INTERCONNECTION LINES



### FOR TESTS ACCORDING TO ...

- > EN 50121
- > EN 61000-4-12
- > EN 61000-4-5
- > IEC 61000-4-12
- > IEC 61000-4-5
- > IEC 61326

### CNV 504N/508N - COUPLING/DECOUPLING NETWORKS FOR SIGNAL/DATA LINES

Surge pulses or Ringwave pulses are applied to unshielded unsymmetrical interconnection lines (signal/data lines) by means of standalone coupling/decoupling networks. For such testing EM TEST offers a range of CNVs for either 4 or 8 signal/data lines.

According to IEC/EN 61000-4-5 resp. IEC/EN 61000-4-12 the pulses are coupled via different coupling elements such as capacitors or gas arrestors depending on the characteristics of the line signals.

### HIGHLIGHTS

- > Coupling/decoupling networks according to IEC/EN 61000-4-5 and IEC/EN 61000-4-12
- > Coupling via gas arrestor or 0.5  $\mu$ F capacitor for Surge (3.3  $\mu$ F capacitor for Ringwave)
- > 20 mH decoupling inductor per line
- > Differential mode or Common mode coupling selectable
- > Test voltage up to 4 kV, 7 kV and 10 kV

### APPLICATION AREAS

-  INDUSTRY
-  MEDICAL
-  RESIDENTIAL

**TECHNICAL DETAILS**

**SURGE APPLICATION**

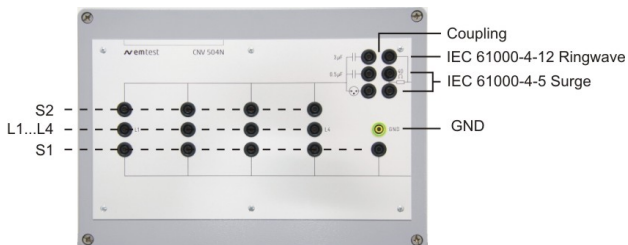
**CNV 504N/508N SERIES - MULTIFUNCTIONAL COUPLING/DECOUPLING NETWORKS**

The EM TEST CNV 504N/508N series of coupling decoupling networks are multifunctional CNVs for the application of Surge and Ringwave pulses onto signal/data lines.

The standard CNV 504N/508N models combine three different applications; coupling of Surge pulse via capacitor or gas arrester and coupling of Ringwave pulses via capacitor being required by the relevant standards. The required coupling mode can easily be selected by means of a simple jumper.

The CNVs also include the required decoupling part consisting of decoupling inductors of 20mH for each line. To protect the auxiliary equipment being needed for testing the DUT an additional protection circuit is integrated at the signal/data line input.

EM TEST offers CNV 504N/CNV 508N coupling/decoupling networks for various test voltages up to 10kV and for higher signal voltages/currents (up to 600V and up to 4A). Dedicated CNVs are available e.g. for railway applications as per EN 50155 and for other customer specific test applications.



**COUPLING**

**MULTIFUNCTIONAL COUPLING FOR SURGE AND RINGWAVE**

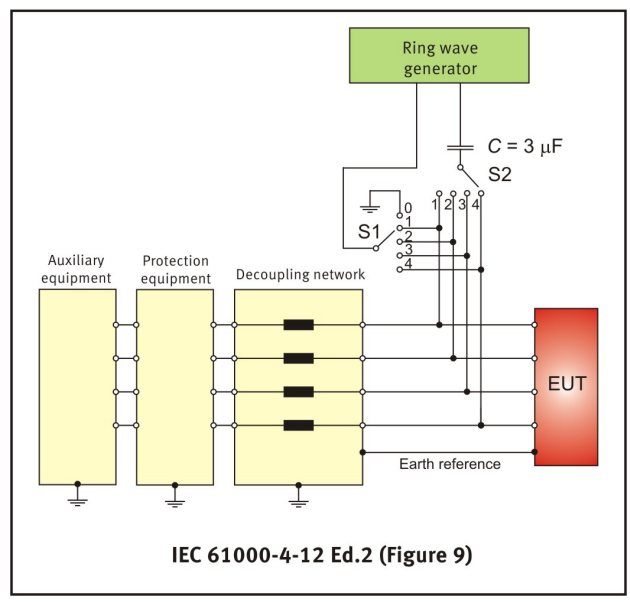
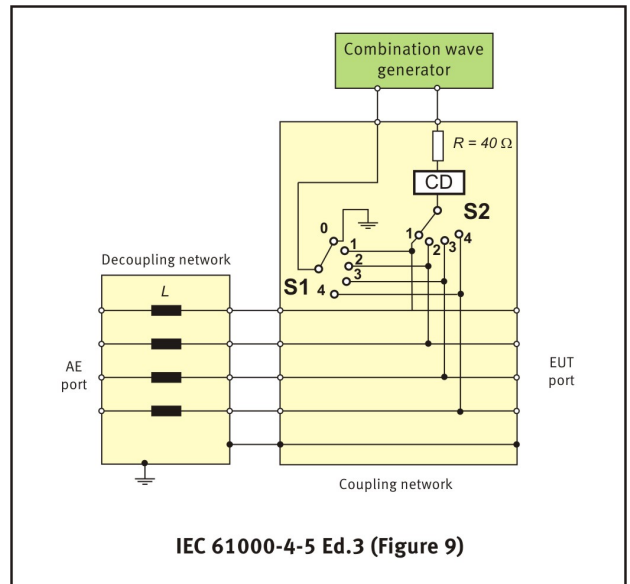
The EM TEST CNV 504N/508N series of coupling decoupling networks are multifunctional CDNs for the application of Surge and Ringwave pulses onto signal/data lines.

Surge as per IEC 61000-4-5 Ed.3, Figure 9

- Capacitor 0.5 uF with 40 ohm
- GDT gas arrester with 40 ohm

Ringwave as per IEC 61000-4-12 Ed.2, Figure 9

- Capacitor >3.3 uF



## TECHNICAL DETAILS

**CNV 504N-SERIES FOR 4  
UNSHIELDED UNSYMMETRICAL  
INTERCONNECTION LINES, 50 V**
**4 KV MODELS, LINE VOLTAGE MAX. 35 VAC, 50 VDC**

CNV 504N1	4 kV coupling/decoupling network max. line current 1 A
CNV 504N1.1	4 kV coupling/decoupling network line current 4 A, intermittent 5A
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 $\mu$ F capacitor via 40 ohm, - GDT gas arrester via 40 ohm
Ringwave coupling	as per Fig. 9 IEC 61000-4-12 Ed.2, - 3.3 $\mu$ F capacitor

**7 KV MODELS, LINE VOLTAGE MAX. 35 VAC, 50 VDC**

CNV 504N2	7 kV coupling/decoupling network max. line current 1 A
CNV 504N2.1	7 kV coupling/decoupling network line current 4 A, intermittent 5A
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 $\mu$ F capacitor via 40 ohm, - GDT gas arrester via 40 ohm
Ringwave coupling	as per Fig. 9 IEC 61000-4-12 Ed.2, - 3.3 $\mu$ F capacitor

**10 KV MODELS, LINE VOLTAGE MAX. 35 VAC, 50 VDC**

CNV 504N3	10 kV coupling/decoupling network max. line current 1 A
CNV 504N3.1	10 kV coupling/decoupling network line current 4 A, intermittent 5A
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 $\mu$ F capacitor via 40 ohm, - GDT gas arrester via 40 ohm

**CNV 504N-SERIES FOR 4  
UNSHIELDED UNSYMMETRICAL  
INTERCONNECTION LINES, 300 V**
**4 KV MODELS, LINE VOLTAGE MAX. 250 VAC, 300 VDC**

CNV 504N1.2	4 kV coupling/decoupling network max. line current 1 A
CNV 504N1.3	4 kV coupling/decoupling network line current 4 A, intermittent 5A
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 $\mu$ F capacitor via 40 ohm
Ringwave coupling	as per Fig. 9 IEC 61000-4-12 Ed.2, - 3.3 $\mu$ F capacitor

**7 KV MODELS, LINE VOLTAGE MAX. 250 VAC, 300 VDC**

CNV 504N2.2	7 kV coupling/decoupling network max. line current 1 A
CNV 504N2.3	7 kV coupling/decoupling network line current 4 A, intermittent 5A
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 $\mu$ F capacitor via 40 ohm
Ringwave coupling	as per Fig. 9 IEC 61000-4-12 Ed.2, - 3.3 $\mu$ F capacitor

**10 KV MODELS, LINE VOLTAGE MAX. 250 VAC, 300 VDC**

CNV 504N3.2	10 kV coupling/decoupling network max. line current 1 A
CNV 504N3.3	10 kV coupling/decoupling network line current 4 A, intermittent 5A
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 $\mu$ F capacitor via 40 ohm

## TECHNICAL DETAILS

**CNV 508N-SERIES FOR 8  
UNSHIELDED UNSYMMETRICAL  
INTERCONNECTION LINES, 50 V**
**4 KV MODELS, LINE VOLTAGE MAX. 35 VAC, 50 VDC**

CNV 508N1	4 kV coupling/decoupling network max. line current 1 A
CNV 508N1.1	4 kV coupling/decoupling network line current 4 A, intermittent 5A
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 $\mu$ F capacitor via 40 ohm, - GDT gas arrester via 40 ohm
Ringwave coupling	as per Fig. 9 IEC 61000-4-12 Ed.2, - 3.3 $\mu$ F capacitor

**7 KV MODELS, LINE VOLTAGE MAX. 35 VAC, 50 VDC**

CNV 508N2	7 kV coupling/decoupling network max. line current 1 A
CNV 508N2.1	7 kV coupling/decoupling network line current 4 A, intermittent 5A
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 $\mu$ F capacitor via 40 ohm, - GDT gas arrester via 40 ohm
Ringwave coupling	as per Fig. 9 IEC 61000-4-12 Ed.2, - 3.3 $\mu$ F capacitor

**10 KV MODELS, LINE VOLTAGE MAX. 35 VAC, 50 VDC**

CNV 508N3	10 kV coupling/decoupling network max. line current 1 A
CNV 508N3.1	10 kV coupling/decoupling network line current 4 A, intermittent 5A
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 $\mu$ F capacitor via 40 ohm, - GDT gas arrester via 40 ohm

**CNV 508N-SERIES FOR 8  
UNSHIELDED UNSYMMETRICAL  
INTERCONNECTION LINES, 300 V**
**4 KV MODELS, LINE VOLTAGE MAX. 250 VAC, 300 VDC**

CNV 508N1.2	4 kV coupling/decoupling network max. line current 1 A
CNV 508N1.3	4 kV coupling/decoupling network line current 4 A, intermittent 5A
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 $\mu$ F capacitor via 40 ohm
Ringwave coupling	as per Fig. 9 IEC 61000-4-12 Ed.2, - 3.3 $\mu$ F capacitor

**7 KV MODELS, LINE VOLTAGE MAX. 250 VAC, 300 VDC**

CNV 508N2.2	7 kV coupling/decoupling network max. line current 1 A
CNV 508N2.3	7 kV coupling/decoupling network line current 4 A, intermittent 5A
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 $\mu$ F capacitor via 40 ohm
Ringwave coupling	as per Fig. 9 IEC 61000-4-12 Ed.2, - 3.3 $\mu$ F capacitor

**10 KV MODELS, LINE VOLTAGE MAX. 250 VAC, 300 VDC**

CNV 508N3.2	10 kV coupling/decoupling network max. line current 1 A
CNV 508N3.3	10 kV coupling/decoupling network line current 4 A, intermittent 5A
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 $\mu$ F capacitor via 40 ohm

**TECHNICAL DETAILS**
**GENERAL**
**4 KV DEVICES, DIMENSION AND WEIGHTS**

Model	dimension (L x W x H), weight
CNV 504 N1	330 x 230 x 112 mm, 5.40 kg
CNV 504 N1.1	330 x 230 x 112 mm, 9.55 kg
CNV 504 N1.2	330 x 230 x 112 mm, 5.50 kg
CNV 504 N1.3	330 x 230 x 112 mm, 9.75 kg
CNV 508 N1	330 x 230 x 112 mm, 6.40 kg
CNV 508 N1.1	448 x 395 x 142 mm, 17.45 kg
CNV 508 N1.2	330 x 230 x 112 mm, 6.65 kg
CNV 508 N1.3	448 x 395 x 142 mm, 17.65 kg

**7 KV DEVICES, DIMENSION AND WEIGHTS**

Model	dimension (L x W x H), weight
CNV 504 N2	448 x 305 x 142 mm, 9.10 kg
CNV 504 N2.1	448 x 305 x 142 mm, 11.80 kg
CNV 504 N2.2	448 x 305 x 142 mm, 6.70 kg
CNV 504 N2.3	448 x 305 x 142 mm, 11.85 kg
CNV 508 N2	448 x 305 x 142 mm, 12.90 kg
CNV 508 N2.1	448 x 395 x 142 mm, 17.60 kg
CNV 508 N2.2	448 x 305 x 142 mm, 12.90 kg
CNV 508 N2.3	448 x 395 x 142 mm, 17.65 kg

**10 KV DEVICES, DIMENSION AND WEIGHTS**

Model	dimension (L x W x H), weight
CNV 504 N3	448 x 305 x 142 mm, 9.25 kg
CNV 504 N3.1	448 x 305 x 142 mm, 10.50 kg
CNV 504 N3.2	448 x 305 x 142 mm, 9.40 kg
CNV 504 N3.3	448 x 305 x 142 mm, 10.65 kg
CNV 508 N3	448 x 305 x 142 mm, 13.50 kg
CNV 508 N3.1	448 x 395 x 142 mm, 17.45 kg
CNV 508 N3.2	448 x 305 x 142 mm, 13.55 kg
CNV 508 N3.3	448 x 395 x 142 mm, 17.55 kg

**GENERAL**
**DECOUPLING**

Decoupling inductance	20 mH, each line
-----------------------	------------------

**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)

# COMPETENCE WHEREVER YOU ARE



## CONTACT EM TEST DIRECTLY

### Switzerland

EM TEST (Switzerland) GmbH > Sternenhofstraße 15 > 4153 Reinach > Switzerland  
 Phone +41 (0)61/7179191 > Fax +41 (0)61/7179199  
 Internet: www.emtest.ch > E-mail: sales.emtest@ametek.com

### Germany

AMETEK CTS Germany GmbH > Lünener Straße 211 > 59174 Kamen > Deutschland  
 Phone +49 (0)2307/26070-0 > Fax +49 (0)2307/17050  
 Internet: www.emtest.com > E-mail: info.cts@ametek.de

### France

EM TEST FRANCE > Le Trident - Parc des Collines > Immeuble B1 - Etage 3 > 36, rue Paul Cézanne > 68200 Mulhouse > France  
 Phone +33 (0)389 31 23 50 > Fax +33 (0)389 31 23 55  
 Internet: www.emtest.fr > E-mail: info@emtest.fr

### Poland

EM TEST Polska > ul. Ogrodowa 31/35, 00-893 Warszawa > Polska  
 Phone +48 (0)518 64 35 12  
 Internet: www.emtest.com/pl > E-mail: infopolska.emtest@ametek.com

### USA / Canada

AMETEK Compliance Test Solutions > 52 Mayfield Ave. > Edison > NJ 08837  
 Phone +1 (732) 417-0501  
 Internet: www.emtest.com > E-mail: sales.emtest@ametek.com

### P.R. China

E & S Test Technology Limited > Rm 913, Leftbank > No. 68 Bei Si Huan Xi Lu > Haidian District > Beijing 100080 > P.R. China  
 Phone +86 (0)10 82 67 60 27 > Fax +86 (0)10 82 67 62 38  
 Internet: www.emtest.com > E-mail: info@emtest.com.cn

### Republic of Korea

EM TEST Korea Limited > #405 > WooYeon Plaza > #986-8 > YoungDeok-dong > Giheung-gu > Yongin-si > Gyeonggi-do > Korea  
 Phone +82 (31) 216 8616 > Fax +82 (31) 216 8616  
 Internet: www.emtest.co.kr > E-mail: sales@emtest.co.kr

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.