



# Coupling/Decoupling Network for Unshielded Asymmetric Communication Line of Damped Oscillatory Wave

## CDN 418AFL8

- IEC/EN 61000-4-12
- IEC/EN 61000-4-18
- GB/T 17626.12
- GB/T 17626.18

### Features

- > Compatible with all brands of EMC generators without additional adaptation
- > Excellent decoupling performance, no extra protection required for auxiliary equipment
- > Compatible with multiple scenarios and has two coupling modes including line-to-line and line-to-ground
- > Data rate is 5 Mbit/s
- > The coupling and decoupling modules are externally mounted and replaceable

### Introduction

The CDN 416AFL8 is a coupling/decoupling network for unshielded asymmetric communication line of damped oscillatory wave. It complies with IEC 61000-4-12, IEC 61000-4-18, GB/T 17626.12 and GB/T 17626.18. It Supports 8-wire data transmission at 5 Mbit/s with stable data transfer and no packet loss during testing.

The CDN 416AFL8 provides strong decoupling. At 4 kV test voltage, residual voltage at AE port is only 50 V. It isolates interference to protect auxiliary equipment without extra protection devices.

It fully meets compliance verification requirements for industrial, communication and other industries, ensuring all tests are standard-compliant and results reliable.

### Application Areas



## Technical Parameters

|                         |                                                                                                         |
|-------------------------|---------------------------------------------------------------------------------------------------------|
| Coupling waveforms      | Ring wave: voltage rise time 0.5 $\mu$ s, current rise time 0.2 $\mu$ s ~ 1 $\mu$ s, frequency: 100 kHz |
|                         | Damped oscillatory wave: voltage rise time 75 ns, frequency: 100 kHz/1 MHz                              |
| Pulse Voltage           | Max. 4 kV                                                                                               |
| Coupling Mode           | Line-to-line / Line-to-ground                                                                           |
| Coupling Component      | External replaceable module (GDT / Capacitor / TVS)                                                     |
| Communication Rate      | 5 Mbit/s                                                                                                |
| Communication Interface | RJ45 female connector (AE) / 4 mm banana port (EUT)                                                     |
| Pin Assignment          | Pair 1: pins 1 / 2                                                                                      |
|                         | Pair 2: pins 3 / 4                                                                                      |
|                         | Pair 3: pins 5 / 6                                                                                      |
|                         | Pair 4: pins 7 / 8                                                                                      |
| Data Rate               | Max. 5 Mbit/s                                                                                           |
| Test Voltage            | Max. 12 V DC                                                                                            |
| Test Current            | Max. 4 A                                                                                                |
| Decoupling Inductance   | 20 mH                                                                                                   |
| Residual Voltage        | 50 V (TVS)                                                                                              |

## General Parameters

|                     |                                   |
|---------------------|-----------------------------------|
| Weight              | Approx. 10 kg                     |
| Dimension           | 360 mm(L) * 220 mm(W) * 135 mm(H) |
| Enclosure Material  | Aluminum                          |
| Ambient Temperature | 15°C ~ 35°C                       |
| Relative Humidity   | 45% ~ 75%                         |
| Package             | Carton                            |

## Standard Accessories

HV Cable, Grounding Wire, Shorting Wire, SCD 90, Network Cable, User Manual

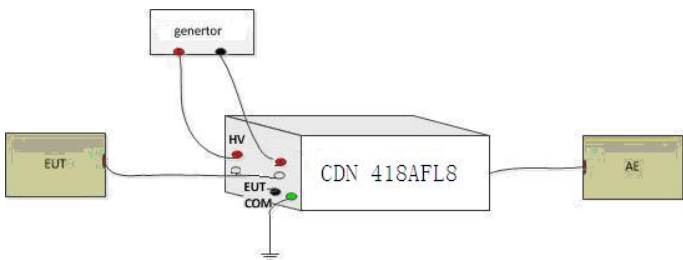
## Optional Main Unit

|   |                                            |                                                                                           |                                                                                       |
|---|--------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1 | Ring Wave Simulator                        | Model: RWS 600<br>Output voltage: 0.25 kV ~ 6 kV<br>Oscillation frequency: 100 kHz        |  |
| 2 | Damped Oscillatory Wave Immunity Simulator | Model: DOS 300<br>Output voltage: 0.2 kV ~ 3.3 kV<br>Oscillation frequency: 100 kHz/1 MHz |  |

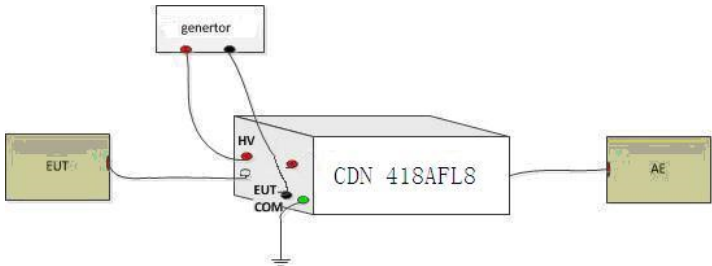
Optional Accessories

|        |                         |
|--------|-------------------------|
| SZC 33 | Coupling module 33 nF   |
| SZG 90 | Coupling module 90V GDT |
| SZT 30 | Coupling module 30V TVS |

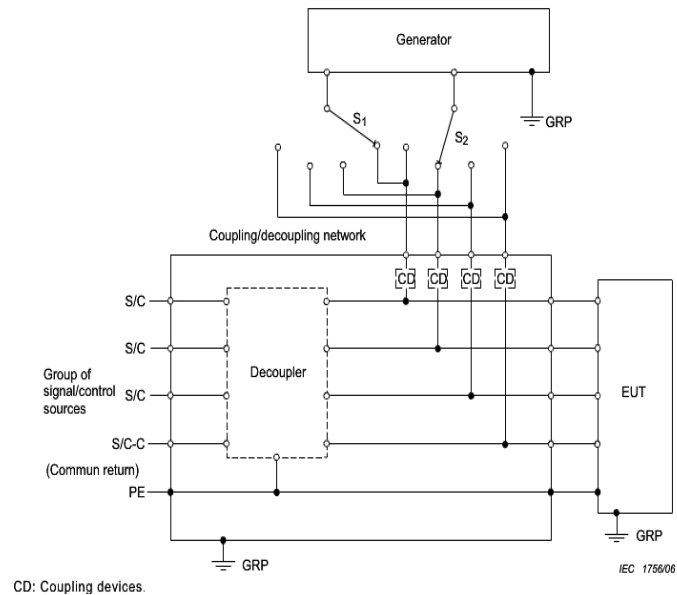
Line-to-Line Test



Line-to-Ground Test



## Design Schematic Diagram



Comply with IEC 61000-4-18: 2006, Figure 12a

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