

DCD SR - 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

DCD SR - SERIES - COUPLING/DECOUPLING NETWORKS FOR SIGNAL/DATA LINES

Surge pulses or Ring wave pulses are applied to unshielded unsymmetrical interconnection lines (signal/data lines) by means of standalone coupling/decoupling networks. For such testing AMETEK CTS offers a range of DCDs for 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 data line signals.

HIGHLIGHTS

- > Coupling/decoupling networks according to IEC/EN 61000-4-5 and IEC/EN 61000-4-12
- > Interchangeable AE port protection modules
- > Line voltage 50 V, 250 V (other on request)
- > Test voltage up to 7 kV
- > Models with automatic coupling
- > EUT max. 600 VDC / 4 A
- > Differential mode or Common mode coupling

APPLICATION AREAS

-  INDUSTRY
-  MEDICAL
-  RESIDENTIAL

TECHNICAL DETAILS

SURGE APPLICATION

DCD SR - SERIES - MULTIFUNCTIONAL COUPLING/DECOUPLING NETWORKS

The AMETEK CTS DCD sr - series of coupling decoupling networks are multifunctional CDNs for the application of Surge and Ringwave pulses onto signal/data lines.

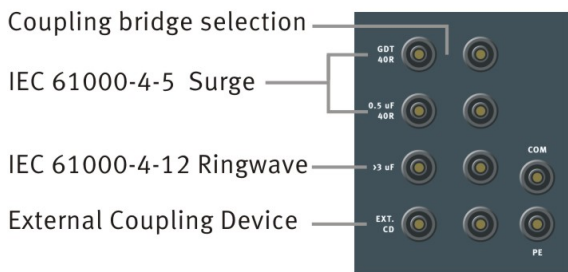
The standard DCD sr - models combine three different applications; coupling of Surge pulse via capacitor or gas arrester and coupling of Ring wave pulses via capacitor being required by the relevant standards. The required coupling mode can easily be selected.

The surge coupling GTD (Gas Discharge Tube) is inside a simple jumper and can be changed depends the application with an ABD plug (Avalanche Breaking Diode). There are also two plugs for using an individual external coupling device.

The DCD sr series also has the required decoupling inductors (20 mH) for each line. To protect the measuring system, an interchangeable, pluggable voltage protection module with overvoltage protection for 50 VDC is included in the delivery at the signal/data line inputs on the AE port. Each module protects 4 lines, so that coupling networks with 8 lines require two modules.

AMETEK CTS offers coupling networks for various voltage pulses up to 7 kV as well as for signal currents up to 4 A. Various modules for 50 VDC and 250 VAC are available for pluggable voltage protection on the AE port. Protection modules for signal voltages up to 600 VDC are available on request.

Dedicated CDNs are available e.g. for railway applications as per EN 50121 and for other customer specific test applications.



COUPLING

MULTIFUNCTIONAL COUPLING FOR SURGE AND RINGWAVE

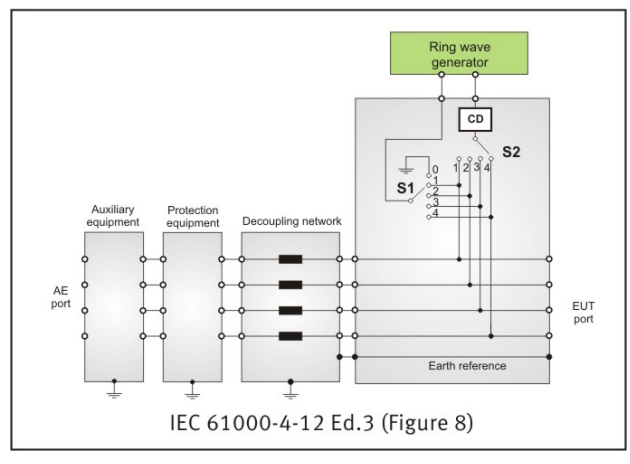
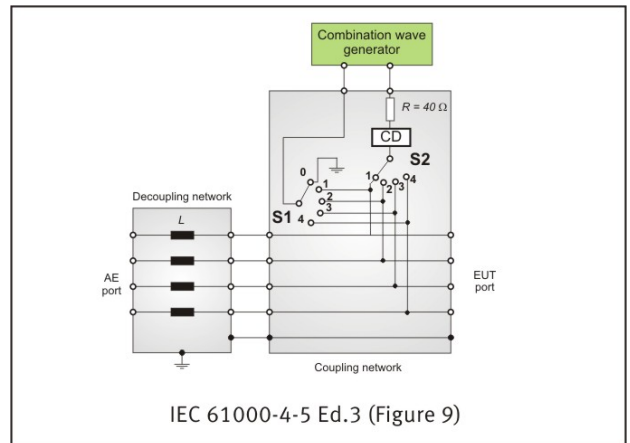
The AMETEK DCD sr - series of coupling decoupling networks are multifunctional CDNs for the application of Surge and Ringwave pulses onto signal/data lines.

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

- Capacitor 0.5 μ F with 40 Ohm
- GDT gas arrester with 40 Ohm

Ringwave as per IEC 61000-4-12 Ed.3, Figure 8

- Capacitor $\geq 3 \mu$ F



TECHNICAL DETAILS

DCD SR SERIES FOR 4 UNSHIELDED UNSYMMETRICAL INTERCONNECTION LINES

5 KV MODELS, 4 LINES

DCD 5 sr-4-1	5 kV coupling/decoupling network max. line current 1 A
DCD 5 sr-4-4	5 kV coupling/decoupling network line current 4 A, intermittent 5 A
Line voltage	Depends on AE protection module max. 50 V / 250 V
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 μ F capacitor via 40 Ohm, - GDT gas arrester via 40 Ohm
Ringwave coupling	as per Fig. 8 IEC 61000-4-12 Ed.3, - capacitor \geq 3 μ F

AE PROTECTION MODULE

DPM 50-1	1 module with 4 lines included, the module can be plugged in manually.
	Diode Protection Module 50 V, bidirectional diodes, Impedance to GND: 1 kOhm
Line voltage	Vmax: 35 VAC, 50 VDC
Other models	other AE protection, see options

ACCESSORIES FOR 5 KV DCD WITH 4 LINES

AE Protection	1 x DPM 50-1 1 module with 4 lines,
Coupling device	1 x GDT, Gas discharge tube
Short circuit bridges	4 bridges, 3 x long type, Art 109849, 1 x small type, Art 102783
HVS - Banana - Banana	HV cable 1.0 m for connection Generator - DCD 1 x red (HV) 1 x black (COM)
Earth cable Art. 10945	1 x 0.6 m yellow-green 2 x M4 screws with toothed washer

DCD SR SERIES FOR 4 UNSHIELDED UNSYMMETRICAL INTERCONNECTION LINES

7 KV MODELS, 4 LINES

DCD 7 sr-4-1	7 kV coupling/decoupling network max. line current 1 A
DCD 7 sr-4-4	7 kV coupling/decoupling network line current 4 A, intermittent 5 A
Line voltage	Depends on AE protection module max. 50 V / 250 V
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 μ F capacitor via 40 Ohm, - GDT gas arrester via 40 Ohm
Ringwave coupling	as per Fig. 8 IEC 61000-4-12 Ed.3, - capacitor \geq 3 μ F

AE PROTECTION MODULE

DPM 50-1	1 module with 4 lines included, the module can be plugged in manually.
	Diode Protection Module 50 V, bidirectional diodes, Impedance to GND: 1 kOhm
Line voltage	Vmax: 35 VAC, 50 VDC
Other models	other AE protection, see options

ACCESSORIES FOR 7 KV DCD WITH 4 LINES

AE Protection	1 x DPM 50-1 1 module with 4 lines,
Coupling device	1 x GDT, Gas discharge tube
Short circuit bridges	4 bridges, 3 x long type, Art 109849, 1 x small type, Art 102783
HVS - Banana - Banana	HV cable 1.0 m for connection Generator - DCD 1 x red (HV) 1 x black (COM)
Earth cable Art. 10945	1 x 0.6 m yellow-green 2 x M4 screws with toothed washer

TECHNICAL DETAILS

DCD SR SERIES FOR 8 UNSHIELDED UNSYMMETRICAL INTERCONNECTION LINES

5 KV MODELS, 8 LINES

DCD 5 sr-8-1	5 kV coupling/decoupling network max. line current 1 A
DCD 5 sr-8-4	5 kV coupling/decoupling network line current 4 A, intermittent 5 A
Line voltage	Depends on AE protection module max. 50 V / 250 V
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 μ F capacitor via 40 Ohm - GDT gas arrester via 40 Ohm
Ringwave coupling	as per Fig. 8 IEC 61000-4-12 Ed.3, - capacitor $\geq 3 \mu$ F

AE PROTECTION MODULES

DPM 50-1	2 modules with 4 lines included, the modules can be plugged in manually.
	Diode Protection Module 50 V, bidirectional diodes, Impedance to GND: 1 kOhm
Line voltage	Vmax: 35 VAC, 50 VDC
Other models	other AE protection, see options

ACCESSORIES FOR 5 KV DCD WITH 8 LINES

AE Protection	2 x DPM 50-1 2 modules with 4 lines,
Coupling device	1 x GDT, Gas discharge tube
Short circuit bridges	4 bridges, 3 x long type, Art 109849, 1 x small type, Art 102783
HVS - Banana - Banana	HV cable 1.0 m for connection Generator - DCD 1 x red (HV) 1 x black (COM)
Earth cable Art. 10945	1 x 0.6 m yellow-green 2 x M4 screws with toothed washer

DCD SR SERIES FOR 8 UNSHIELDED UNSYMMETRICAL INTERCONNECTION LINES

7 KV MODELS, 8 LINES

DCD 7 sr-8-1	7 kV coupling/decoupling network max. line current 1 A
DCD 7 sr-8-4	7 kV coupling/decoupling network line current 4 A, intermittent 5 A
Line voltage	Depends on AE protection module max. 50 V / 250 V
General data	
Surge coupling	as per Fig. 9 IEC 61000-4-5 Ed.3, - 0.5 μ F capacitor via 40 Ohm - GDT gas arrester via 40 Ohm
Ringwave coupling	as per Fig. 8 IEC 61000-4-12 Ed.3, - capacitor $\geq 3 \mu$ F

AE PROTECTION MODULE

DPM 50-1	2 module with 4 lines included, the module can be plugged in manually.
	Diode Protection Module 50 V, bidirectional diodes, Impedance to GND: 1 kOhm
Line voltage	Vmax: 35 VAC, 50 VDC
Other models	other AE protection, see options

ACCESSORIES FOR 7 KV DCD WITH 8 LINES

AE Protection	2 x DPM 50-1 2 module with 4 lines
Coupling device	1 x GDT, Gas discharge tube
Short circuit bridges	4 bridges, 3 x long type, Art 109849, 1 x small type, Art 102783
HVS - Banana - Banana	HV cable 1.0 m for connection Generator - DCD 1 x red (HV) 1 x black (COM)
Earth cable Art. 10945	1 x 0.6 m yellow-green 2 x M4 screws with toothed washer

TECHNICAL DETAILS

OPTIONS

PROTECTION DEVICES	
Protection unit	Module with 4 lines, the module can be plugged in manually.
Required modules	DCD with 4 lines: 1 DCD with 8 lines: 2
VPM 250-100	Varistor Protection Module 250 V, Varistor 250 VAC, 350 VDC, Impedance to GND: 100 kOhm
DPM 50-1	Diode Protection Module 50 V, bidirectional diodes, Vmax: 35 VAC, 50 VDC, Impedance to GND: 1 kOhm
DPM 50	Diode Protection Module 50 V, bidirectional diodes, Vmax: 35 VAC, 50 VDC, Impedance to GND: Open circuit
Other	Other protection units on request

COUPLING DEVICES	
GDT	Gas Discharge Tube Coupling via 90 V gas arrester for Surge 1,2/50 μ s and Ring wave 0.5 μ s, 100 kHz Max. Impulse voltage 7 kV
ABD Plug	Avalanche Breaking Diode Coupling 140 V diode for Surge 1,2/50 μ s and Ring wave 0.5 μ s, 100 kHz Max. Impulse voltage 7 kV

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)

GENERAL

DIMENSION AND WEIGHTS	
Model	dimension (W x D x H), weight
DCD 5 sr-4-1	19" 3 HU, 447 x 500 x 143 mm, approx. 10 kg
DCD 5 sr-4-4	19" 3 HU, 447 x 500 x 143 mm, approx. 12 kg
DCD 5 sr-8-1	19" 3 HU, 447 x 500 x 143 mm, approx. 12 kg
DCD 5 sr-8-4	19" 3 HU, 447 x 500 x 143 mm, approx. 18 kg
DCD 7 sr-4-1	19" 6 HU, 447 x 500 x 286 mm, approx. 14 kg
DCD 7 sr-4-4	19" 6 HU, 447 x 500 x 286 mm, approx. 14 kg
DCD 7 sr-8-1	19" 6 HU, 447 x 500 x 286 mm, approx. 18 kg
DCD 7 sr-8-4	19" 6 HU, 447 x 500 x 286 mm, approx. 18 kg

DCD MODELS WITH AUTOMATIC COUPLING

DCD 5-A MODELS FOR UNSHIELDED UNSYMMETRICAL INTERCONNECTION LINES	
DCD 5-A-sr-8-4	5 kV coupling/decoupling network, 8 unshielded unsymmetrical signal lines for Surge and Ring wave, Automatic coupling, Coupling : - 40 Ohm/ 0.5 μ F, - 40 Ohm/ TVS element, - 500 Ohm/ 0.5 μ F, EUT max. 600 V peak 4 A, limited by AE port protection
DCD 5-A-b-8-4	5 kV coupling/decoupling network, 8 unshielded unsymmetrical signal lines for EFT / Burst, Automatic coupling, EUT max. 300 VAC / 420 VDC, 4A, limited by AE port protection

COMPETENCE WHEREVER YOU ARE



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