



CDN 3083

Manual Surge coupling network

- For EUT power supplies up to 620V
- 150A per phase with generous overload capacity
- Complies with IEC/EN 61000-4-5 and ANSI C62.45
- Easy upgradeable from IEC to ANSI coupling

With the prevailing high power consumption for electronic controls devices and industrial installations, the need for electronic controls goes in line.

Therefore a growing interest for high current coupling networks for EMC testing of entire assemblies is latently. At the same time the higher phase-to-phase voltages of industrial power supplies have to be matched. New draft standards take this tendency into account and specify the relevant properties of couplers for use at high current and voltage levels.

The manual coupling network type CDN 3083 fulfils the requirements called for in the Surge standard IEC/EN 61000-4-5 including the new features concerning high currents (as well as in the ANSI C62.45 standard).

The form of construction selected suits the demands placed on the instrument in its working environment. In its basic form the coupler is mad for an easy use on a floor or for table testing moving it around in an EMC laboratory or in a development workshop. It can be even mounted onto the wall to have free space on table, for instance.

High current couplers often have to be taken to a test site since it is commonly impossible to move a large installation into the laboratory. For more convenience, the CDN 3083 can be disassembled in handy parts and can easily move to other places. Optional wheels with braking features can be mounted to manoeuvring the coupler even on ramps and uneven surfaces.

Injecting surge pulses into power connections always involves a careful weighing up of partially conflicting requirements. On the one hand the power network has to be protected from the interference signals while the effects of the pulses are concentrated on the item under test, yet on the other hand the back filter must not result in any significant voltage loss. In order to keep voltage losses within reasonable limits with increasing current levels, the IEC has defined three classes of filter inductances, namely: up to 20A, 20A to 60A and 60A to 100A. Classic high current couplers cannot therefore be used any longer for lower current levels since the filtering effect is insufficient. Through the use of special choke technology, TESEQ has managed to avoid the complicated disadvantage of using several couplers. By using an auto-adaptive back filter, the CDN 3083 fulfils the requirements for both protection and voltage loss over the range from just a few amps to full load.

Further construction features make the unit even more universal. The nominal maximum current rating of 150A per phase can, during short test periods, be massively exceeded. The unit will tolerate the frequently encountered inrush currents without complaint and, in extreme cases, it can be overstress until the internal environment have reached the max. Temperature of 70°C. The CDN 3083 is hence usable where otherwise a 200A unit would be necessary. Even 300A per phase is possible by paralleling 2 decoupling network path and adding decoupling units.

The CDN 3083 is tested for safety in compliance with IEC 61010. The rugged connection terminals together with the solid Earth line assure a proper connection, this in combination with a solid housing.

Technical Specifications CDN 3083

CDN 263 3-phase manual coupling network for Surge interference pulses as per IEC/EN 61000-4-5 and ANSI C62.45 and other related standards

Pulse voltages/current	8kV/4kA max.
EUT power supply	Phase-to-phase or phase-to-PE 620Vac Phase-to-phase 150A nom. continuous current/phase 620Vdc, 0 - 60 Hz, (max. 400Hz with power loses)
EUT connectors	Screw-terminals, 200A, up to 95mm ² , AWG 4-000
Decoupling conditions	As per IEC 61000-4-5 and ANSI C62.45
Coupling modes	Surge Differential, Common to PE, Lines to PE
Dimensions	L x D x H
Weight	80kg approx.

Option	INA 2634	Wheel set
	Calibration kit	

Ordering information

CDN 3083	CDN 3083 for IEC 61000-4-5 only with LEMO connectors for NSG 2050
CDN 3083-M	CDN 3083 for IEC 61000-4-5 only with Fischer connectors for Modula
INA 2631	Upgrade for ANSI C62.45 or for 300A

Test	NSG 2050 unit	Modula
	CDN 3083	CDN 3083-M
For IEC 61000-4-5	2 x CDN 3083 De-coupling unit	2 x CDN 3083 De-coupling unit
	1 x INA 2631 Coupling network incl. support plate	1 x INA 2631 Coupling network incl. support plate
	1 x INA 2632 Synch. box with IC connector incl. support plate	1 x INA 2632-M Synch. box with Harting connector incl. support plate
	1 x INA 2633 Cable set for NSG 2050	1 x INA 2633-M Cable set for Modula
	2 x Earth rail	2 x Earth rail
Upgrade to 300 A or ANSI coupling	1 x INA 2631 Coupling network	1 x INA 2631 Coupling network
Optional	1x INA 2634 Wheel set with braking features	1x INA 2634 Wheel set with braking features