Fully encapsulated capacitive coupling Unit for Broadband and Narrowband PLC systems.

Cipunet® developed a novel capacitive coupling technology to enable the usage of PLC system in very space limited medium voltage installation. Our long experience with such technologies enabled Cipunet® to release a complete range of couplers for the utility and industrial market.
Nowadays Cipunet® is able to offer coupling solutions for nearly every requirement and environment.

Capacitive Couplers of type CMCxx are mainly used to couple to medium voltage overhead lines and cable systems.
The offered coupling parameters are widely independent of cable type, network configuration and grounding technology.
The novel fully integrated coupling systems are the result of 50 years of experience in PLC coupling systems.

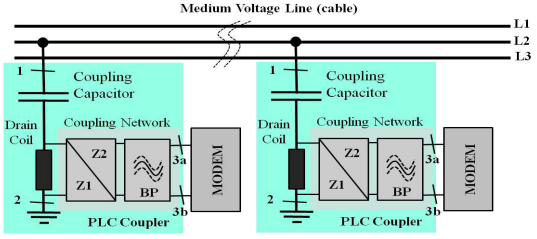
Due to their size CMCxx type capacitive couplers are perfectly fitted for the use in up to date fully integrated compact substations and medium voltage switch boards.

The CMCxx coupling systems are designed for the the following usage:

- Very space limited environments
- Useable with all cable- and switch gear types
- Overhead lines
- Low coupling impedance systems
- For open and closed substations
- Installation in wet or partially submerged areas.
- When Low signal coupling attenuation is required
- Operation and coexistance with existing protection systems
- Simple installation into existing stations
- Fast rollout and simple handling

Installation

The CMCxx fully encapsulated capacitive coupling unit is designed to couple broadband and narrowband PLC signals to the conductor of a medium voltage line. The typical connection schema is a coupler connected between a dedicated phase of the cable or overhead line and the station ground.



1 High Voltage Terminal M12 Cable lug
2 Grounding Screw M12
3 Communication Interface M12 / 4 way

Safety elements

- 50/60Hz impedance between the low voltage terminals less than 2Ω.
- Over voltage arrestor protects low voltage terminal
- 5kVAC spark gap between coupling element and housing
- 5kVAC insulation between high and low voltage terminal.
- 5kVAC insulation between low voltage terminal and ground.

Usage of CMCxx fully encapsulated capacitive couplers.

- Phase to Ground coupling
- Differential mode phase to phase coupling
- Phase to phase coupling
- Parallel switch independent coupling
- Single bus bar coupling
- Multiple bus bar coupling

Technical Data

Nominal Voltage	6,12,24kV/√3
Nominal Frequency	50/60Hz
Frequency Option 1	80kHz – 2MHz
Frequency Option 2	400kHz – 30MHz
Signal Interface	M12; 4 way socket
Capacity 6/12kVAC	4nF (other on request)
Capacity 24kVAC	2nF (other on request)
Operating Temperature	-40 to +80C
Protection class	DIN EN 60721-3-3 IP67
Impedance Matching	1:1/1:2/1:0.2
MTBF	>20 years MIL 217 Rev.F; Nominal Voltage 30^{0}C; Grounded 30 years expected
Weight	6kg (dependent to cable length)
Standard MV Connection Cable length (*Feltoflex*)	3000mm, others on request
Cable Termination	SEI 24, Südkabel GmbH others on request
Bending radius	150mm
Dimensions without cable	Ø130mm x 300mm

Applied Standards

DIN EN 61334-3-22 Sub clause 5.7.2 5.7.3	 5kVAC Impulse voltage continuous current
DIN EN 60358-1 Sub clause 10.1.1 9.2.3.1 9.2.4	 Chopped impulse voltage test Impulse voltage test AC withstand current PD Measurement
IEC/TR 62476:RoHS	Guidance for evaluation of product with respect to substance-use restrictions in electrical and electronic products
DIN EN 60721-3-3	Classification of Groups of environmental parameters and their severities

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