DIMAT

Communication solutions for power utilities

DIMAT CAMT

MV Powerline Communications **coupling unit**

Maximize bandwidth, minimize space

Powerline Communications technology
Powerline Communications (PLC) give power utilities the opportunity to create a high-speed data transmission network using the existing medium- and low-voltage power lines.

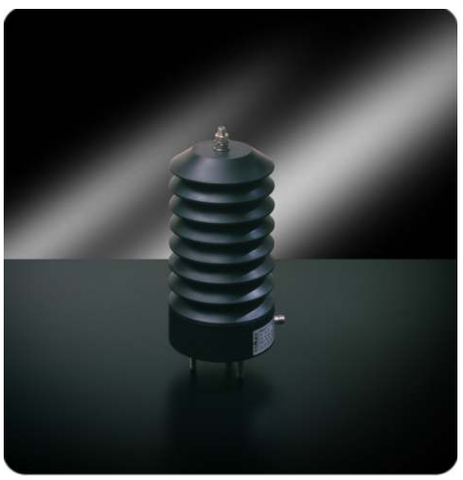
With the use of DIMAT PLC solutions, power utilities can extend their communication backbone to any medium-voltage (MV) power lines, enabling the deployment of a broadband IP network without any civil works, rapidly and at very low installation cost.

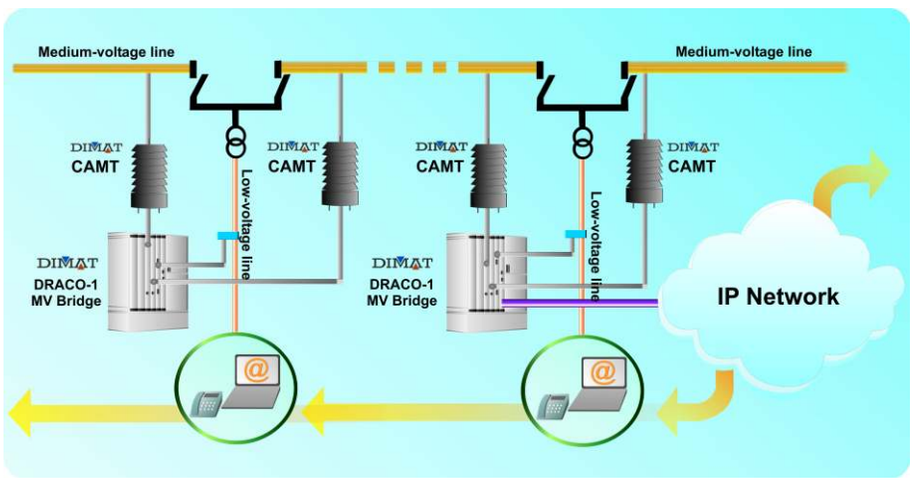
Product information
DIMAT's CAMT coupling unit for Powerline Communications over MV lines is a highly compact unit combining both the coupling capacitor and coupling circuit in the same device. This device maximizes the communication bandwidth and optimizes impedance-matching between the MV line and the PLC equipment. High insulation ensures the complete safety and protection of the users and the communications equipment.

Applications for PLC networks
DIMAT's PLC solution offers great potential to electrical power utility companies. By providing them with high-speed telecommunication services, it enables them to offer their customers a broad spectrum of innovative services such as high-speed Internet, VoIP, and video and audio on-demand. It also enables the use of energy-related services to improve efficiency, such as AMR (Automatic Meter Reading), DSM (Demand-Side Management) and Distribution Automation (Telecontrol).

Key Features
- Compact design
- No maintenance requirement
- High safety
- Phase-to-earth capacitive coupling
- Transmission over power lines up to 24 kV
- Bandwidth from 2 to 38 Mhz
- Version for SF6 cells also available

Under development
- Transmission over 36 kV power lines





Solutions** born from **experience

DIMAT CAMT Coupling unit - Technical Specifications	
Coupling type	Phase-to-earth by means of capacitor of 2 nF
MV power-line nominal voltage	24 kV (between phases)
Frequency range	2 - 38 MHz
Nominal impedance	
Equipment side	50 Ω (other under request)
Type	Unbalanced (Balanced under request)
Line side	20 Ω
Permanent average power	500 mW
Composite loss	≤3 dB in 2 MHz to 23 MHz band ≤4 dB in 23 MHz to 38 MHz band
Return loss (equipment side for 50 Ω)	≥10 dB in 2 MHz to 30 MHz band.(line side for 20 Ω) ≥ 6 dB in 30 MHz to 38 MHz band (line side for 20 Ω)
Harmonic Distortion and intermodulation	≥60 dB
Drain coil	
Impedance at 50/60 Hz	<20 Ω
Current carried at 50/60 Hz	1 A_{rms} permanently 50 A_{rms} for 0.2 s (according to IEC 61334-3-22)
Gas surge arrester (line side)	
Nominal voltage	230 V
Discharge current (ISN)	20 kA (8/20 µs)
Dielectric strength (50 Hz/1 min)	50 kV according to IEC 60358
Impulse voltage (1.2/50 µs)	125 kV according to IEC 60358
Isolation resistance	>10 GΩ
Transformer insulation	5 kVrms /1 min (according to IEC 61334-3-22)
Partial discharges	<10 pC at 15 kV according to IEC 60358 ≤15 pC at 20 kV[(1)]
Operating and storage conditions	
Temperature and humidity	From –25 to +55ºC and humidity relative from 10 to 100% in accordance with EN 60870-2-2 class C2 (climatogram 3K6)
Storage conditions	From –40 to +70ºC and humidity relative from 10 to 100% In accordance with EN 60870-2-2 class C3 (climatogram 1K5)
Behaviour against ageing	In accordance with IEC 60932
Mechanical characteristics	
Connection to line	By means of M10 rod or M10 screw base of approx. 20 mm in depth
Connection to the communication terminal	By means of TNC connector
Connection to earth and fixing	By means of three M8 rods
Weight	5.1 kg
Dimensions	Height : 244 mm Diameter : 137 mm

[1] The measurement was carried out by putting an L-shaped metal grid connected to earth parallel to the unit axis at a distance of 30 cm from the CAMT coupling.

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DIMAT continually strives to improve the quality and performance of its products and services. Consequently, technical information contained in this document is subject to change without prior notice.

05/2003

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