Solutions
born from
experience

DIMAT

Highly compact, highly configurable

Communication solutions for power utilities

Powerline Communications technology

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

This technology is based on the use of OFDM (Orthogonal Frequency Division Multiplexing) modulation. This multicarrier modulation has been optimized for the fast transmission of data over a network that was originally designed for power distribution.

With the use of DIMAT PLC solution, power utilities can extend their communication backbone to medium voltage power lines allowing deployment of broadband IP networks without any civil work, in a fast way and at very low installation cost.
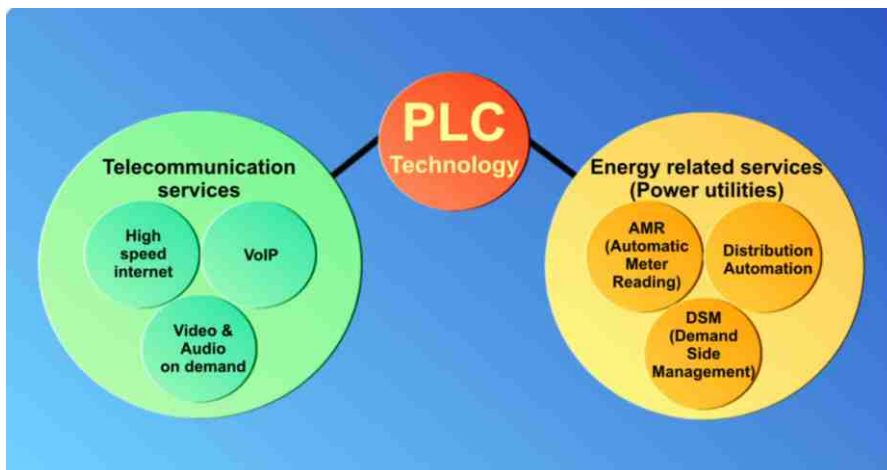
Product information

DIMAT DRACO-1 Medium-Voltage PLC Bridge is a compact, modular and flexible product. It is designed to implement meshed IP switching packet networks by exploiting the infrastructure of existing medium voltage networks.

DIMAT DRACO-1 technology provides extremely high data transmission speeds up to 45 Mbit/s per PLC module. DIMAT DRACO-1 can manage several MV and LV PLC modules; the maximum transit speed over an MV line is up to 135 Mbit/s when 3 MV PLC modules are connected in parallel.

Applications for PLC networks

DIMAT's PLC solution offers great potential to 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 such as AMR (Automatic Meter Reading), DSM (Demand-Side Management) and Distribution Automation (Telecontrol).

Powerline Communications over medium-voltage lines
DRACO-1 bridge capabilities
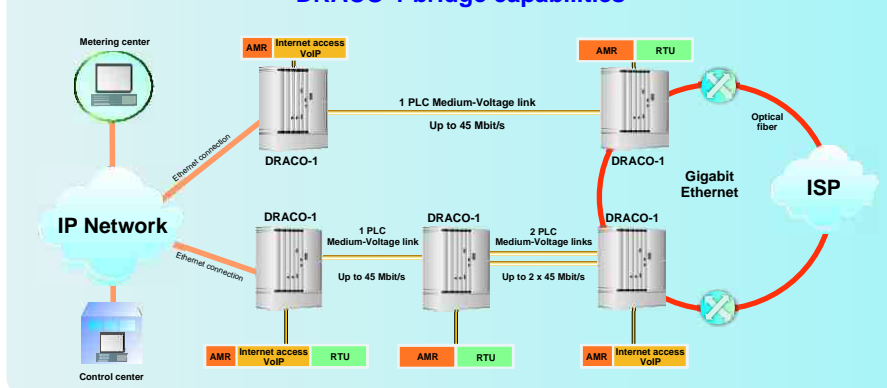
DIMAT's complete PLC solution: DRACO-1 combined with CAMT coupling unit
Ensures a rapid and easy deployment of a wideband data network using existing MV power lines.

For more details on DIMAT's CAMT coupling unit contact us or visit our web site www.dimat.com

DIMAT DRACO-1 MV PLC bridge - Technical Specifications

Terminal configuration

Five available slots for PLC and network interface modules

Medium Voltage (MV) Head End
Medium Voltage (MV) CPE
Low Voltage (LV) Head End
Network interface

PLC Interface (MV or LV)

Connector	Coaxial base
Media	RG-58
Impedance	50
Transmit Power Level	Programmable from –60 dBm up to +15 dBm
Minimum Receive Power Level	-60 dBm (dependent on noise level)
Frequencies	2 to 38 MHz
Modulation	OFDM (Orthogonal Frequency Division Multiplexing)
Typical Latency	< 3 ms
Maximum speed per PLC module	45 Mbit/s (18 upstream and 27 downstream)
Maximum speed per PLC link	135 Mbit/s (54 upstream and 81 downstream)

Network interface

1000 Base-Fx (Gigabit Ethernet)	2 interfaces per module
Media	Monomode Optical Fiber
Wave length	1300 nm
Connector	LC
Transmission rate	1000 Mbit/s

User interface

100Base-Tx

Connector	RJ-45
Transmission rate	100 Mbit/s

VT100

Serial channel	9600 bit/s, 1 stop, parity none, no flow control
Connector	RJ-45

Services

telnet
FTP

Protocols

Internet Protocol	IPv4
Network management	SNMP (v2 and v3)
Dynamic host configuration	DHCP (server and client)
Network synchronization	NTP

Operating system   Linux

Visual indications   Power supply failure
Power supply OK

Operating conditions

Temperature operating range	0ºC / +55ºC
Temperature range with no damage	-10ºC / +65ºC
Humidity	95%
Power Supply	90 – 264 V_{AC}
	Optional redundant power supply
Power Input frequency	47-63 Hz

Applicable Standards

Equipment

Electrical Safety	EN 60950
Radio Disturbance Emissions	EN 55022
ESD Susceptibility	EN 61000-4-2
Radiated Susceptibility	EN 61000-4-3

Power interface

EFT/Burst	EN 61000-4-4
Input Surge	EN 61000-4-5
Conducted Disturbance	EN 61000-4-6

Dimensions

Length	234 mm (Half 19" rack)
Length with mounting ears	269.64 mm
Height	309.8 mm (7 units)
Width	238.5 mm
Weight	7 kg

DIMAT

DIMAT: A world of experience

DIMAT has 35 years of experience in the design and manufacture of communications and networking solutions for the power utilities market, worldwide. Our industry-leading reliability products range from digital and analog Power Line Carrier terminals and their accessories and digital and analog teleprotection terminals. All our products comply with IEC standards.

We aim to become the most advanced company in the world in the power utility communication market. That's why we dedicate more than 30% of our workforce to Research and Development.

DIMAT: Quality assurance you can count on

At DIMAT, we take quality as seriously as you do. Our quality assurance program aims to bring you industry-leading quality in our products and services. DIMAT is ISO 9001:2000 certified. Quality is built into our products every step of the way.

DIMAT: Full life-time service

At DIMAT, we pride ourselves on the quality of our Customer Care. Our workforce of highly qualified professionals is dedicated to developing, maintaining, and implementing the best solutions for your needs.

When you contact DIMAT, you will always talk to the right in-house expert for your query. And we offer complete after-sales assistance during the full life cycle of our products.

Contact us to have all the information you need on our Powerline Communications solution

plc@dimat.com

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.

08/2003

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