devolo
BPL Modem MV

Data communication at the medium voltage level.

The devolo BPL Modem MV is the performer in the medium-voltage network and features a high bandwidth.

High-performance. For application scenarios at the medium voltage level with high bandwidth requirements.

Robust. Maximum interference immunity for data transmission.

Feedback-free. Maximum suppression of signal emission.

Security. Data security through AES 128-bit data encryption.

Simple & practical. Fastest possible installation (switching off the medium voltage generally not required) and lowest maintenance requirements.

Self-organising. Automatic setup of the data network, administration work generally not required.

Independent. Option for battery-powered, off-line operation with 12 V and 24 V batteries.

Optimised. Product optimisation for external signal couplers.

Range. Maximum possible transmission range between two modems using adapted, inductive signal coupling technology. Any number of successively cascaded individual paths.

Experienced. Communication even with open medium voltage switch for ring fields, earthing sleeves and transitions using various cable types.

Scenario

BPL at the medium voltage level
Local network stations have primary importance in the smart grid. They are the crucial communication interface between the network operator and the sensors and actuators, as well as the intelligent measuring systems in the low-voltage network.
For integrating the distribution station into the energy data network, Powerline communication is useful at the medium voltage level. The data signal is transmitted using a PLC modem and signal coupler to the medium voltage line from a distribution station already accessible for communication (e.g. via fibre-optic cable). This is how the data reaches the distribution stations that were not previously accessible for communication. The advantage of a PLC medium voltage solution is that network stations can be integrated into the smart grid quickly, conveniently and cost-efficiently.

Technical data

Standards	IEEE 802.3, IEEE 802.3u, IEEE 802.3x, Auto MDI/X, IEEE 1901
Protocols	CSMA/CA (Powerline)
Transfer rates (gross)	Ethernet: 10/100 (Mbps), IEEE: 1901 200 (Mbps)
Modulation	OFDM, 4096/1024/265/64-QAM, QPSK, BPSK
Range	Symmetric coupling: 800 m Asymmetric coupling: 400 m (can be expanded through repeating)
Security	AES 128-bit layer 2
LEDs	Multi-function LED (active data connection / no Ethernet data connection / no data connection via cable connection)
Frequency band	1.8 - 68 MHz (excluding safety-relevant frequencies and amateur radio frequency allocations)
Device connection	4 x RJ45 (Ethernet), Screw clamps for cable diameters 0.5 mm^2 – 2.5 mm^2 (voltage supply)
Power consumption	Typically 6 W
Power supply	24 V DC nominal voltage (12 – 30 V DC)
PLC coupling	2 x BNC, 50 Ohm impendance, optimised for external signal couplers
Dimensions (in mm)	100 (width) x 70 (height) x 100 (depth). Without connections
Temperature / Storage / Operation	-25 – 70°C / -20 – 70°C
Ambient conditions	0 – 80% rel. humidity, non-corrosive atmosphere, non-condensing
Protection class	IP 40
Certifications	CE Class A (EU)

Example application with inductive medium voltage coupler

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We'll be glad to serve as your consultant.
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