

devolo BPL Headend

devolo
SMART GRID

Broadband data communication in the low-voltage grid

The devolo BPL headend ensures maximum data performance over the power line.



High-performance. For application scenarios on the low-voltage level with high bandwidth requirements and real-time capability.



Cost-effective. Use of standalone infrastructure. No additional communication costs.



Rugged connectivity. Use of devolo multi-phase coupling for significantly improved connectivity compared to previous BPL solutions.



100% building penetration. Every meter and measuring device is accessible over a stable and reliable connection. No impairment of data communication due to massive construction as with radio technologies.



Security. Data security through AES 128-bit data encryption and state-of-the-art security concept.



Scalable as required. Connectivity with just a few devices in the network cluster. Easy to expand, up to full coverage.



Connect it, and you're done! Simple installation in local network stations. The PLC network independently builds itself. On-site configuration is not required.



Self-organizing. Automatic setup of the data network, administrative work is generally not required.



Range. Maximum possible transmission distances due to adapted signal coupling technologies with external couplers.



Investment security. Sustainability through international standards (ITU-T G.9960) and innovative G.hn technology.

Scenario

An intelligent power grid needs reliable data communication.

With state-of-the-art broadband powerline (BPL) technology, the power grid becomes an omnipresent data network for smart metering and smart grid applications.

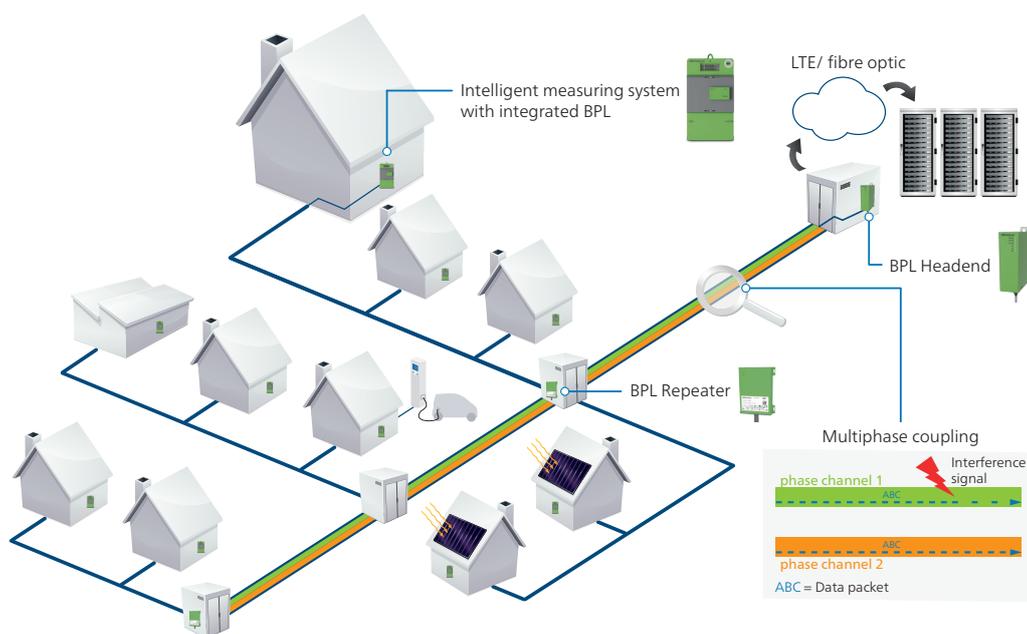
A headend device in the local network station is the starting point for setting up a broadband powerline cluster. It manages the communication between intelligent measurement systems as well as installed measuring and switching devices in the low-voltage grid and the IT backend of the network operator.

All intelligent measuring systems can be connected to the Wide Area Network (WAN) via the BPL network. In addition, the G.hn-BPL technology with its very short response times is ideal for network applications and switching operations.

Compared to other BPL technologies, G.hn ensures a much more stable PLC network. The devolo multi-phase coupling uses two channels for data communication. This makes the connection between the BPL devices much more robust and more performant.

Technical data

PLC standard	G.hn-BPL according to ITU-T G.9960, optimised for access communication
PLC frequency range	2 to 25 MHz
Functionality	ETH over PLC Bridge or LTE over PLC Bridge
Protocols	IPv6, IPv4, IEEE 802.3
LTE (optional)	LTE backward compatible to GPRS / EDGE, EU frequency bands 800 MHz and 1800 MHz (GPRS / EDGE: 900 MHz, 1800 MHz)
Transfer rate	200 Mbps (gross)
Modulation	4096/1024/256/64-QAM, QPSK, BPSK (OFDM)
Range	400 m, depending on the network properties and topology
Security	AES 128-bit layer 2, higher level authentication based on 802.1X (RADIUS)
LEDs	Operation indicator, Ethernet communication, PLC data transmission, LTE communication, network management
Management	SNMP v3
Response time	60 ms (typ.)
Device interfaces	2x RJ45 (Ethernet), 2x RJ12 (external coupler), LTE antenna, pluggable connector with screw terminal (power supply)
Power consumption	6 W (without LTE) / 8 W (with LTE), (max.)
Supply voltage	230 V AC mains (L + N)
PLC coupling	3-phase (multiphase coupling) capacitive or inductive with external coupler each
Dimensions (in mm)	50 (width) x 150 (height) x 135 (depth)
Ambient temperature (storage/operation)	-40 °C to +85 °C / -40 °C to +70 °C
Ambient conditions	10 - 95% humidity (non-condensing)
Degree of ingress protection	IP 53
Protection class / dielectric strength	Class 2 / Category IV
Approvals	CE Class A (EU, CH, NO)
Conformity, further standards	EN 61850-3, EN 60870-2-1, EN 60870-2-2, EN 62368-1



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