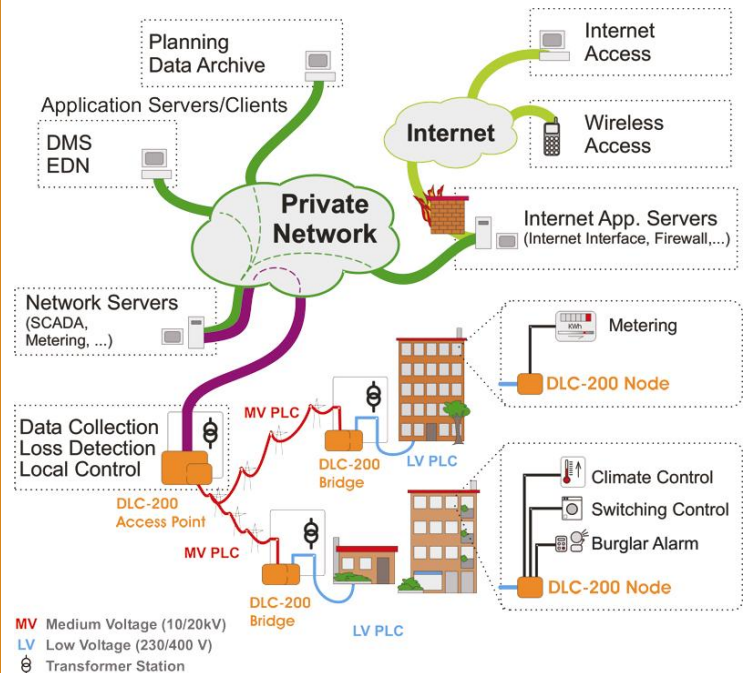


# DLC-200 Bridge



- 2/4-wire power-line interface
- Protocol transformation, emulation of opposite stations and preprocessing of data is possible
- Communication via medium and low voltage lines
- data rates up to 576 kbps
- regulation compliant communication (CENELEC / FCC)



# DLC-200 Bridge

## ■ Mode of operation

DLC-200 Bridge uses the existing distribution lines for communication both inhouse and outhouse. Thereby on the one hand the investment costs are considerably reduced, on the other hand possible variable costs are avoided. As opposed to conventional solutions C-OFDM (Coded Orthogonal Frequency Division Multiplexing) is used as innovative multi-carrier method in connection with an excellent error correction (Forward Error Correction, FEC). Therewith always a reliable and efficient transmission via this severely disturbed medium in the normed frequency band to CENELEC is reached.

## ■ Common Features

- Communication via medium and low voltage lines
- Interfaces
  - RJ45 Ethernet 10BaseT/100BaseTX electrical
  - RS232 isolated UART (Service)
  - Direct connection of capacitive or inductive coupling units for medium voltage coupling
  - One- or three-phase coupling to low voltage
- a frequency range of 9 to 500 kHz
- a bandwidth of 4 to 400 kHz freely configurable
- carriers frequencies freely configurable
- bandwidth efficiency from 0.5 to 2.9 bit/Hz/s
- Memory
  - 8 Mbyte Flash / optionally 16 Mbyte
  - 16 Mbyte SDRAM / optionally 32Mbyte
- Smartcard Reader for standard SIM-cards compliant to ISO 7816 standard (optional) for encryption

DLC-200 Bridges use the DLC-2C / DLC-2CA power line communication chipsets with a HyNet 32S / 32XS 32Bit RISC 200MHz , 200 MIPS communication processor. As operation system a  $\mu$ CLinux is used as well as the simulated and tested REMPLI protocol stack for power line communication. As the name of REMPLI (Real-time Energy Management over Power Line and Internet) already says, fulfilling real-time requirements is the main focus of this protocol stack. The power line communication system uses the single frequency network (SFN) technology.

A DLC-200 Bridge is on the one side (MV-grid) a network layer slave (and possible repeater) and connected to one or more DLC-200 Access Points, on the other side (LV-grid) a network layer master. DLC-200 Bridges are synchronised by the REMPLI power-line protocol and due to it DLC-200 Meters can be connected to several DLC-200 Bridges. Therefore, as well redundancy is given as multiple and dynamic changing routes are handled. Furthermore, every DLC-200 Bridge can also be a DLC-200 Node in parallel. This allows to connect a data concentrator of any AMR supplier to a DLC-200 Bridge.

## ■ Power Supply

- Input range 200 VAC ... 255 VAC/40VA
- Input protection, Powerfail detection
- Input UPS 25-30V/2A
- Internal voltages 5 V<sub>DC</sub>, 3.3 V<sub>DC</sub>, 1.8 V<sub>DC</sub>

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### Technical Data

#### Frequency Range

9 – 500 kHz

#### Freely configurable Band Width

4 – 400 kHz

#### Data Rates

9.6 – 576 (288 CENELEC) kbps

#### Maximum Range

500 m – 1 km at low voltage  
up to 15km at medium voltage

#### Medium Voltage Coupling

capacitive or inductive

#### Further Features

- carrier frequencies freely configurable
- Transmission with OFDM and FEC
- synchronous and asynchronous transmission
- complies with standards EN 50065 (CENELEC), IEC 61000-3, FCC part 15 Subpart B
- Transmission via medium and low voltage lines

#### Operating Conditions

Temperature range 0° to 70°C, optionally –40° to 70°C  
Humidity 5%-95% no condensing

#### Case

Dedicated robust aluminium case mountable on standard DIN rails (IP32)