EMPC100 Concentrator

The EMPC100 Concentrator is a part of Enermet's AIM AMR system, which has been designed for energy utilities and property maintenance companies, to meet the need of cost-effective meter reading. EMPC100 enables communication between the AIM AMR metering system and the terminal units.

The AIM AMR metering system can read and control several terminal units via an EMPC100 Concentrator. An EMPC100 reads the metering devices automatically and stores the data for later retrieval by the AIM AMR system. The system only needs one connection to the concentrator instead of separate connections to each terminal unit. This allows efficient and reliable communication with less cost.

The voltage quality monitor enables constant monitoring of delivery quality and thus better customer service.

Reliable data gathering

The EMPC100 concentrator reads the metering devices automatically, using a configurable reading cycle. If the first reading of a meter is not successful the EMPC100 re-reads the meter as defined in its configuration. Metering data is therefore always retrieved reliably. The EMPC100 also stores the read metering data for later retrieval.

Standardised communication solutions

The EMPC100 concentrator communication with the metering units in the low voltage network is carried out using the LonWorks® network, developed by Echelon® and used by thousands of manufacturers in their products. Metering data

and control commands are transferred in low voltage network ensuring reliable communication. Communication between the EMPC100 and the metering system is TCP/IP based and data can be transferred using LAN (Local Area Network), GSM/GPRS communication, Enermet's M100-T PSTN modem or modems that support Ritex M1 interface.

On-time process information

The EMPC100 concentrator's voltage quality monitor allows careful monitoring of delivery quality. EMPC100 registers all occurrences of delivery abnormalities that exceed the defined boundaries. This gives you accurate, on-time information on the delivery processes, and helps improve customer service.

Easy installation

The metering devices that are read and controlled by an EMPC100 concentrator can be introduced to the metering system by using the AIM AMR software.

Remote configuration

The EMPC100 concentrator can be remote configured. Remote configuration can be used to add new functions, change the configuration or download new software. Thus all changes can be handled cost-effectively, without needing to visit the site to control or monitor the EMPC100.

EMPC100 in the AIM AMR metering system

The EMPC100 concentrator functions as a link between the terminal units and the AIM AMR metering system and transmits information, such as control commands and register readings, between them. The EMPC100 communicates with the terminal units using Echelon's LonTalk® protocol. EMPC100 supports Enermet's repeaters. The following communications media are available:

- PLT-22A network communication, A-band
- PLT-22C network communication, C-band
- PLT-22C TP, C-band

Flexible and cost-effective

Thanks to AIM AMR´s modularity, the system can be built step by step according to your needs. As the system utilises the existing communication network of power lines, the installation costs remain low and communication costs are minimised.
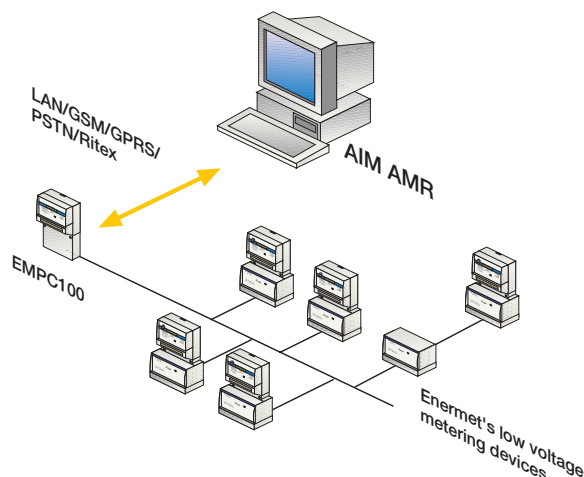
EMPC100 Technical Specification

Communication standards
- LON protocol
- TCP/IP and PPP protocols

Communication options
- Power line PLT22, A-band
- Power line PLT22, C-band
- TP PLT22, C-band
- Dual band GSM/GPRS
- Ritex M1 modem, external
- M100-T PSTN modem, external
- LAN, 10 base-t Ethernet

Communication speed
- A-band: ca. 2.6 kbit/s
- C-band: ca. 4 kbit/s
- GSM/GPRS: default rate 9.6 kbit/s
- Ritex: default rate 9.6 kbit/s
- PSTN: default rate 38 400 kbit/s
- LAN: ca. 10 Mbit/s

Signal range
- Power line, A-band and C-band:
  ca. 300 – 500 m (without repeater)
- Ritex: 4 km with default speed of 9.6 kbit/s

Operating characteristics
Temperature ranges
- Operating temperature: 0…+50 °C.
  Other temperatures possible with external housing and cooling/warming
- Storage temperature: 0…+50 °C

Humidity
- Operating humidity: 10% to 90% RH
- Storage humidity: 5% to 95% RH

Operating voltage
- 1x230 V or 3x230/400 V, -20%…+15%

Frequency
- 50 Hz

GSM/GPRS modem characteristics
- Dual band GSM/GPRS modem (900/1800 MHz)
- Fully type approved SIM-card holder
- Remote control by AT commands
- Bit rate with EMPC100 9.6 kbit/s

Memory
- Limitless, circular memory
  (First In First Out principle)
- 2 – 10 Mb depending on software version and configuration

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