

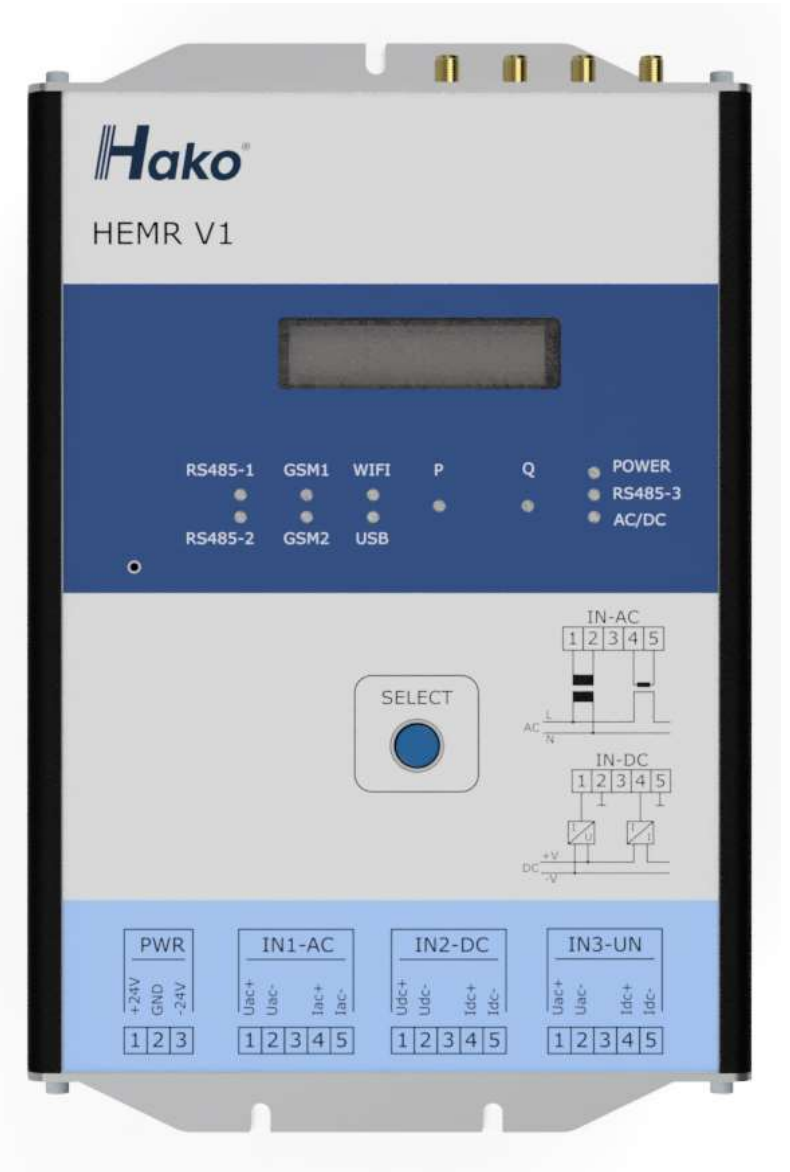
ENERGY METERING DAY

PRESENTATION

HAKO, a.s.

HEMR V1 electricity meter

- **HAKO ELECTRICITY METER FOR RAILWAYS = HEMR**
- HEMR is a device with additional modules to provide measurement, communication, secondary data storage, calibration data storage, and display of device values and settings.
- It combines a measurement, communication and transmission part of the EMS in one **stand-alone device**. EMF and DHS are **working separately** to increase stability and security.



Technical parameters

- The electricity meter provides the required accuracy of **0.5R up to 0.2R** according to EN 504 63.
- It meets the requirements of **TSI LOC&PAS NK(EU) no. 1302/2014** and **EN 504 63:2017**. Certification finished on 30/09/2020.
- Broadband power supply for on-board power supply from **24V to 110V, class S2**.
- Input module allows the configuration of voltage and current sensors using an identical „digital“ part of the electricity meter.

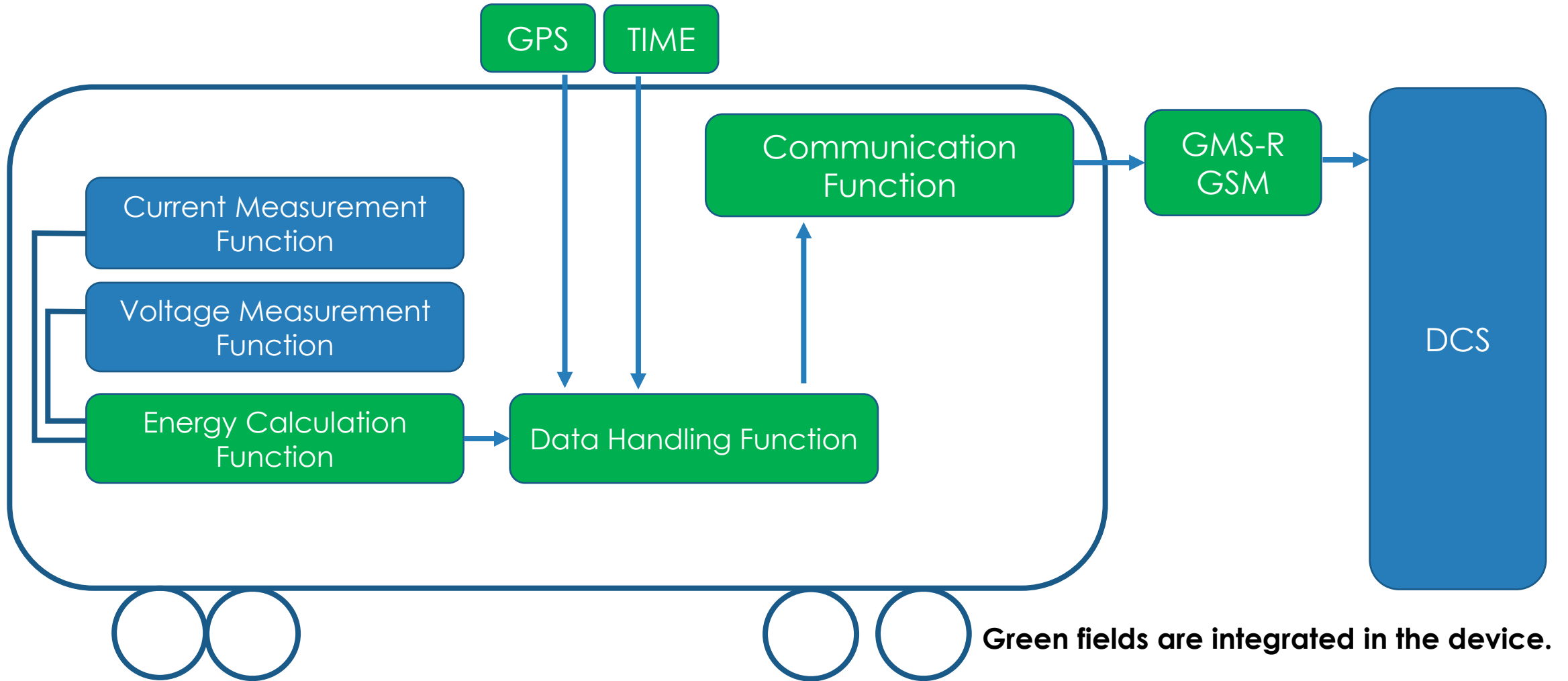


Technical parameters



- Multiple communication interfaces which are galvanically separated - **2x GSM or GSM-R, USB, 2x ETH, 3x RS485, Wi-Fi**
- It includes **FTP MAIL BOX** and **HTTP protocol** according to EN 504 63-4.
- Extended communication function – a **transparent bridge** enabling the transmission of any additional data from the train equipment via RS485 port directly to GSM2 without effecting the safety of the main measurement function.
- **OLED display** (2x16 characters), LED signalization and a single button are used for control.

Implemented functions



EN 504 63-4 application services

REQUEST	AUTOMATIC
RequestCEBDBlocks	AutomaticTransferCEBDBlocks
RequestEvents	AutomaticTransferEvents
-	AutomaticTransferHeartbeat
RequestReadingBlocks	AutomaticTransferReadingBlocks
RequestCommunicationConfig	AutomaticTransferCommunicationConfig
ChangeCommunicationConfig	-
RequestAssetData	AutomaticTransferAssetData
RequestState	PeriodicTransferState

We have implemented all mandatory and optional application services according to EN 504 63-4

Maintenance and verification

- The device is designed as **maintenance-free** and all service operations must be performed in our company.
- Based on the design of the device and the stability of components for metrological measurement, the accuracy is verified every **10 years** (5 years according to the local law regulation) and expected **life-time is more than 20 years.**
- We provide a possibility for our customers to use the service based on a service agreement. We can rent our device during the verification period.
- The device can be remotely configured and monitored according to EN 504 63 via FTP MAIL BOX or HTTP, or via WEB INTERFACE.

Future development

- A „**HEMR SX**“ **version of electricity meter** is currently under development.
- The electricity meter with a communication unit will allow to measure energy consumption on stationary traction power supply transformers and allows the measurement of up to **three powered sections simultaneously**.
- Development of own DCS as part of an energy management module in our **NOETiC i4.0**. SCADA system.

Contact us

Should you be interested in our products, we will be happy to answer any questions you may have.

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Thank you for your attention

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