

# Product snapshot

## REM102

Energy Metering



HaslerRail's range of on-board electronics can be interconnected to equip your rail vehicles with a fully networked system for data recording, speed sensing, data and energy management and visualisation

# REM102

## Dynamic energy metering to monitor consumption and drive accurate billing

HaslerRail's REM102 is an EN 50463:2017 certified device designed to measure, record and transmit metrological data related to electrical energy usage of rail vehicle operations.

Mounted within the rail vehicle, it tracks consumed and regenerated energy on both AC and DC traction power systems. Meters are crucial for efficient energy management, enabling rail operators to monitor consumption, optimise energy use and improve economy on a route-by-route basis.

Via its Data Collection Service (DCS) REM102 facilitates energy billing and assists energy efficiency analysis. By providing detailed data on energy consumption, energy meters support sustainable practices and contribute to the overall environmental and economic objectives of rail operators.

REM102 is modular and flexible, allowing integration of the Energy Calculation Function (ECF) and Data Handling System (DHS). ECF calculates the vehicle's consumed and regenerated energy profile from voltage and current inputs. DHS generates and records Compiled Energy Billing Data (CEBD) and transfers it via the Mobile Communication Function (GSM-R, 3G, 4G, or Wi-Fi) to the ground-based DCS.

For energy metering over an Ethernet or serial network, REM102 can operate in conjunction with multiple HaslerRail DMeters which support distributed voltage / current measurement and energy calculation. This configuration can be used to monitor the energy consumption of the entire train or that of a specific vehicle sub-system.

REM102 provides a user-friendly interface via an integrated OLED display and a web-based monitoring and service application.

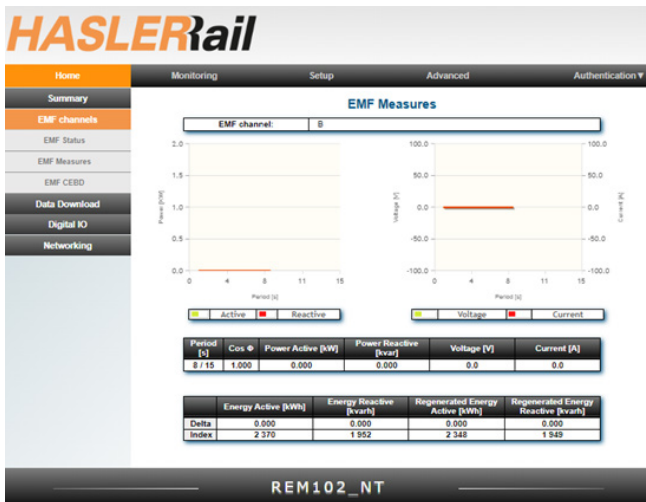
For metrologically certified energy metering on-board locomotives, BEMUs, bi/trimode trains, trams and metro cars, REM102 has it covered.



REM102 front panel connections

### Observed standards

EN 50155:2021	EN 61373:2010 +AC:2017-09
EN 50463:2017	EN 45545-2:2020
EN 50121-3-2:2016 + A1:201	IEC 62443-4-1/2



Screen shot from REM102 web-based tool