ENERGY METERING
SAFETY

The Traction Protection System of TEMS includes functions certifiable to a safety-integrity-level SIL2. It detects catenary status, overcurrent, and if required, triggers the VCB (Vacuum Circuit Breaker). The development has been done in line with the safety standards EN 50126, EN 50128, and EN 50129.

Additionally, the energy meter can interface with the TELOC® Event Recorder family and stores energy, voltage, and current measurement data in real time.
PRODUCTS

AC/DC SENSORS

A wide range of rugged AC/DC voltage and current transducers are available depending upon the train class and catenary systems. The accuracy class of all sensors is 0.5R in accordance with EN 50463. The Current and Voltage Measurement Functions (CMF, VMF) can be integrated in one single device for space and weight saving. Transducers with double output are also available to be used for traction interface as well as for energy measurements.

ENERGY METER

REM102 is the multi-functional energy meter of Sécheron Hasler Group global solution for the Energy Metering System (EMS) for rail vehicles operating on AC or/and DC networks.

It can be delivered as a stand-alone device or combined with external voltage and current sensors as well as with other high voltage devices such as Sécheron circuit breakers.

The REM102 modular and flexible concept allows the integration of the Energy Calculation Function (ECF) for consumed and regenerated energies computed from both voltage and current inputs with the Data Handling System (DHS). This latter produces and records the Compiled Energy Billing Data (CEBD) assembling energy data with other data including time and location coming from the integrated Global Positioning System (GPS), as well as it transfers CEBD data via the integrated communication unit (GSM-R/3G/4G or WiFi) to ground based Data Collecting System (DCS). REM102 can handle both traditional passive as well as active sensors managing both analogic and digital interfaces.

Our customers can rely on HaslerRail dedicated teams to support them during all their project phases to recommend the most appropriate solutions for their applications, and will find in Sécheron Hasler Group worldwide service points network an efficient support during all the life time of the products.

TRACTION PROTECTION RELAY

RTP100-R0 is a multi-functional programmable device used in AC or DC rail vehicles to monitor traction parameters, such as voltage and current, and to protect the traction equipment against prejudicial electrical events, including overcurrents and short-circuits or catenary supply voltage out of safe operational range. In case measured parameters exceed RTP100 configured thresholds, output relays wired in series with the control circuit of the vehicle main circuit breaker will trigger it to maintain the vehicle and passengers in safe conditions. It can also be used in coordination with the TCMS (Traction Control & Management System) to detect the vehicle supply voltage.

RTP100 parameters can be configured by the customer through an application software.

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Our energy metering solution can also be completed with Sécheron Hasler Group TEMS Energy Portal working as the Data Collecting System (DCS).
SUCCESS STORIES

DC SYSTEMS INSTALLED ON FLIRT ETR350 STADLERRAIL FOR ITALY

The new trains FLIRT ETR350 TPER fleet have been equipped with DC Systems composed of multiple energy metering points per train unit.

The scope of supply includes indoor DC Sensors, REM102 energy meters and combined GPS/GSM antenna.

All energy measurement and monitoring data are collected and managed through the HaslerRail Data Collecting System (DCS) www.energyportal.com.

AC SYSTEMS INSTALLED ON CLASS 88 DUAL LOCOMOTIVES STADLER VALENCIA FOR UK

This project includes the traction protection function on a standard AC metering system. The protection function (integrated in the energy meter) triggers the VCB control in case of overvoltages, overcurrents and short circuits. Additionally, the leakage current is monitored.

The scope of supply is:
- Standard AC energy meter with integrated 3G communication unit
- AC Transducers with dual output (EMF+Traction)
- Ethernet TCMS interface
- WiFi commissioning

At DCS level the following functions have been used:
- Full remote access
- Real time monitoring

Advantages:
- Reduced system cost
- Reduced installation time
- Increased system diagnostics

AC SYSTEMS INSTALLED ON CLASS 800 IEP TRAINS HITACHI RAIL FOR UK EUROPE

For the Hitachi IEP (Intercity Express Program) project we deliver energy metering systems composed of an energy meter, AC voltage and current transducers. The transducers have the capability to simultaneously manage the energy metering signal and the traction management function.

The energy meter is equipped with an Ethernet based TCMS interface that allows the exchange of information, such as voltage, current, power readings and energy data. Data will also be sent to the Data Collecting Service.