

Vectron

Energy Metering System

June 12th, 2025

Eress Forum



A proven platform with more than 1 billion kilometers mileage!

Enabled by a consistent platform philosophy
with ONE common ...

Product Management

Fleet Management

Software Management

Homologation Management

Obsolescence Management



E-Vectron



Dual Mode



Smartron

A versatile offering of variants based on a genuine modularity among its key subsystems

» *„Creating corridors – connecting Europe“*



E-Vectron

» *„Keeps going where the wire ends“*



Vectron Dual Mode

» *„Focused to the max“*



Smartron

Sold 2240

327

146

Customers 72

26

18

A unique standardized production system

Production Capacity
scalable across all product variants

Key Components
designed & manufactured in-house

Quality & Delivery
consistently high and on time

The Vectron Community. Around 1,700 locomotives in use by over 120 operators throughout Europe.



For flexible use across Europe

Pioneering European cross-border traffic with:

- Authorizations received in 20 countries and further in progress
- ETCS Baseline 3 authorizations in 14 countries
- Market leading amount of ETCS system compatibilities for operation on ETCS routes
- Corridor extension packages available depending on variant

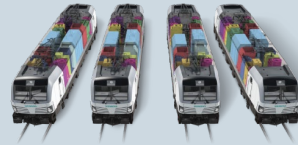
ETCS: European Train Control System | BL: Baseline | * as of 03/2025

 Authorisation in place  Authorisation in progress

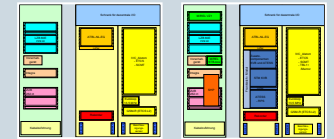
For flexible use across Europe

Each component has its defined place

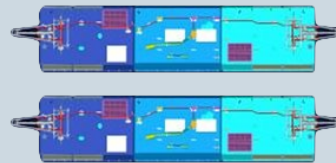
Locomotive body components



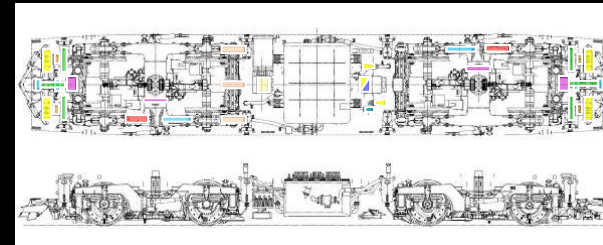
Train protection components



Roof-mounted components



Antennas



Driver's desk components

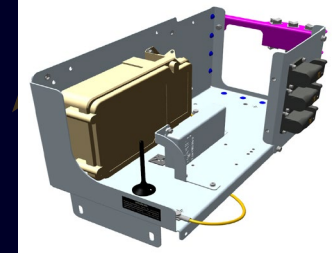


Easier convertibility and retrofitting prepared for changing business models

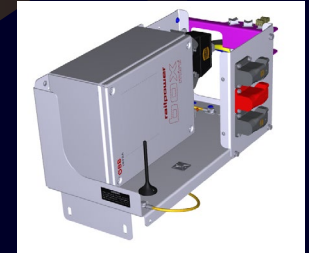
For flexible use across Europe

Different Meters depending on Customers Data Collecting Service (DCS) request:

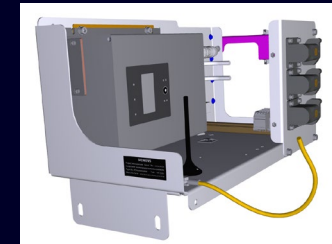
- Meters from ÖBB Infra, LEM, HaslerRail, POLL and Sesto can be chosen by the customer
- An integration box is used to connect with the different interfaces of the meters
- Measuring transformers and transducers depend on E-Vectron or DualMode Vectron, but not on Meter
- Always equipped with the same GPS-Roof Antenna
- Partially the configuration of the requested DCS can be done during commissioning



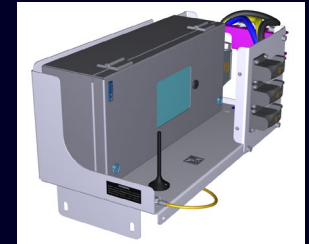
LEM
EM4TII+



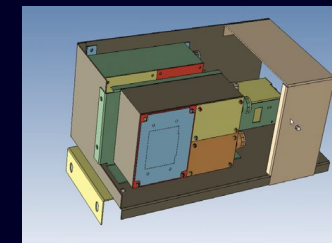
ÖBB Infra
RPB mini 2.0



HaslerRail
REM 102



POLL
CEGM-3000



Sesto
EM3000 V3

For flexible use across Europe

EN 50463:2017 was a big step for an interoperable meter, but there are still some issues to solve:

- When will all on ground settlement systems exchange its data with other settlement systems?
- Can't there be a one-stop-shop for a reduced numbers of Certificates of the metering system?
- Where is the one meter (with one material number), which can easily be used for all DCSs?
- Over the air Updates for easier and faster problem solving are necessary
- eSIM could reduce the effort for commission and logistics of the meter
- **Will the meters fulfill the requirements by the EU Cyber Resilience Act in time?**