

RAIL TECH

LEX

overview

RailTech | a Solution For Professionals



brave new world

In our fast-paced world, the inextricable link between IT and business is now so hardwired that it is almost impossible to imagine one without the other. Put quite simply, if your company is not digitalised or online 24/7, 365 days a year, then it probably isn't functioning at all.

"The advance of technology is based on making it fit in so that you don't really even notice it, so it's part of everyday life"

/Bill Gates/

From small, private firms to large scale businesses, no matter the company **RailTech** can offer professional railway solutions for your needs.

We are also on hand in times of need and can provide crucial backup and troubleshooting, as well as the latest cybersecurity to protect your businesses most precious assets.





our services

At, **RailTech**, we are convinced that any innovation introduced in the company must not only bring benefits in terms of security, control and efficiency, but also it has to be easy to use for the end consumer.

Our goal is to offer a full and individual digital solutions to adapt to our customers' business and their unique requirements.

There for We, **RailTech**, have developed the following solutions and services that have stood the test of time and experience:

- ✔ **LEX EMS** - a tool for centralized real-time planning and monitoring of railway transportation processes.
- ✔ **LEX analytics** - a tool for monitoring the operating parameters of technical units in real time or in a selected period of time
- ✔ **LEX video** - a tool for real-time and archived visual control of technical units.
- ✔ **IT system support** - consultations, development, maintenance of any IT systems
- ✔ **Business consulting**

Our solutions are being used on a daily basis in the railway networks of Latvia, Lithuania and Ukraine and are an integral part of the daily life of our customers



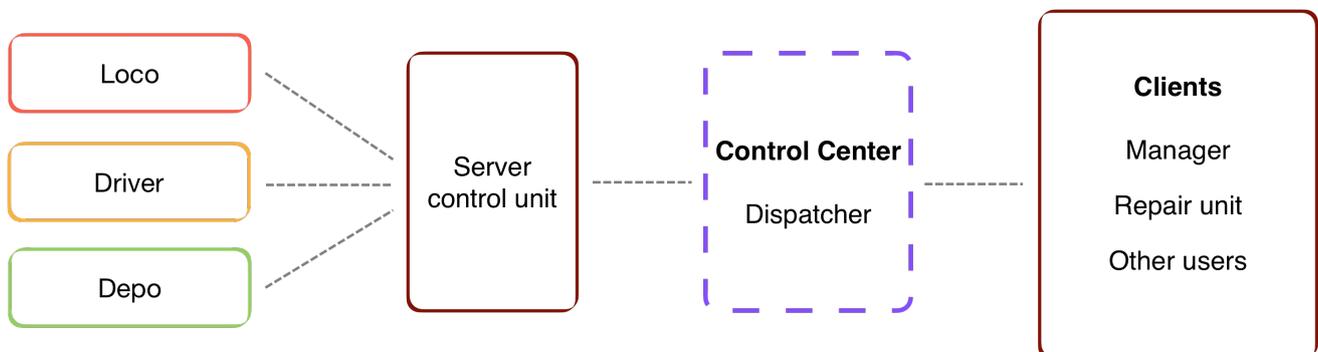
LEX EMS

The **LEX Electronic Management System (EMS)** developed by **RailTech** is a complex information system developed especially for the railway industry with the aim of digitalisation of production processes.

LEX EMS is designed to give you complete control over the planning and execution of tasks or orders from anywhere in the world, without wasting your precious time.

Work with **LEX EMS** is provided by WEB interface and a mobile application, providing the best user experience for all users. The system can be fully integrated with other Client's databases and programs to ensure maximum automation of data exchange and to minimize the impact of the human factor.

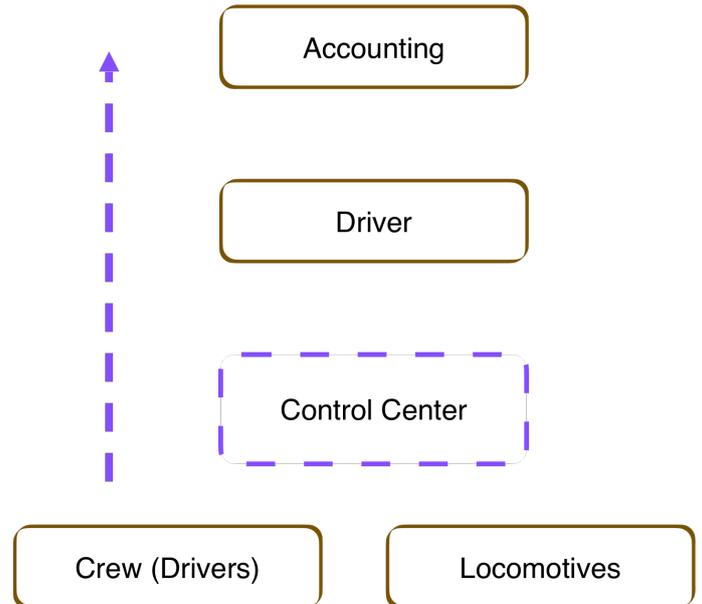
LEX EMS basic principals



The base for success of implementing **LEX EMS** is to centralise task or order management with the help of the Control Center (CC).

The basic rule for **LEX EMS** to work is to prepare of all of the necessary information for CC. Particular attention must be paid to the crew and technical units.

These positions are essential for CC decision-making in the day-to-day planning, management and control of task or order fulfilment from both the crew and technical units.



The CC controls of the order fulfilment of technical units and personnel in OVC with the help of the subsystem Driver and Loco, as well as with the help of changing statuses as a result of the activities performed by the personnel.

The subsystem “Driver” controls the whole cycle of the crew starting with work and rest records in accordance with the requirement of the national law, continuing with crew briefings, crew queus, and control of the validity of certificates, etc.

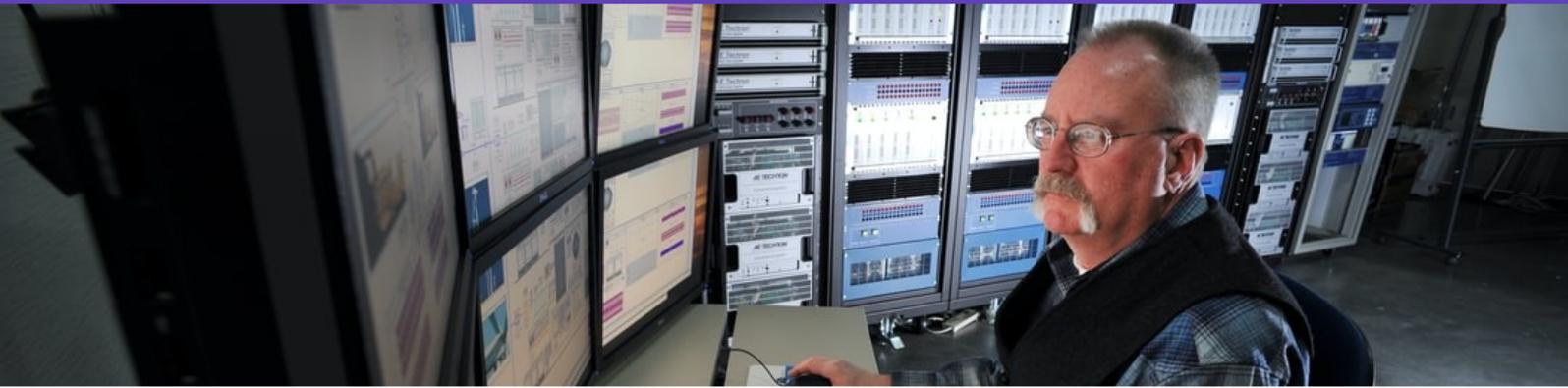
The subsystem “Loko” is responsible for the operational control of the technical units - fuel quantity, mileage and status of the technical units. There is also a function of the electronic Technical Condition Log of technical units, in which you can mark data on damage, as well as add photos, videos and enter data on their repairs.

“You can't just ask customers what they want and try to give them that. By the time you get it built, they'll want something new.”

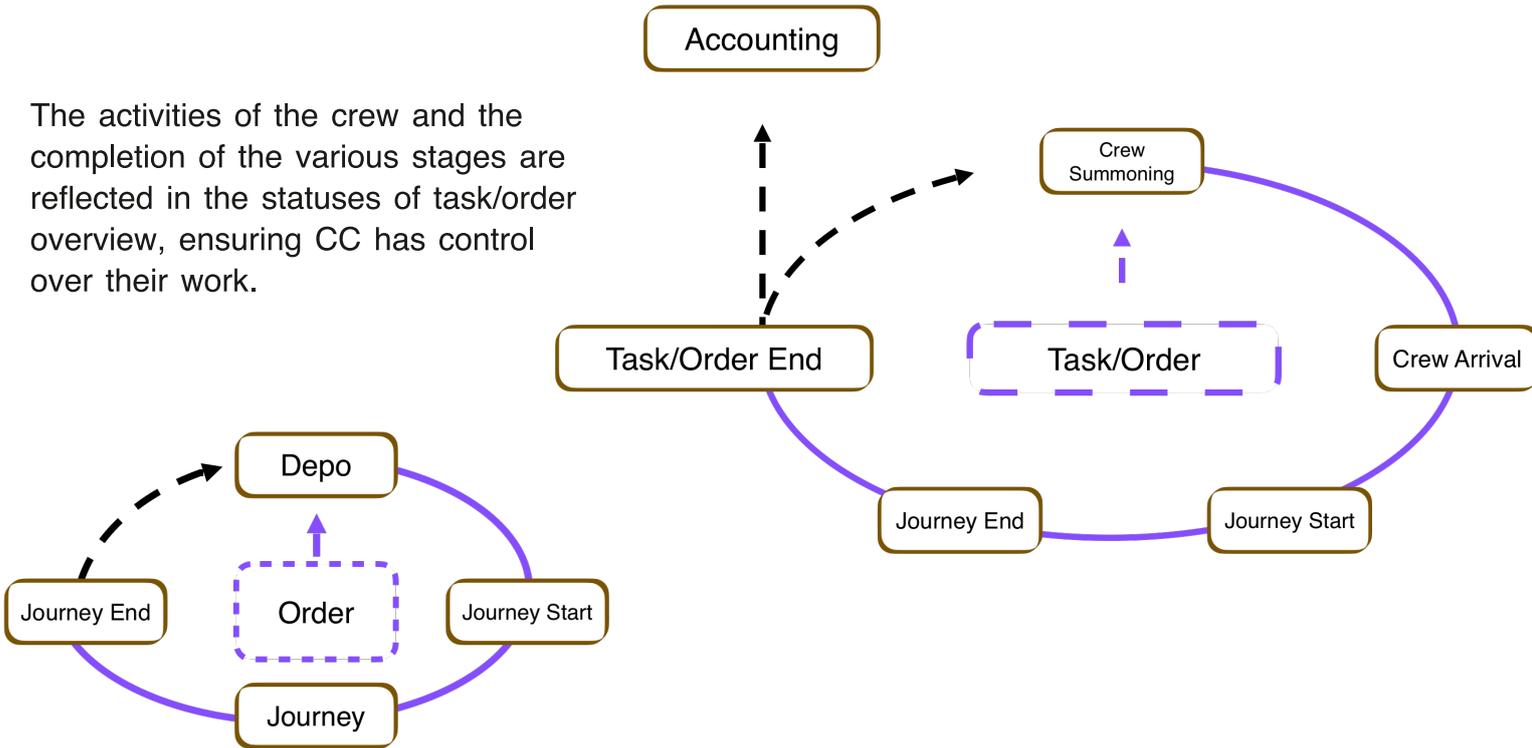
/Steve Jobs/

The subsystem Depot controls all operations with the technical units and their readiness for operation when vehicle is stationary in the Depot. Users have the ability to mark all activities with technical units, such as heating, equipping, etc.

In **LEX EMS** has the opportunity to add databases of working time regulations, as well as a separate electronic Instructor's log.



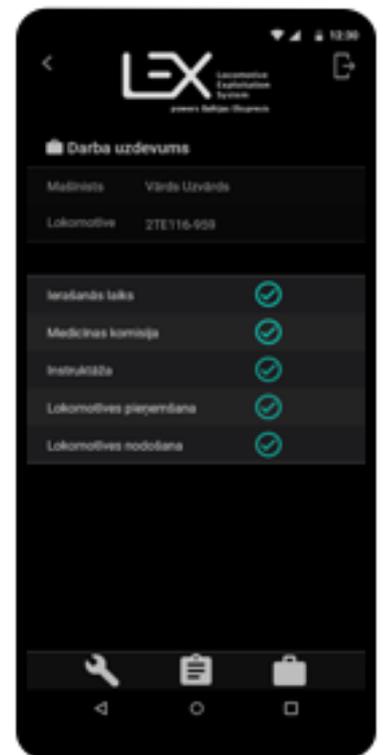
The activities of the crew and the completion of the various stages are reflected in the statuses of task/order overview, ensuring CC has control over their work.



LEX app

The LEX mobile app is essential tool for the crew to fill out the task or order.

The **LEX app** is available for Android and iOS platforms. You must have access to the Google Play market or the App Store and Google Play services. The mobile phone must have an internet connection.





control **everything**

LEX 3/1 is designed and put into operation to ensure the supervision and management of the technical units as well as the control of the crew and maintenance personnel.

The combined **LEX 3/1** system consists of three basic systems:

1/1 – CCTV **LEX video**

2/1 – Technical unit parameter control system **LEX analytics**

3/1 – Fuel management system **LEX FUEL**

All basic control, data collection and data processing elements are combined in one **LEX 3/1** system unit.

The external elements of the **LEX 3/1** system are:

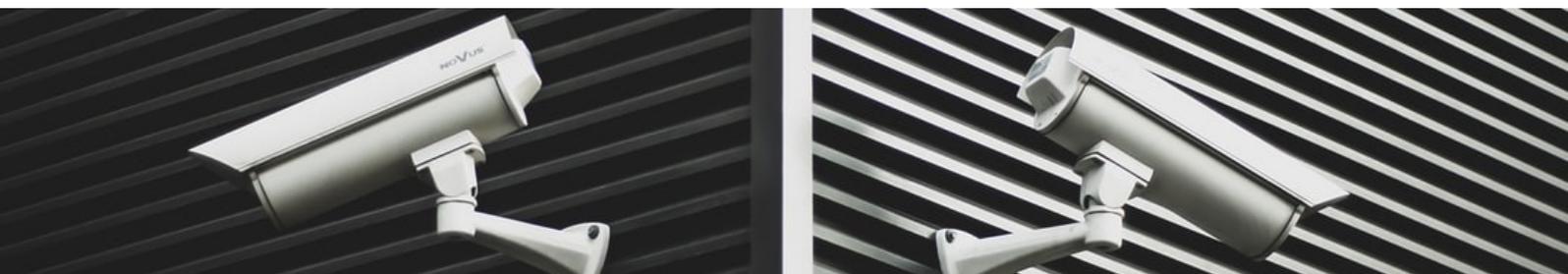
- 🔗 **Fuel sensors SENS** - located in the fuel tank of the unit
- 🔗 **LEX FUEL monitor** - display of diesel fuel information
- 🔗 **Monitor - LEX video components**
- 🔗 **High voltage measurement module**
- 🔗 **CCTV cameras**
- 🔗 **Data transmitters**



The goal of the system is to reduce the operating costs of the locomotive fleet and increase the efficiency of the use of locomotives. **LEX analytics** collect data on the most important parameters of diesel locomotives and transfers them to a data processing server.

The obtained parameters of technical units are visualized graphically. Parameter analysis and control are the main tools to achieve the result. The WEB. service allows you to configure the display of information in a user-friendly way. It is able to analyze and control the parameters according to the User-defined relationships.

The system is designed for installation on vehicles. Its components have been developed taking into account the operating conditions and the operation on railway. The system is agile allowing data to be exchanged with other applications.



LEX video

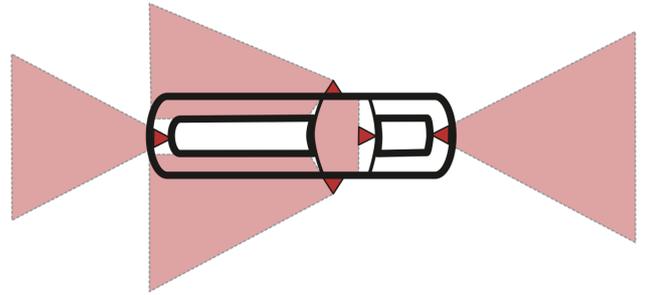
We offer two options:

LEX video budget - professional transport design with the possibility to connect up to **eight** 2Mpx AHD CCTV cameras with a maximum resolution of 1280x720

LEX video professional - professional transport design with the possibility to connect up to **eight** 4Mpx IP CCTV cameras with a maximum resolution of 2688x1520

LEX video is designed for the usage in vehicles, taking into account the high risks of vandalism.

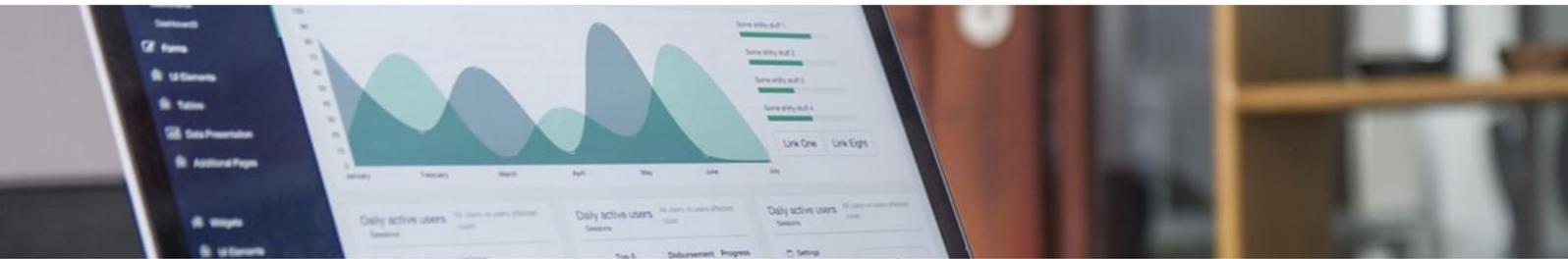
Video image, recording archive and location of technical units are available online on GSM or GPS communication channels. The video surveillance archive and the location of the technical units are available for at least 20 days.



The autonomous system power supply allows the system to be maintained for at least 30 minutes after the main power supply has been switched off

The system is equipped with component current overload protection and incoming power control and unit speed control by GPS

The system increases personnel safety and control over dead zones with a onboard display.



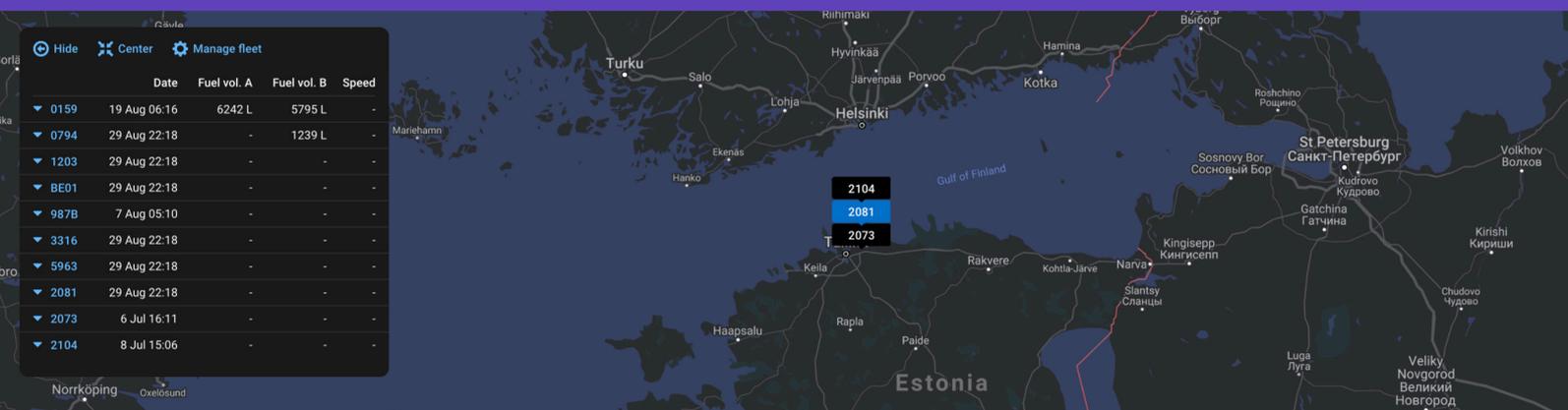
LEX analytics

LEX analytics is a WEB service that receives and processes the incoming data in real time.

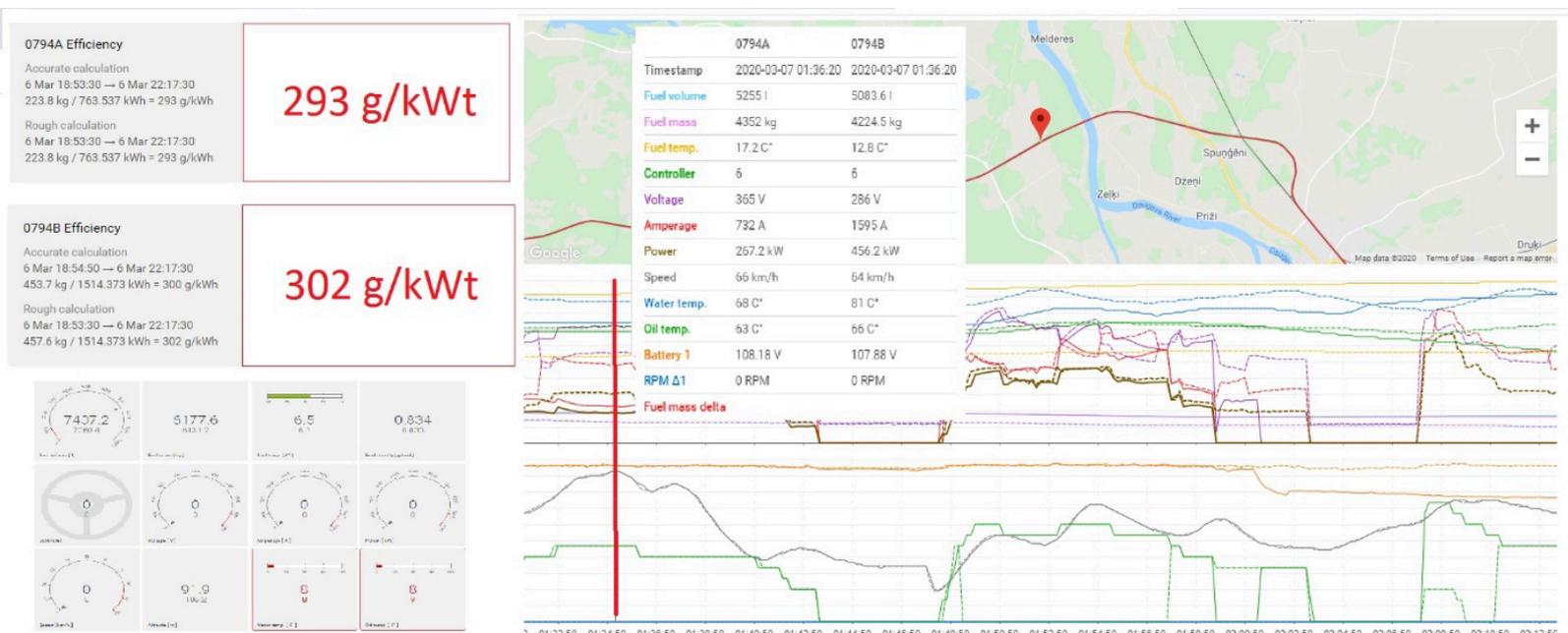
LEX 3/1 measures, transmits and displays data the following data:

	LEX analytics	LEX FUEL
speed (kph/mph)	Engin RPM	fuel volume (liter)
power supply indicators	driver controller	Mass (kg)
battery voltage (V)	main generator voltage (V)	temperature (t°)
power unit	amperage (A)	density (g/cm ³)
coolant temperature (t°)	power (kW)	

** the amount of data to be measured and controlled by LEX analytics can be changed according to Client's needs*



LEX analytics is a tool that is designed to compare the work between two technical units to achieve maximum efficiency and technical condition control.



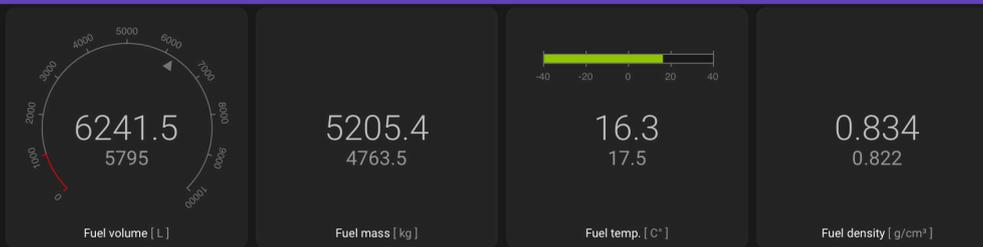
LEX FUEL

LEX FUEL system is equipped with two magnetostrictive level meters. SENS PMP-201-D measuring devices are designed and manufactured for use in potentially explosive atmospheres with all combustible materials of explosive groups IIA, IIB. The medium to be measured may be flammable liquids, gases, mists and vapors at temperatures between -50°C and $+60^{\circ}\text{C}$.

The permissible error for measuring the diesel fuel level of a diesel locomotive shall not exceed 0,5%.

LEX FUEL is additionally equipped with an external digital display that reflects diesel fuel measurements.

System measurements can be integrated with other Customer databases or programs. The data can be used in accounting reports. **LEX FUEL** can be used both on stationary technical units and on transport.



LEX 3/1 technical specification

	LEX video budget	LEX professional
Base unit size	300×400×200 MM	300×400×200 MM
Input voltage*	44 - 144 VDC	44 - 144 VDC
System voltage	12-36 VDC	12-36 VDC
Video surveillance system codec	H.264	H.265/smart H.265 /H.264/ smart H.264
Display diagonal*	10.1"	10.1"
CCTV recorder	8CH AHD MDVR (built in GPS + 3G/LTE/WiFi)	8CH MNVR (built in GPS + 3G/LTE/WiFi)
CCTV cameras*	2 Mpx AHD, IR 20m	4 Mpx IP, IR 30m
LEX analytics & FUEL		
Input voltage*	5-36 VDC	
Sensor model	SENS PMP-201-D	
Permissible error	shall not exceed 0,5 %	
LEX FUEL accuracy	Fluid volume 0.1 MM Temperature 0.1 Density 0,01 kg/m ³	

* - LEX parameters can be changed according to Client's needs



contact **RailTech**

We would be delighted to introduce you to our products and we will love to get your feedback.

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