SEZTEC
Smart Systems

2023

Fuel Level Sensors & Fuel Consumption Meters for Diesel and other Liquids.

www.seztec.com

Seztec USA is an innovative company created by a team of professionals with more than 15 years' experience in the sphere of telematics hardware manufacturing and development.

Since 2013, when the company was founded, we have been upgrading our products branded eurosens®.

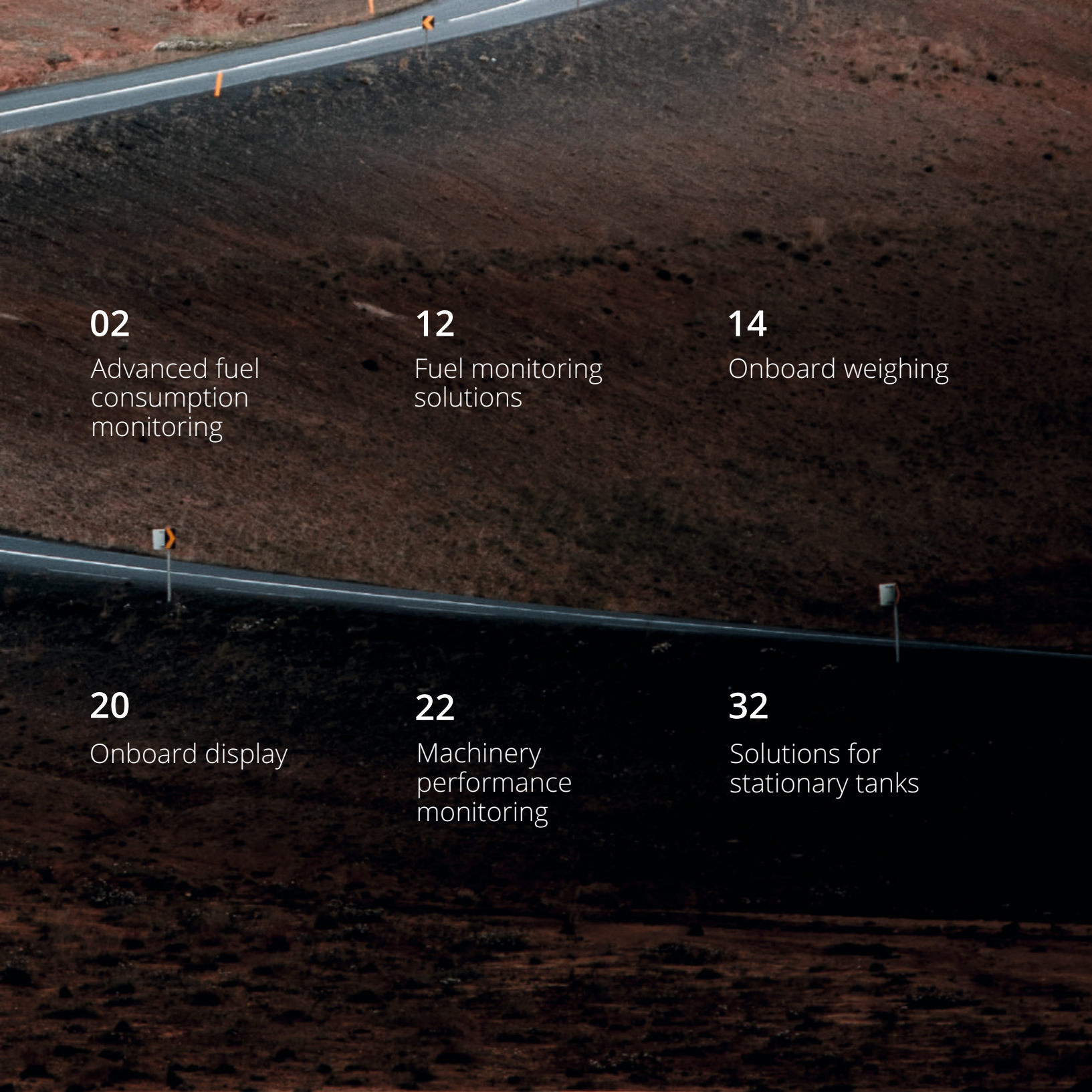
Mechatronics offers new solutions and technologies to optimize fleet management.

The key-products of our company are fuel level sensors, fuel consumption meters for diesel and other liquids and on-board weighing systems. Mechatronics manufactures high-tech, science-driven and exclusive products such as calibration stands of extra-precision.
Most of the manufacturing operations are done on the company's own facilities.

eurosens® sensors are manufactured according to international quality standards (ISO 9001-2008 certificate).

We have Partners in more than 100 countries all over the world. Free trainings in sensors installation are offered.

We will be glad to see you as our Partner.



Advanced fuel consumption monitoring

- Fuel consumption measurement
- Fuel tank monitoring
- CAN bus solutions

ALL IN ONE SOLUTION

FUEL TANK MONITORING

- High-accuracy capacitive fuel level sensors with innovative modular design
- Non-invasive ultrasonic level sensors
- Wireless solutions

FUEL CONSUMPTION MONITORING

The use of fuel consumption meters allows you to see not only the actual fuel consumption, but also to control the time and mode of operation. This method is highly-demanded for the machinery and vehicles working in tough conditions on a bad road surface.

eurosens® Dominator

Modular fuel level sensor with simple and low-cost maintenance. Compatible with any GPS tracker.

Wired or wireless.

eurosens® Direct

Smart diesel fuel consumption meter with onboard CPU and tamper protection.

eurosens® Delta

Smart differential diesel engine fuel consumption meter with tamper protection and temperature compensation.

Fuel level sensors

eurosens® Dominator fuel level sensors with modular design and high accuracy measurement for all types of vehicles. Measurement error is <1%.

Fast installation and easy maintenance.

eurosens® Dominator

MODULAR DESIGN

ALL IN ONE SOLUTION

DIN 72585 | ISO 15170

Automotive connector

COMPATIBLE WITH ANY HARDWARE BY INTERFACES:

- Analog, V
- Frequency, Hz
- RS-232
- RS-485 (LLS, Modbus)
- ISO 9141 (K-Line)
- CAN (J1939)
- Bluetooth

EXTRA FEATURES:

- Built-in calculations
- Accelerometer
- Fuel theft detection
- Built-in display
- Network operation

Fuel consumption meter **eurosens®** Direct

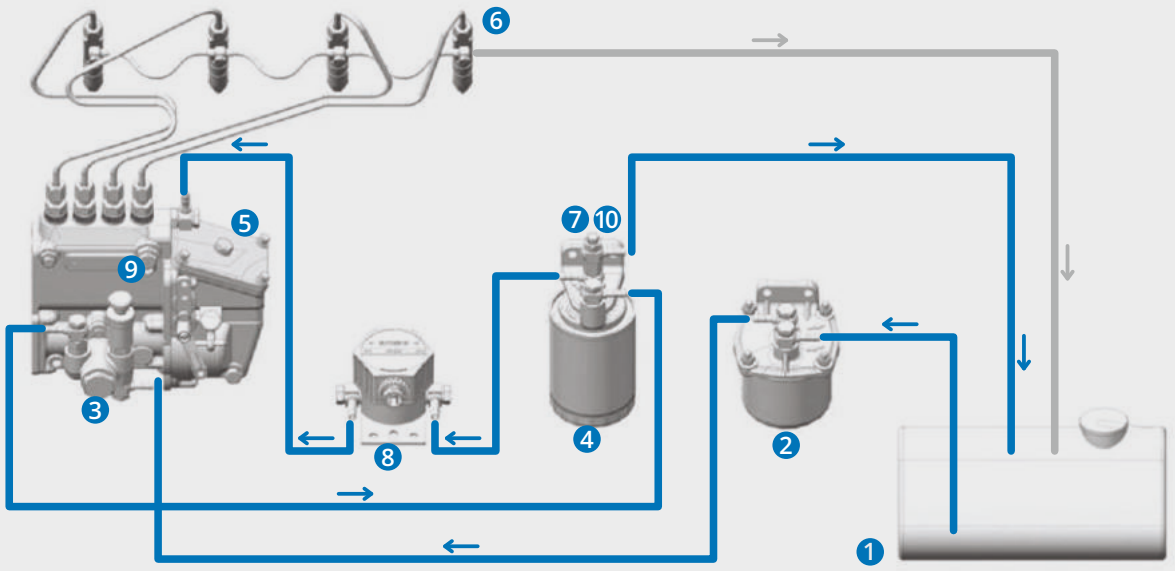
Easy installation and simple on-site maintenance.

Measurement error is 1%.

Fuel consumption meters **eurosens®** Direct are made of high hardness aluminum alloy or brass. Measuring chambers have special extra-resistant coating. Each fuel consumption meter is tested and calibrated on automated calibration stand Eurosens Detector. All fuel consumption meters' versions have built-in temperature sensor.
It corrects the measured fuel volume depending on the fuel temperature.

Fuel meters cover the consumption for 100, 250, 500, 1500, 3000 lph.

INSTALLATION SCHEME OF FUEL CONSUMPTION METER EUROSENS DIRECT IN FUEL SYSTEM



1. Fuel tank
2. Preliminary filter
3. Low pressure fuel pump
4. Fine filter
5. High pressure fuel pump
6. Nozzles
7. Bypass valve
8. Fuel consumption eurosens® Direct
9. Stopper
10. Adapter - fitting M14 - M14

THE INTERFACE IS CUSTOMIZABLE:

- Frequency, Hz
- RS-232
- RS-485 (LLS, Modbus)
- CAN (J1939, NMEA 2000)
- ISO 9141 (K-Line)

ADVANTAGES:

- Smart data processing
- Tamper protection and alarm
- Magnetic field immunity
- Easy maintenance

ALL IN ONE SOLUTION

Fuel consumption meter
eurosens® Delta

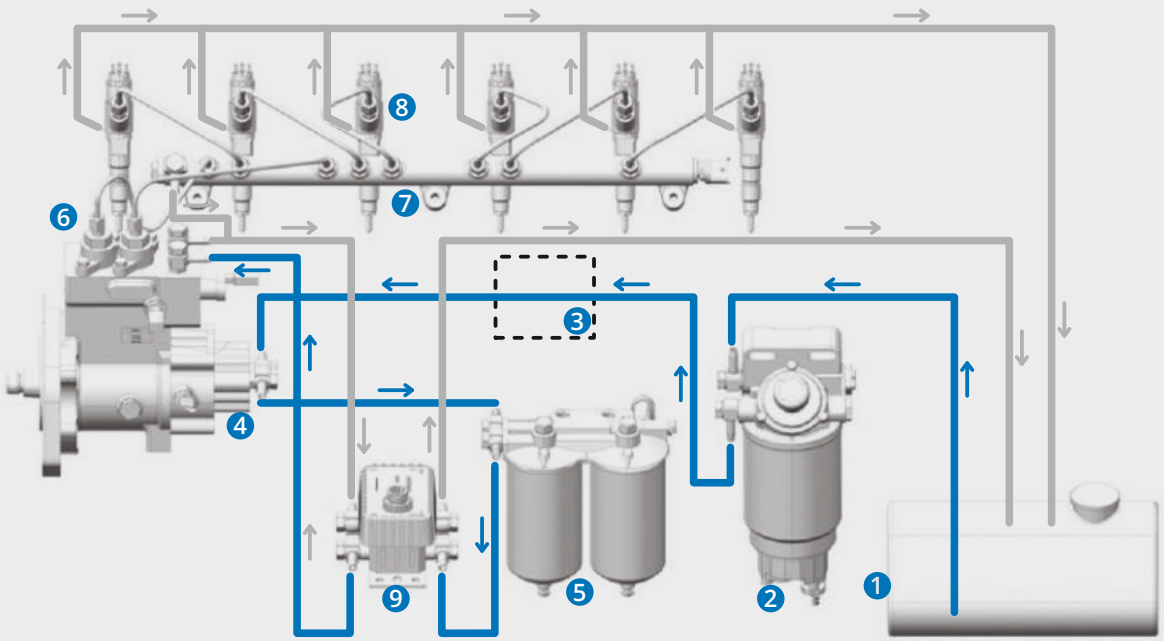
Differential fuel consumption meter eurosens® Delta is designed specially for diesel engines.

Measurement error is 1%.

- Compensation of fuel extension under temperature.
- For engines from 20 to 700 kW.
- Easy installation and maintenance.
- Provides information about fuel consumption, engine operation time in total and partial modes (idling, overload).

There are models for the consumption of 100, 250 and 500 lph.

INSTALLATION SCHEME OF DIFFERENTIAL FUEL CONSUMPTION METER EUROSENS DELTA IN COMMON RAIL FUEL SYSTEM



1. Fuel tank
2. Preliminary filter
3. Electronic control unit
4. Low pressure fuel pump
5. Fine filter
6. High pressure fuel pump
7. Fuel accumulator
8. Nozzles
9. Fuel consumption meter eurosens® Delta

THE INTERFACE IS CUSTOMIZABLE:

- Frequency, Hz
- RS-232
- RS-485 (LLS, Modbus)
- CAN (J1939, NMEA 2000)
- ISO 9141 (K-Line)

ADVANTAGES:

- Temperature compensation of supply and return fuel flows.
- Tamper detection and alarm.
- Low hydraulic flow resistance.
- Flow direction detection

ALL IN ONE SOLUTION

Fuel consumption monitoring of marine and industrial engines

ALL IN ONE SOLUTION

Fuel consumption meters eurosens® Direct 1500 and eurosens® Direct 3000 measure a wide range of diesel fuel and can be installed on ships, diesel gensets, locomotves, burners, and other units with high fuel capacity.

Built-in temperature compensaton.

Measurement error is 1%.

eurosens® Direct 1500

Up to 1500 liters/hour.

eurosens® Direct 3000

Up to 3000 liters/hour.

Fuel monitoring solutions

eurosens®
Dizzi

- Non-invasive liquid level measurement through the tank bottom
- LPG measurement
- Digital interfaces

eurosens®
Dash

Install eurosens® Dominator without drilling instead of vehicle sensor and control the dashboard with eurosens® Dash.

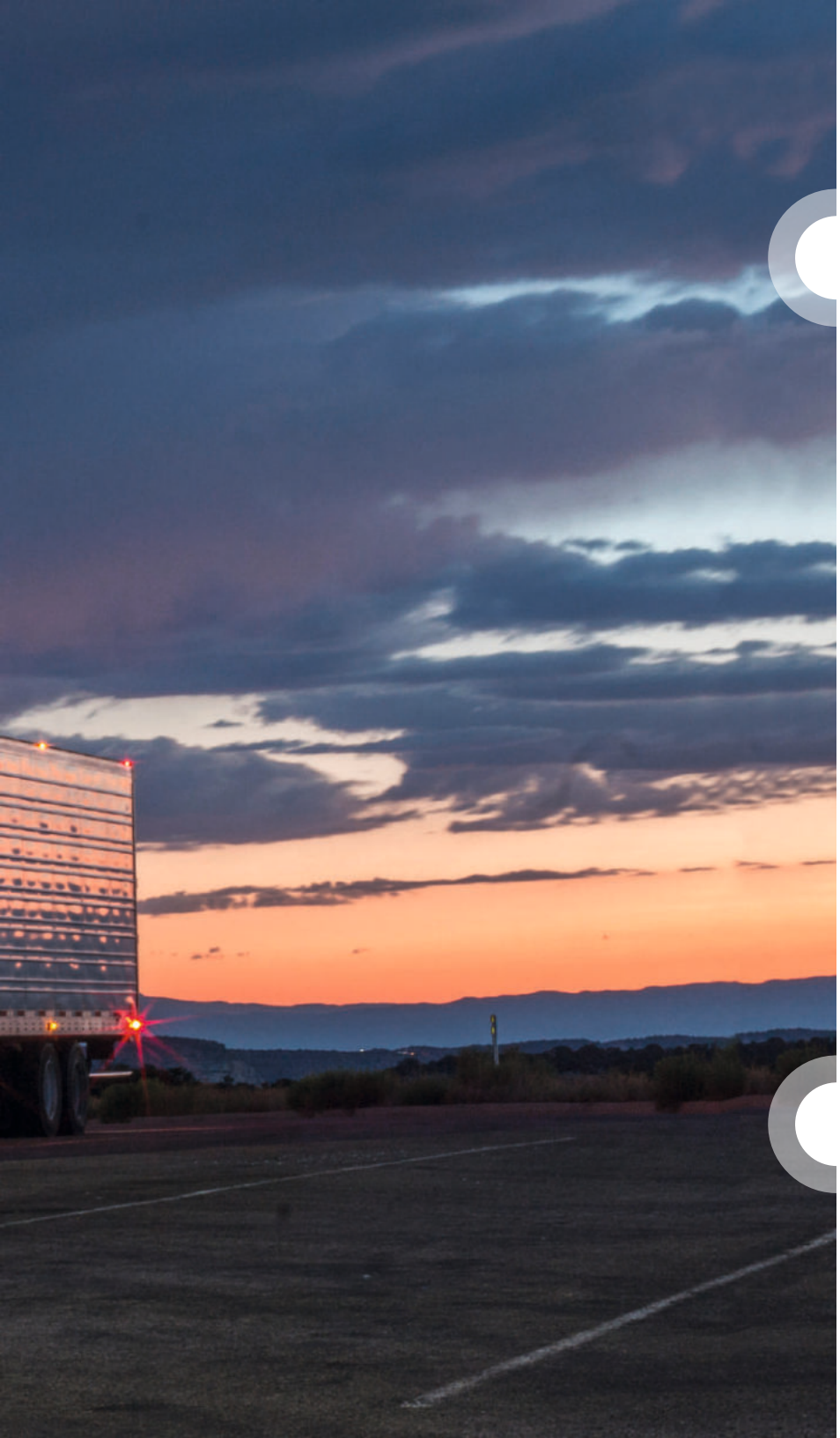
eurosens®
Dock

Improves the data of a vehicle float fuel level sensor.

Onboard weighing

- Individual axle load measurement for truck and trailer
- Cargo load calculation
- Axle overload alarm
- Shows axle load and cargo weight on driver's display
- Transmits axle load and cargo weight values to the GPS tracking system
- Avoid the overload fines
- Monitor your fleet activities
- Integrate with GPS tracking platforms

ALL IN ONE SOLUTION



eurosens®
Display

- Polls the sensors and calculates the total weight and cargo weight
- Interface with GPS tracking system
- Displays the data and overload
- Bus architecture support

eurosens®
Axle load sensors

Strain, pressure, displacement sensors

Digital Pressure Sensors
eurosens® DPS

FOR VEHICLES WITH AIR SPRING SUSPENSION

Axle load sensors eurosens® DPS and DPS BT convert the pressure of compressed air in the air suspension line to the output voltage or digital messages via serial RS-485, automotive CAN bus J1939 protocol or wireless BLE 4.2.

- Axle load measurement error is 2-3% of the maximum axle load.
- Fast and simple installation with a new mounting kit.
- 1 sensor can support up to 3 calibration tables.
- Built-in microprocessor provides the operation of the sensor via digital interfaces in the network mode.
- Software filtering and smart data processing.
- Can be mounted on any vehicle with air suspension.

Digital Displacement Sensors
eurosens® DDS

FOR VEHICLES WITH LEAF SPRING SUSPENSION

Axle load sensors eurosens® DDS and DDS BT convert rotation angle of the sensor lever into an output signal using a Hall-effect sensor as a transducer. Type of the output signal depends on the output interface: analog, serial (RS-485), CAN bus or wireless BLE 4.2.

- Axle load measurement error is 5-10% of maximum axle load.
- Smart and simple design.
- Software filtering and smart data processing.
- Built-in microprocessor provides the operation of the sensor via digital interfaces in the network mode.
- Can be mounted on any vehicle with leaf spring suspension.

Digital Strain Sensor
eurosens® DSS

High accuracy axle load sensor eurosens® DSS is mounted on the vehicle axle and measures its microstrains using a strain gauge. The built-in microcontroller determines the axle load in kilograms and transmits the data via interface RS-485 or CAN J1939.

- Axle load measurement error is 2% for vehicles with leaf spring suspension.
- Improved installation reliability due to absence of moving parts.
- One sensor can support up to 3 calibration tables.
- Built-in temperature sensing element provides thermal correction of sensor readings.
- Replacement of leaf spring doesn't affect the sensor calibration.
- Suitable for leaf springs of any state and properties.

Onboard weighing system with GPS tracking integration

DashDrive App

GPS tracking device

Smart axle load sensors eurosens DPS/DDS/DSS

Measure axle loads, store calibration tables and vehicle properties, calculate axle load in tons

eurosens® Display

Calculates total truck/trailer weight, cargo weight, detects overload, communicates with GPS tracker

RS-485-1 RS-485-2

DashDrive application displays telematics data (cargo weight, axle load, etc.) to the driver.

Onboard display

Onboard **eurosens**® Display is compatible with all **eurosens**® sensors as well as some 3rd party manufacturers.

Connection interfaces :
- RS-485
- CAN
- K-line

Smart data processing and interfacing to GPS tracker.

MULTIFUNCTIONAL ONBOARD DISPLAY

eurosens®
Display

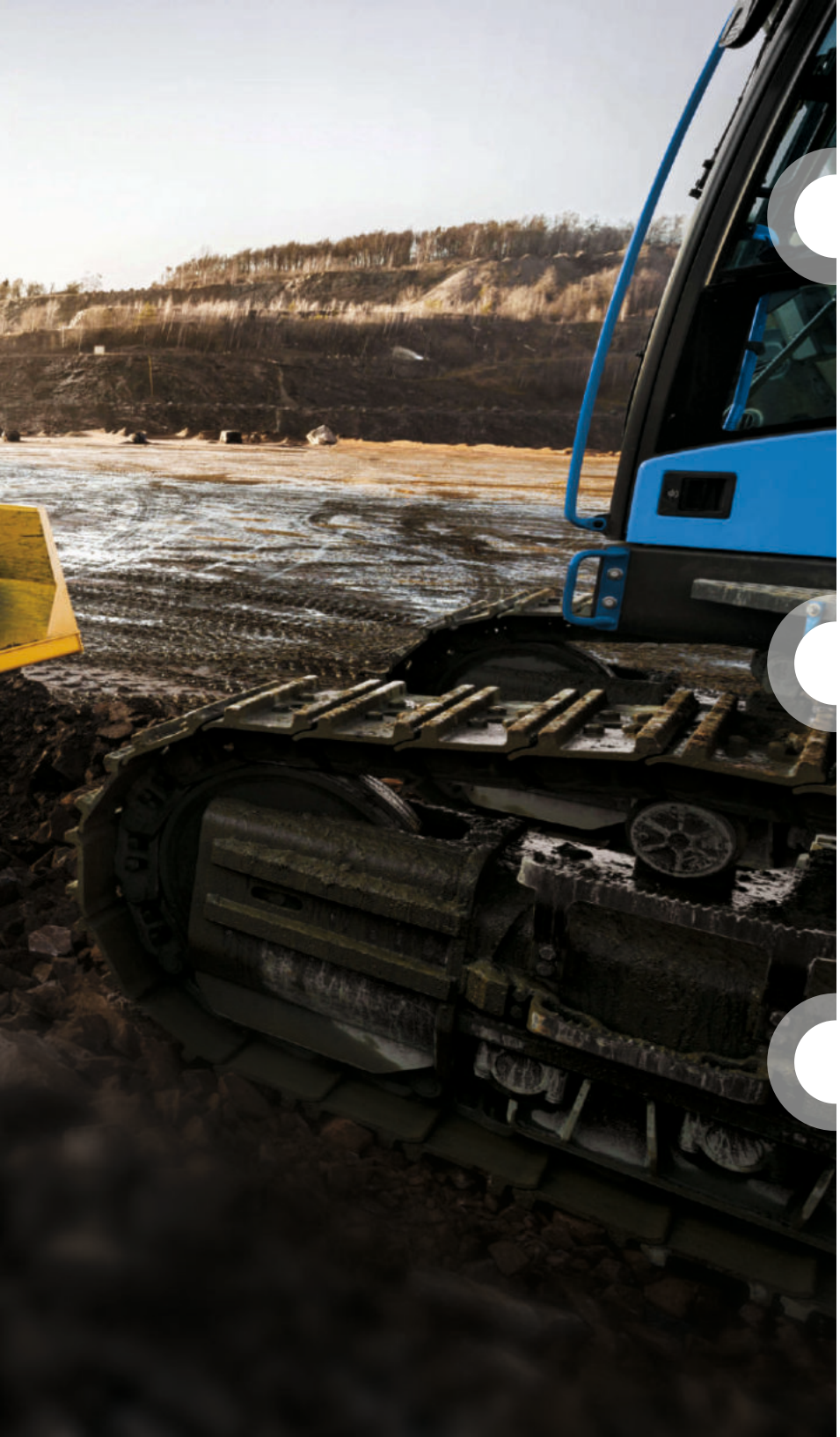
CAN BE CUSTOMIZED
TO DISPLAY DIFFERENT INFORMATION:

- Total and instant fuel consumption
- Axle loads, truck and trailer weight, cargo weight
- CAN bus parameters

Machinery performance monitoring

ALL IN ONE SOLUTION

Mechatronics provides telematic solutions with focus on remote fuel delivery and consumption monitoring, onboard weighing systems, cold-chain solutions and special machinery performance monitoring.



eurosens®
DTS BT

- Wireless temperature measurement
- Cold chain solutions
- Reefer trucks and trailers monitoring

eurosens®
Degree BT

- Wireless tilt angle measurement
- Motion detection
- Position change registration

eurosens®
MWS

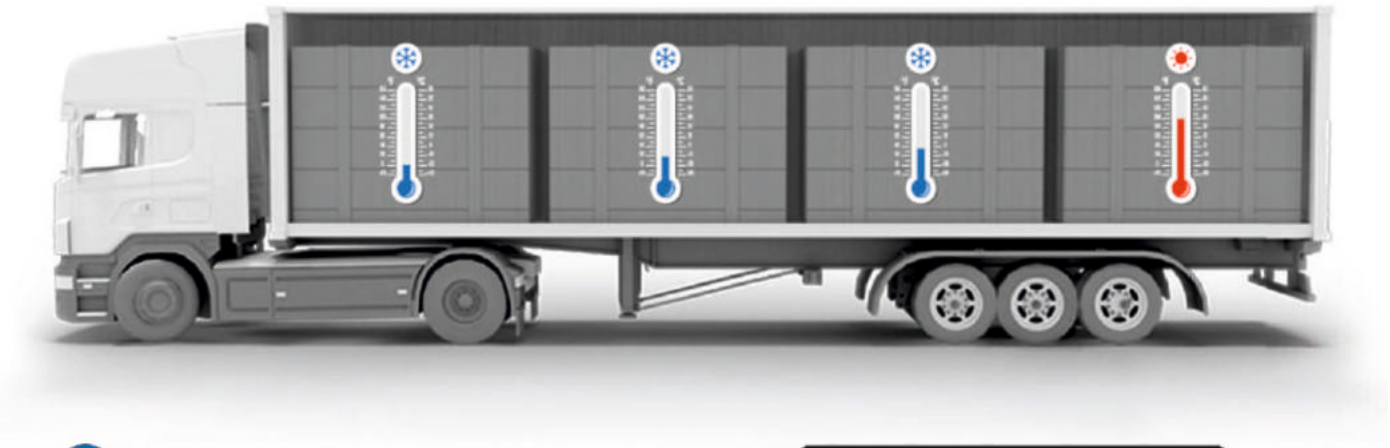
- Universal liquid level sensor
- Contactless measurement
- Electromagnetic radar

Wireless Temperature Sensors
eurosens® DTS BT

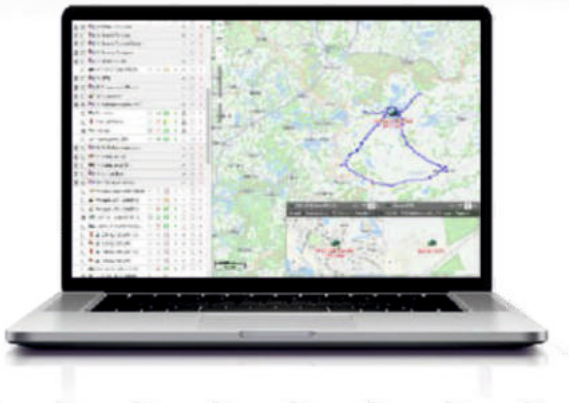
Wireless temperature sensor eurosens® DTS BT consists of temperature sensing element, long-life battery and Bluetooth Low Energy module. DTS BT can be installed inside a refrigerator truck. The data is sent by Bluetooth protocol compatible with popular GPS tracking devices.

- eurosens® DTS Bt has got an internal sensing element. eurosens® DTS Bt Ext has got an external sensing element.
- Smart design allows you to mount sensors fast and swap them between trucks.
- Measurement error is: ±0.5 °C for DTS BT; ±0.3 °C for DTS BT Ext.
- Transmission range is up to 200 meters.
- 5 years of battery life.

Complete monitoring system of refrigerator trucks



- **Vehicle tracking**
- **Driver identification**
- **Door access control**
- **Temperature monitoring**
- **Humidity monitoring**
- **Fuel level monitoring**
- **Onboard weighing system**



- Real time 24/7 monitoring.
- Automatic alarm notification via call, SMS, or e-mail.
- Customized functions and reports.

Wireless Tilt Angle Sensor eurosens® Degree BT

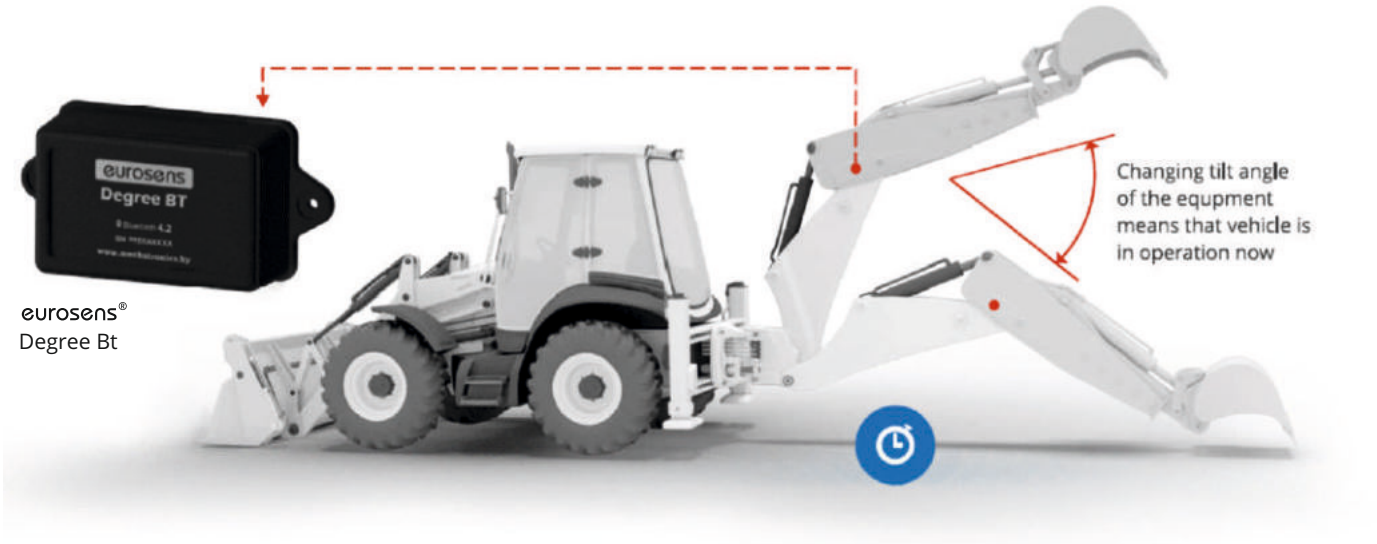
Wireless tilt angle sensor eurosens® Degree BT determines the angular position of heavy machinery parts and mechanisms relatively to the gravity vector.

Measurement error is ±1°.

- Transmits the data over a 2.4 Ghz Bluetooth Low Energy (BLE) radio channel.
- Self-powered by a built-in ER14505 AA battery.
- Sensor with internal memory could work as a stand-alone device without GPS tracker.
- Checks direction and rotation frequency, as well as operation time.
- Has three operation modes:

1) Angle inclination measurement.
2) Concrete mixer monitoring.
3) Manipulator boom monitoring.

Real working hours of special machinery



Returns current vehicle status: in operation/not operating.
Calculates total time of operation.

Compatible with GPS trackers:

GLONASSSoft
GALILEOSKY
NAVTELECOM TELEMATICS SYSTEMS
NEOMATICA
TELTONIKA

Concrete mixer monitoring

GPS tracker:
communication over Bluetooth Low Energy protocol

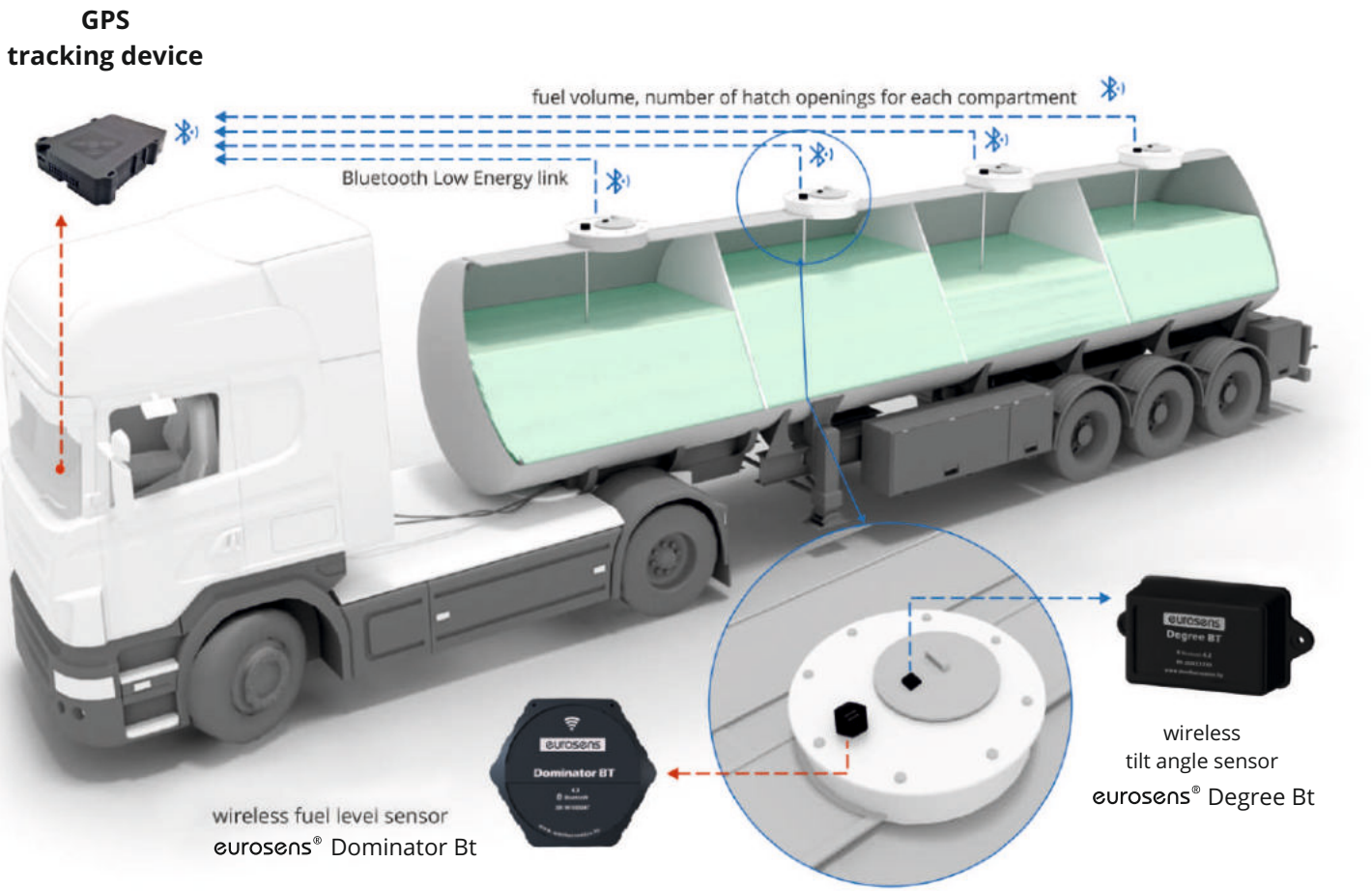
Determines:
- total drum operation time
- drum rotation speed
- number of starts
- temperature

eurosens® Degree Bt

Attached to the drum surface

Configured via smartphone

Wireless
fuel delivery monitoring



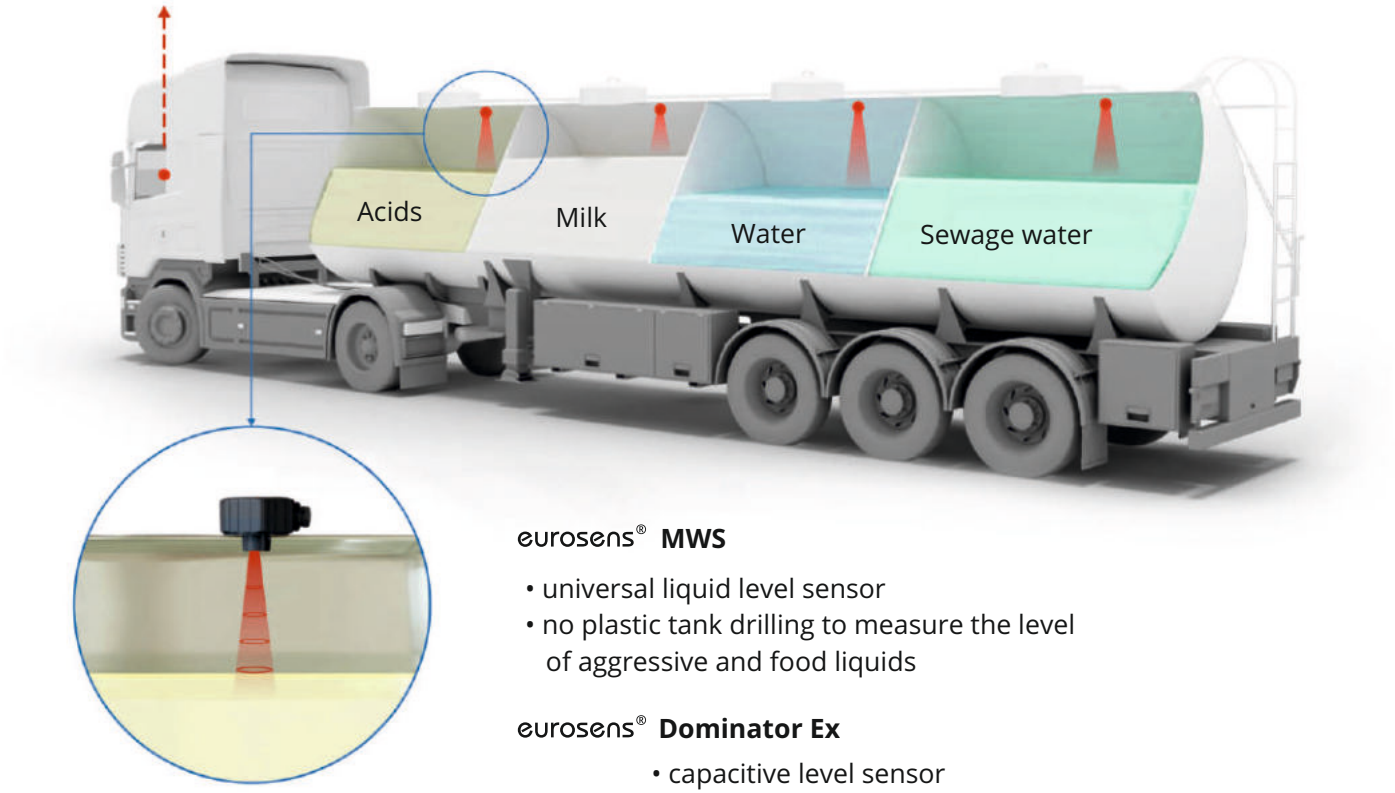
Universal Liquid Level Sensor
eurosens® MWS

eurosens® MWS is a universal distance sensor used for non-contact distance measurement to the nearest object or to the surface of the liquid. The distinctive feature of the sensor is the ability to measure through barriers transparent for electromagnetic waves (plastic).

- Liquid and bulk product measurement. The volume calculation is based on stored calibration tables.
- Aggressive and food liquids in plastic tanks could be measured with no tank drilling.
- Can be tapped into container or glued to its outer surface.
- Compatible with popular GPS tracking devices with RS-485 interface.

Delivery monitoring and level measurement of liquids

GPS tracking device



RS-485 LLS/MODBUS interface

eurosens® **MWS**

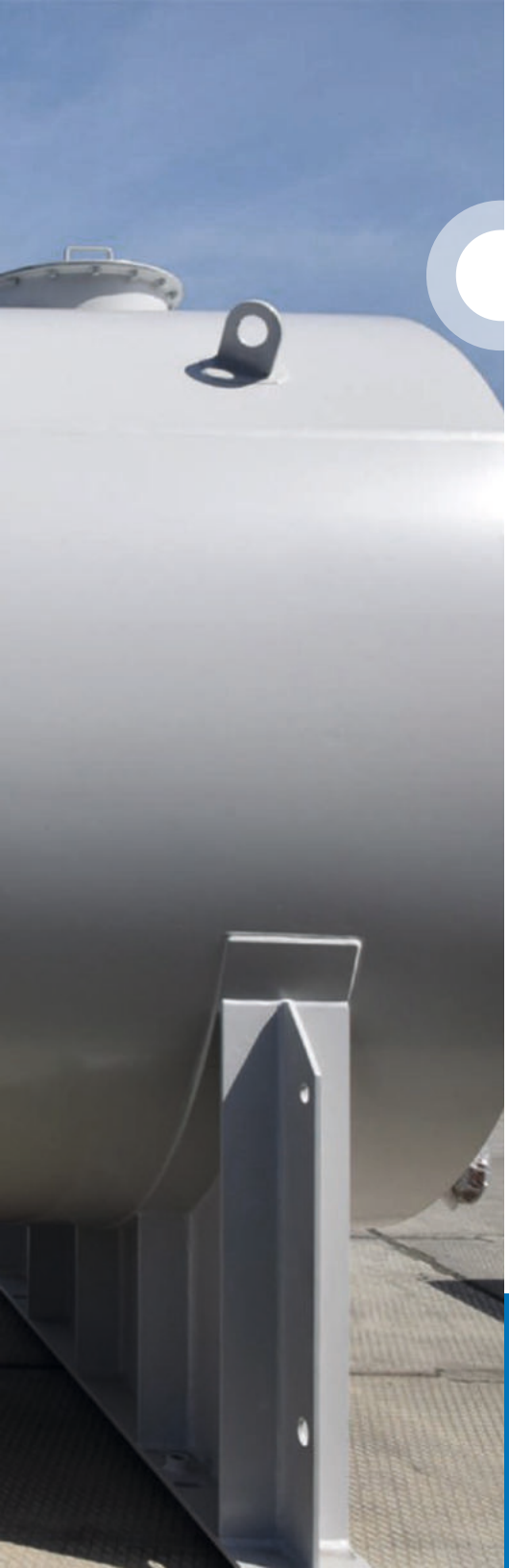
- universal liquid level sensor
- no plastic tank drilling to measure the level of aggressive and food liquids

eurosens® **Dominator Ex**

- capacitive level sensor
- isolated electrodes
- water level measurement

Solutions for stationary tanks

- Modular fuel level sensors eurosens® Dominator can be used for fuel storages monitoring
- Wireless eurosens® Dominator BT sensors don't require long cable wiring
- Bulk flow meters integration for fuel dispatch management
- eurosens® Monitor software for local monitoring
- Integration with SCADA systems



eurosens® Dominator

- RS-485 MODBUS interface
- CAN
- Bluetooth Low Energy channel (up to 200 meters range)

WE OFFER

3D RECONSTRUCTION

SERVICES FOR TANK CALIBRATION

SEZTEC USA
www.seztec.com