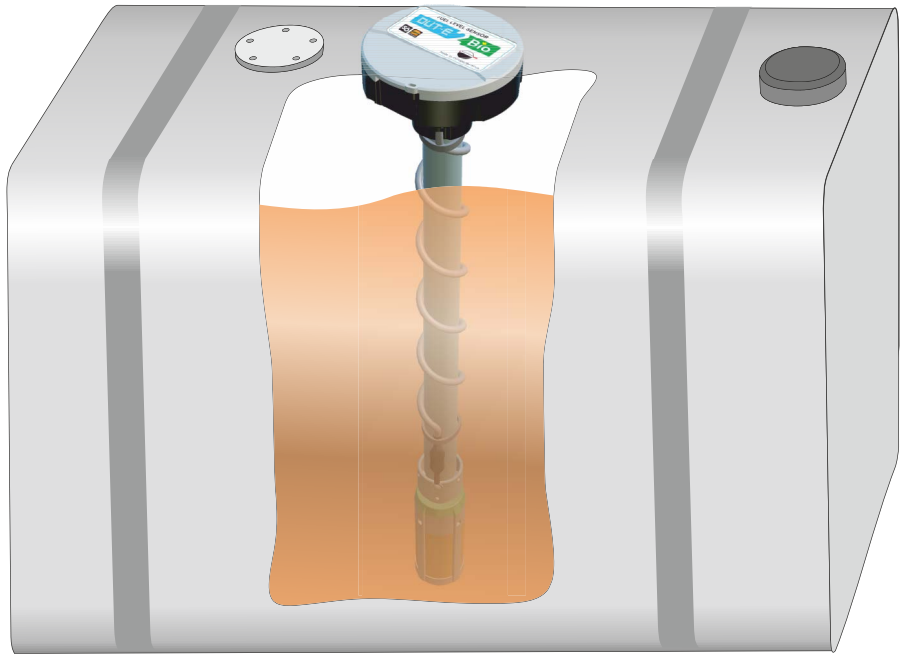
TECHNOTON
FUEL MONITORING EXPERT



DUT-E 2 Bio

Differential fuel level sensor

IoT BURGER

www.jv-technoton.com

DUT-E 2Bio Differential fuel level sensor

Specialty

DUT-E 2Bio wired sensor

DUT-E 2Bio S7 wireless sensor

Automatic adjustment function in DUT-E 2Bio sensor ensures maximum accuracy in fuel level regardless of the fuel type in the tank.

Switching between fuel types or refueling from various sources does not affect measurement precision.

Same accuracy for all types of fuel!

Application

- ✓ Vehicles, which are refueled with different fuel types – summer, winter, biodiesel.
- ✓ Movable and stationary fuel cisterns used for fuel transportation or storage of various fuel types – summer, winter, biodiesel.

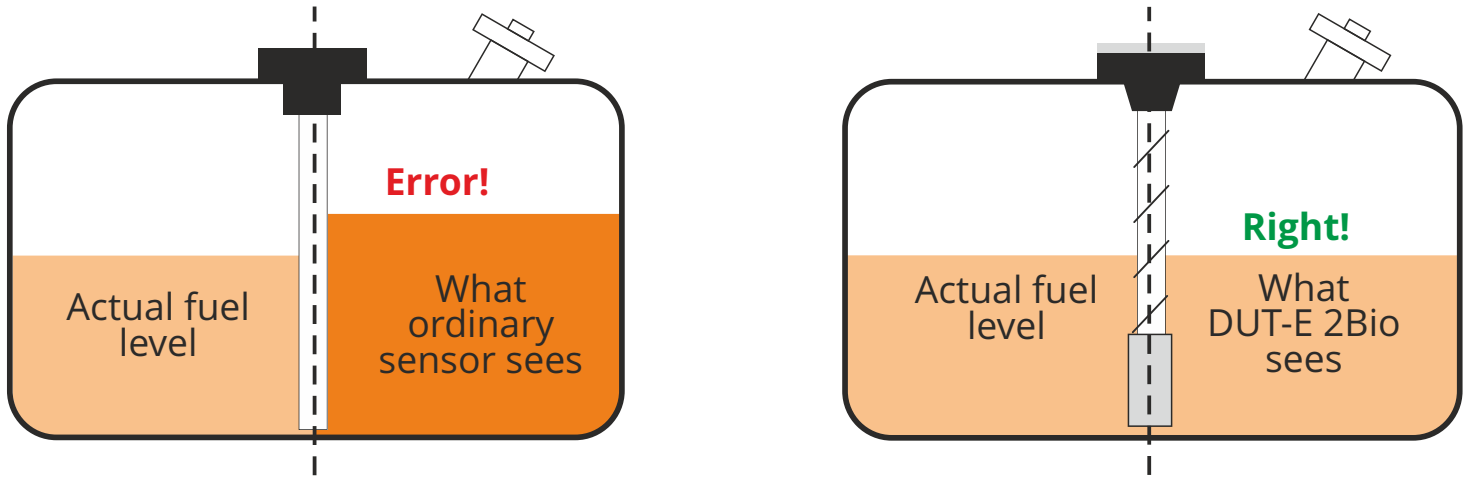
Features

- ✓ No re-calibration is needed when switching fuel types.
- ✓ Detection of fuel type change.
- ✓ Digital self-diagnostics function for data reliability control.
- ✓ Adjustable signal filtration minimizes data leaps from fuel vibration.
- ✓ Screen-filter protects against mud and water from bottom of tank.
- ✓ Probe length can be cut or increased.
- ✓ Fuel temperature is measured by sensor immersed in fuel.

Sensor and tank calibration – just once

Recalibration of sensor or fuel tank is not needed when fuel type/quality in tank changes (summer/winter diesel, mineral/biodiesel).

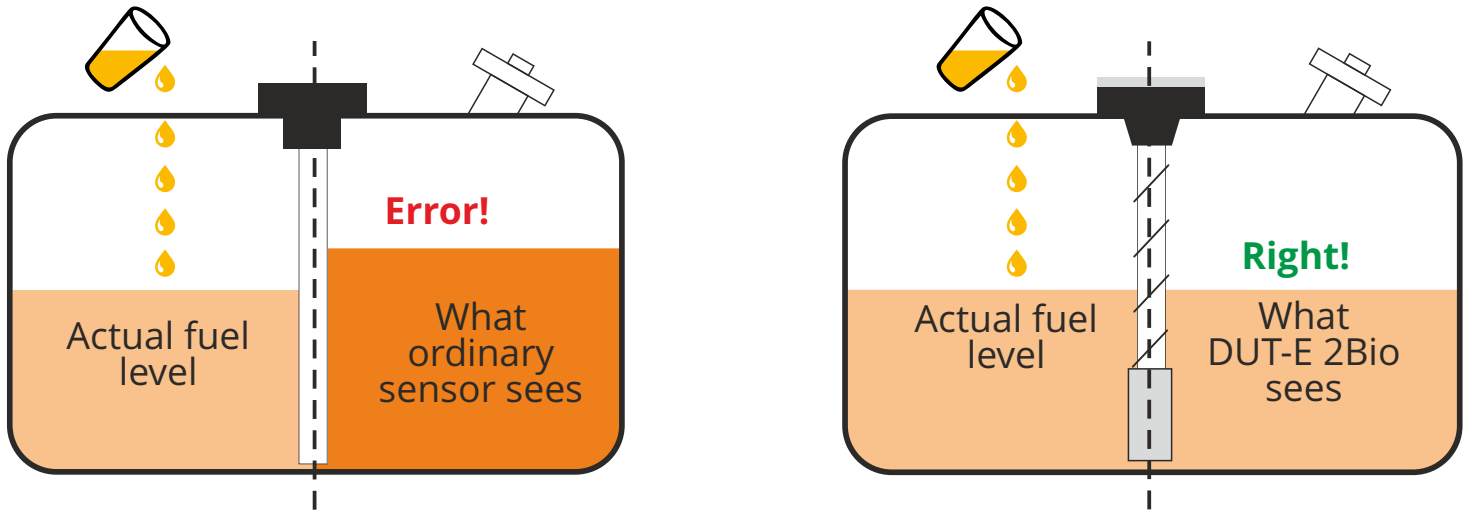
Tasks/ Measuring different fuel types



When switching from one fuel type to the other, a difference in data from standard capacitive sensor can be up to 50%.

DUT-E 2Bio accurately defines fuel volume in tank regardless of fuel type inside – summer, winter, biodiesel.

Tasks/ Measuring volume of fuel with impurities

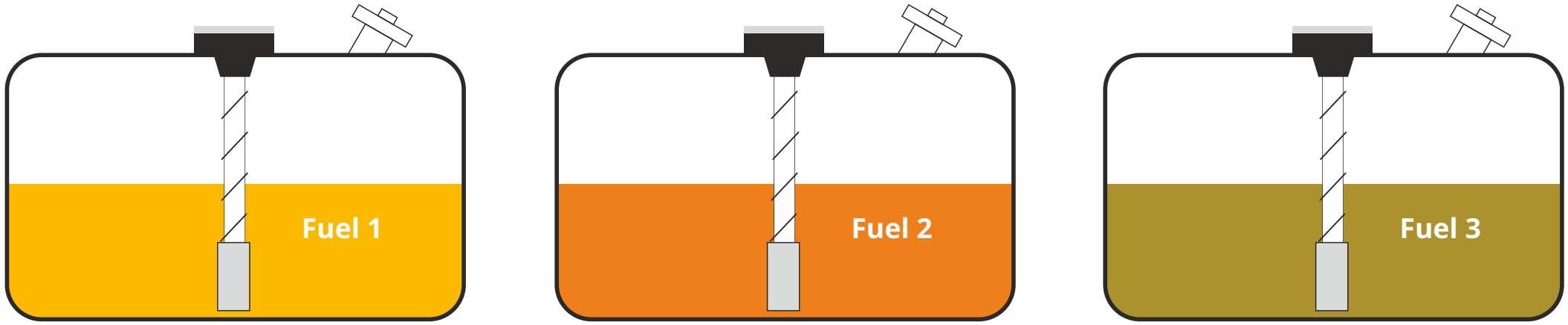


When adding a small amount of spirit into fuel tank, permittivity of spirit-diesel mixture in fuel tank increases.

Standard capacitive sensors show overstated value of fuel volume.

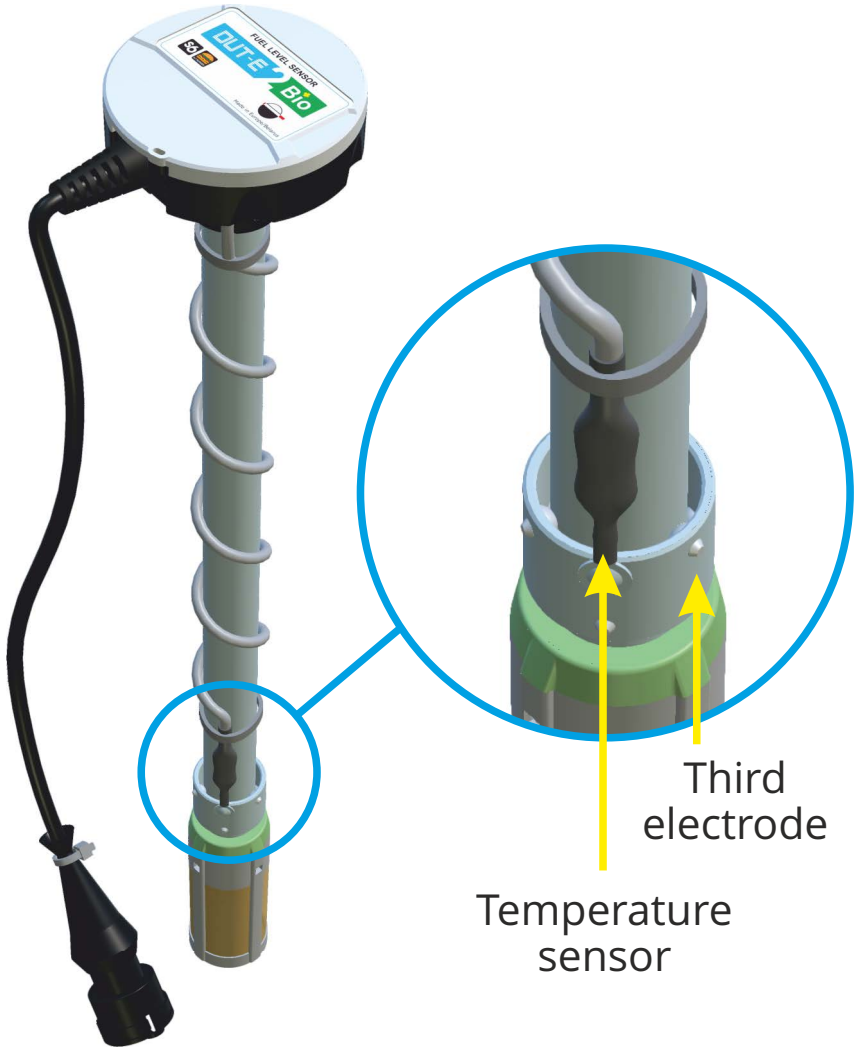
DUT-E 2Bio shows correct fuel volume data.

Tasks/ Detecting fuel type upon its permittivity



Various fuel types (even the same fuel type, but of different quality) differs according to its permittivity. Data from DUT-E 2Bio allows to detect switching to other fuel type or filling fuel of different quality.

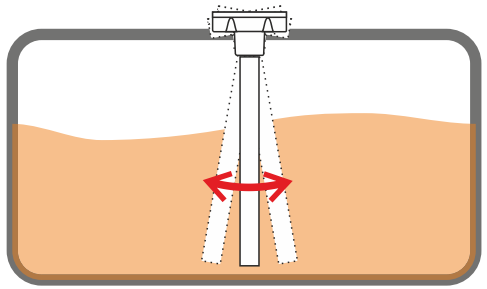
Design/ Third electrode and temperature sensor



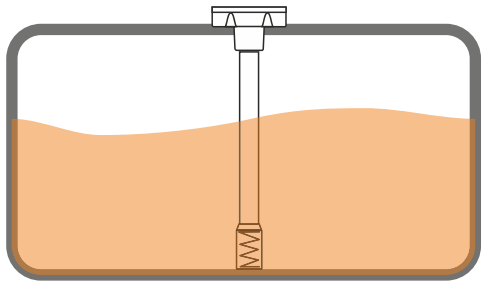
Third electrode automatically detects changes in dielectric permittivity and adjusts fuel level measurement results accordingly

Temperature sensor is located next to third electrode, providing highly accurate measurement of fuel temperature inside the tank

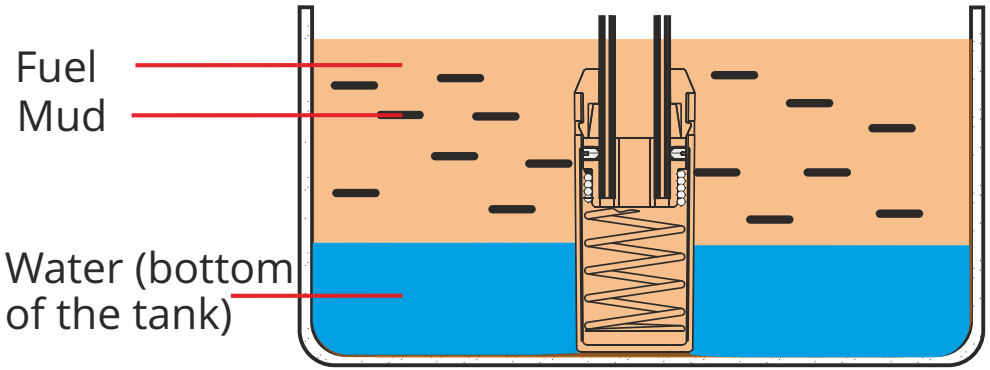
Design/ Bottom stop and screen filter



With bottom stop



Without bottom stop



Bottom stop

increases durability of fastening,
sensor is mounted in tank firmly

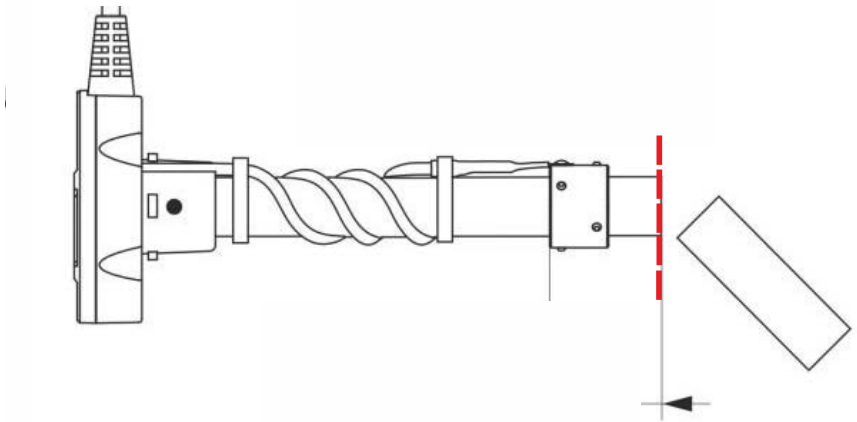
Screen filter

protects against water and mud gathering on fuel tank bottom – purchased separately

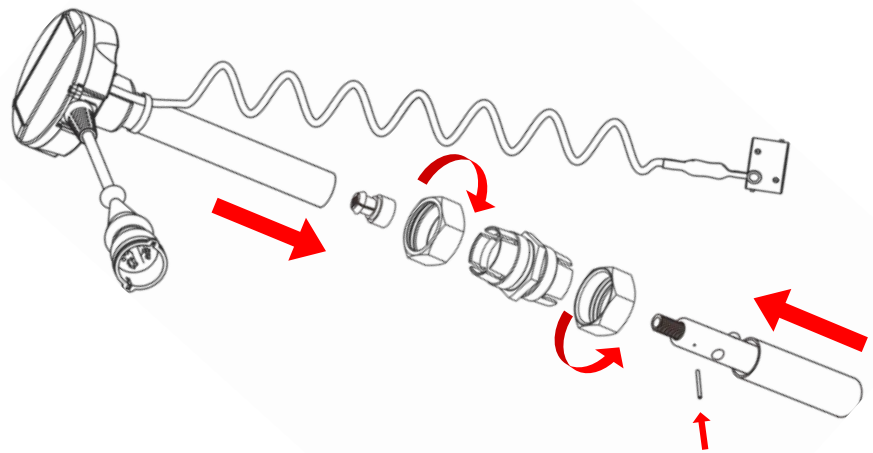
Design/ Shortening and extending length

DUT-E 2Bio measuring part length

can be shortened to any length



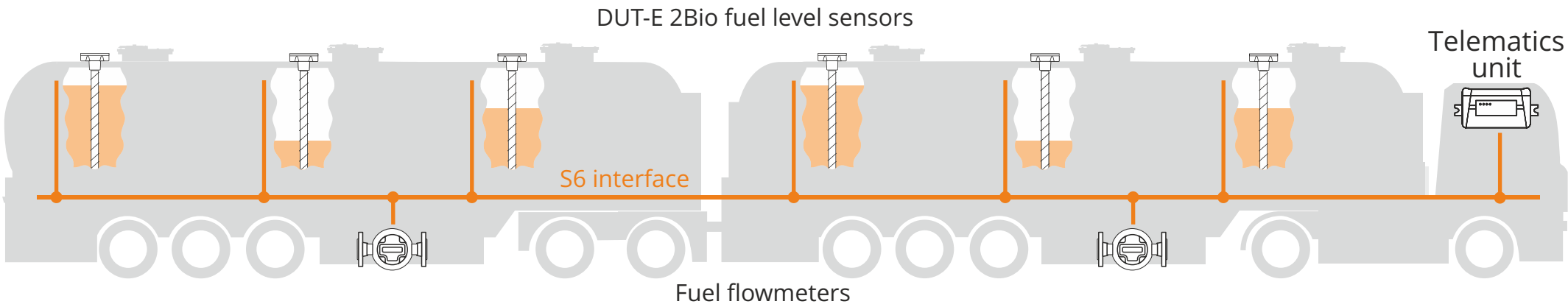
is extended up to 6,000mm by using additional sections



One standard length fits most vehicle tanks. Savings on inventory and transportation.

DUT-E 2Bio Differential fuel level sensor

Technology/ S6

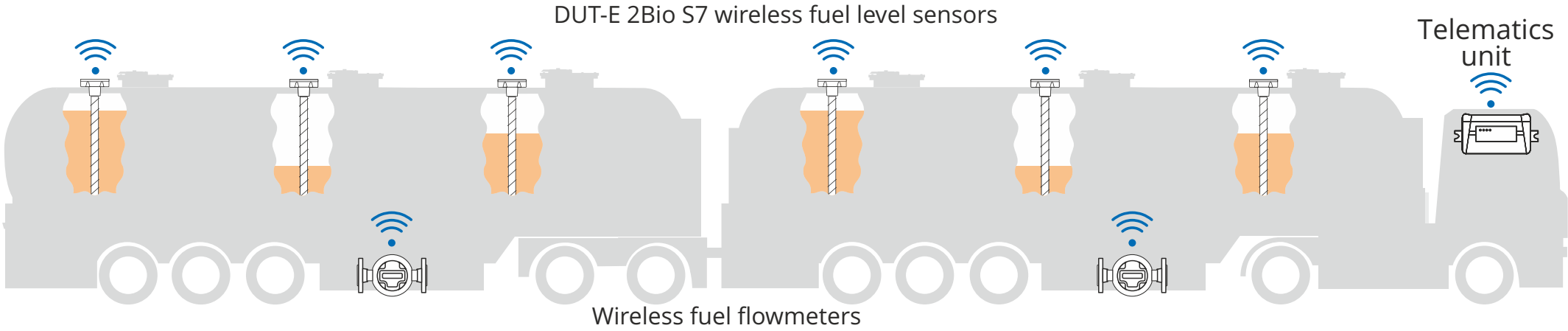


S6 technology enables development of a telematics system for advanced machinery. Advantages:

- ✓ Simultaneous connection of up to 16 DUT-E 2Bio sensors along with other equipment
- ✓ Data transmission via a single cable to a single input of telematics unit
- ✓ Simultaneous configuration and diagnostics of each sensor

DUT-E 2Bio Differential fuel level sensor

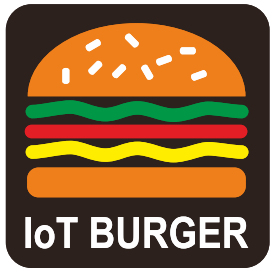
Technology/ S7



S7 – Wireless Data Transmission Technology via Bluetooth. Advantages:

- ✓ Monitoring system installation without cabling, increased resistance to vandalism
- ✓ Explosion-proof and fire-safe sensors with Ex certification
- ✓ Simultaneous data transmission to multiple receivers – telematics unit, smartphones
- ✓ Reception of signals from up to 10 sensors at the same time

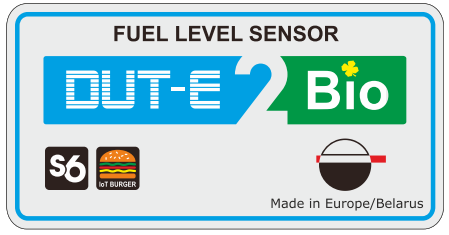
Technology/ IoT Burger

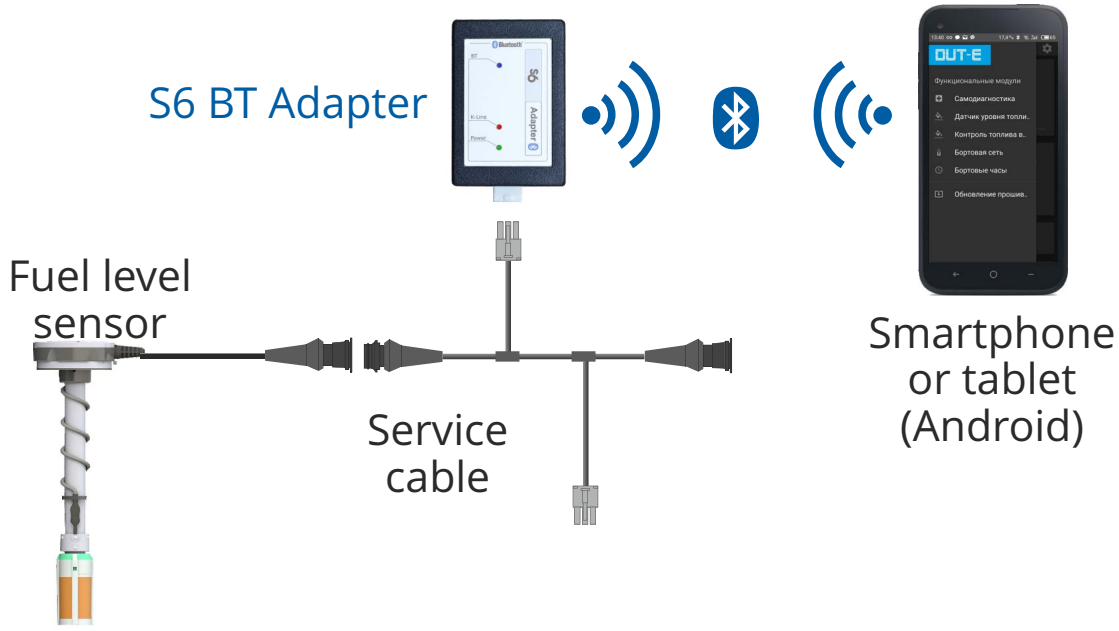


IoT Burger technology – advanced **onboard** data processing (Edge computing).
Benefits:

- ✓ Detection of "Refueling" and "Drain" events
- ✓ Self-diagnostics with data logging in the Event Journal
- ✓ Signal processing, including filtering, thermal correction, thermal compensation
- ✓ Sensor configuration via Bluetooth.

Configuration over Bluetooth/ Wired sensors





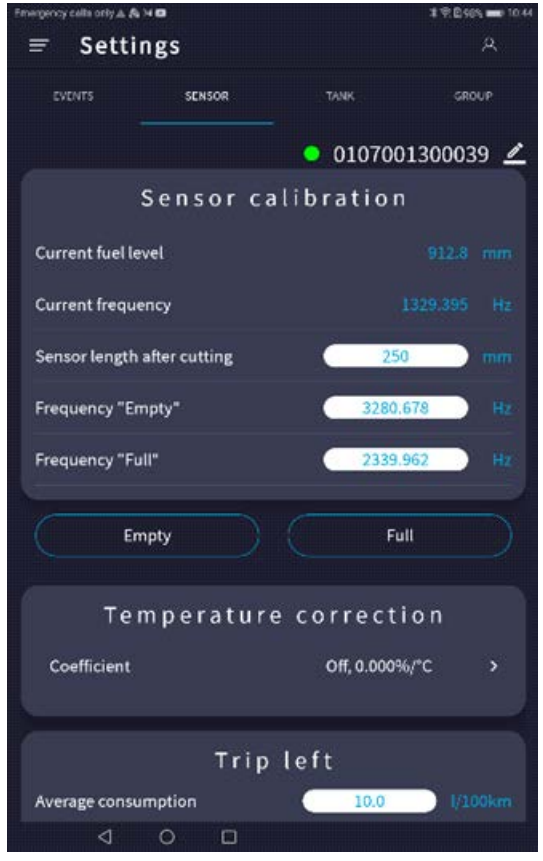
DUT-E 2Bio wired sensors can be configured via Bluetooth using smartphone and S6 BT Adapter.
Service S6 DUT-E mobile app is available in the Google Play.

DUT-E 2Bio Differential fuel level sensor

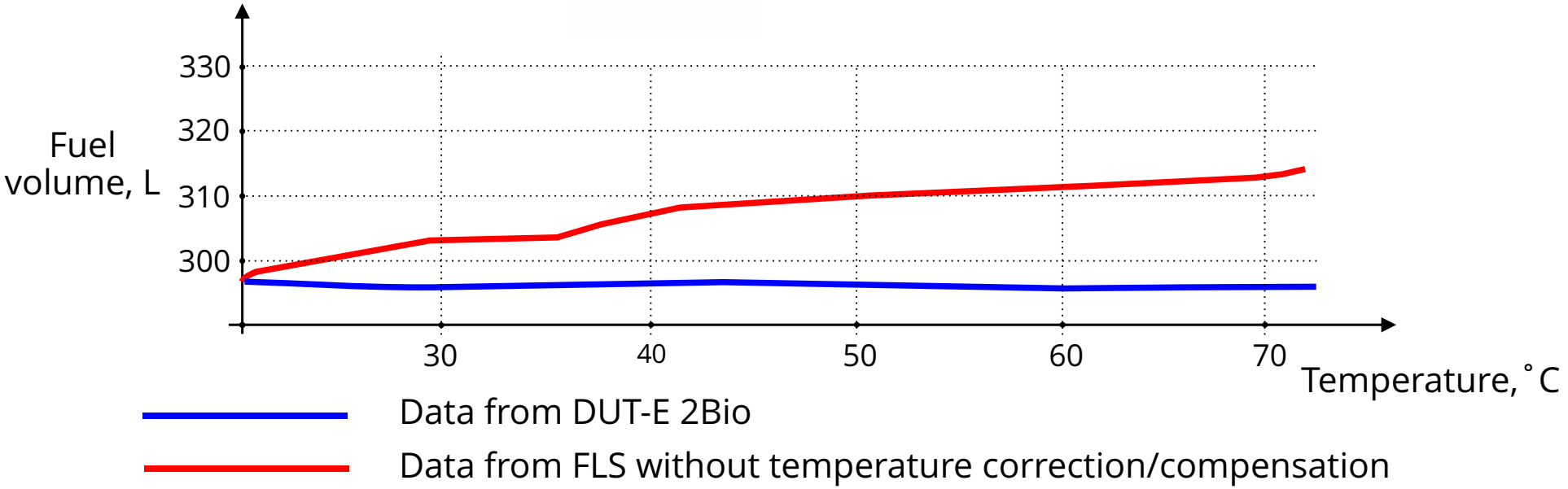
Configuration over Bluetooth/ Wireless sensors

Wireless DUT-E 2Bio sensors can be configured using a smartphone:

- ✓ Creating sensor's profile
- ✓ Fuel tank calibration
- ✓ Configuring detection of Events: "Fueling", "Discharging", "Low fuel level"
- ✓ Data logging
- ✓ Diagnostics of sensor's malfunctions
- ✓ Summation of data from several sensors
- ✓ Trip left calculating by average fuel consumption



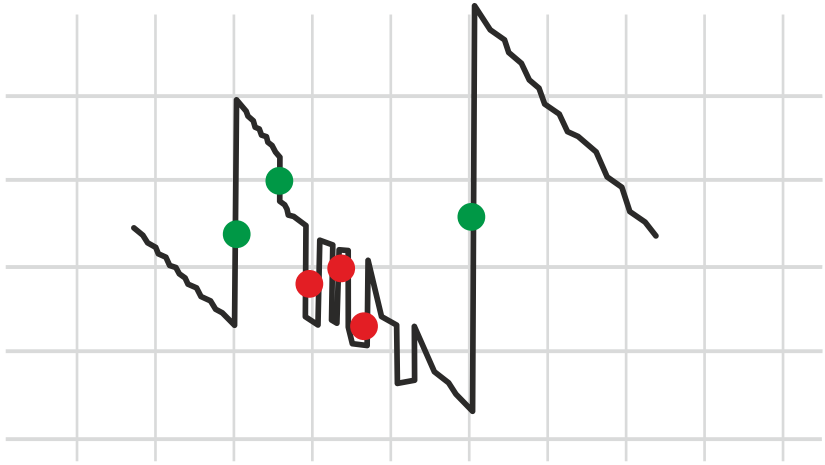
Features/ Temperature correction & compensation



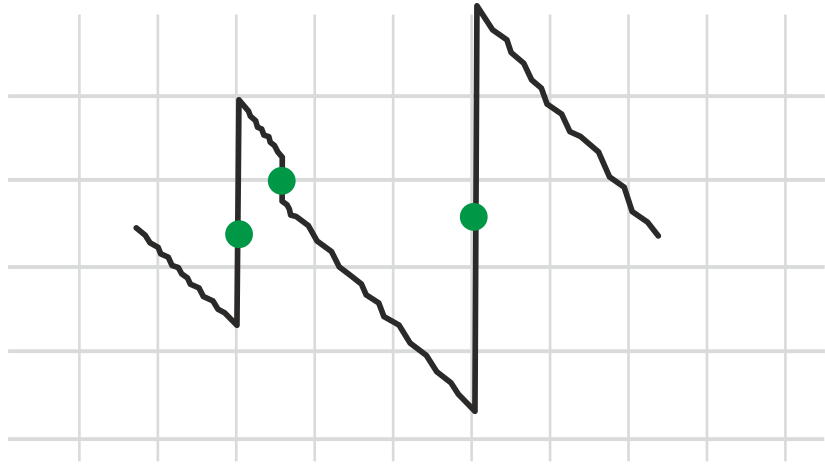
Temperture compensation - automatic function necessary for eliminating influence of ambient temperature on sensor's parts, especially on electronic components.

Temperture compensation and correction functions are helping to increase mesurement accuracy and get temperature-indepent information without false fluctuations on chart.

Features/ Signal filtering adjustment



Unfiltered signal – true (●),
and false (●) fuel fill-up
and draining events are visible



Filtered signal – only real (●) fuel fill-up
and draining events are visible

Signal filtering can be adjusted in 0 to 300 s range. That allows to send accurate data on fuel volume without false fill-up and draining events to the server. The feature is important when vehicle equipped with DUT-E 2Bio in fuel tanks is operated on rough terrain.

Models, output signal

DUT-E 2Bio CAN	CAN j1939/S6 interface
DUT-E 2Bio 232	RS-232 interface, Modbus RTU
DUT-E 2Bio 485	RS-485 interface, Modbus RTU
DUT-E 2Bio AF	voltage 1..9 V / frequency 500..1500 Hz
DUT-E 2Bio I	current 4..20 mA
DUT-E 2Bio S7	Bluetooth 5.2/S7 wireless interface

DUT-E Bio Differential fuel level sensor

Technical specifications

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Operation principle	capacitive
Sensitivity to fuel level changes	± 0,1 mm
Supply voltage (wired sensors)	10 .. 45 v, protection up 100 V
Built-in battery life (wireless sensors)	at least 5 years
Operation temperature	–40 .. +85 °C
Increasing sensor length	up to 6000 mm

Compatibility

CAN UP

BITREK KEEP CONTROL

Ruptela Transport Telematics

LOCARUS

NAVTELECOM TELEMATICS SYSTEMS

ГЛОНАСС GPS АВТОГРАФ

TELTONIKA

Galileosky

Up-to-date list is here: www.jv-technoton.com/compatibility/

DUT-E 2Bio Differential fuel level sensor

Case

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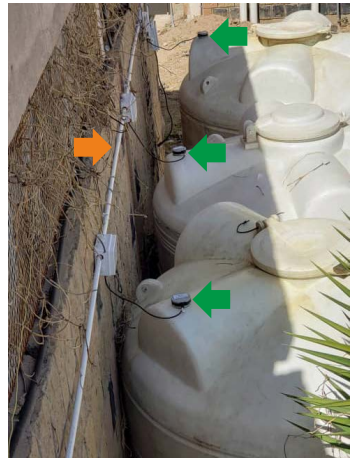
Tanks supply fuel to generators (➡)

To provide uninterrupted feed,
from 3 to 6 fuel tanks are necessary



DUT-E 2Bio sensors (➡)
and S6 cable system (➡)

Stationary tanks supply fuel to generators, with heights ranging from 1,000 mm to 4,000 mm and capacities from 800 liters to 48,000 liters.

The DUT-E 2Bio sensor, with an inaccuracy of ±1%, measures the fuel volume in each tank.
Clients gain clear visibility of fuel levels, eliminating shortfalls caused by fuel operators.
Fuel costs reduced by 25%, ensuring uninterrupted generator operation.

Summary

- ✓ DUT-E 2Bio accurately measures volume of any fuel type without requiring recalibration
- ✓ DUT-E 2Bio minimized impact of temperature expansion due to two temperature sensors – one in measuring “head” and another directly in fuel
- ✓ DUT-E 2Bio compatible with most fuel tanks – the probe length can be shortened to any size or extended up to 6000 mm
- ✓ DUT-E 2Bio available in wired (five interface options) and wireless versions
- ✓ DUT-E 2Bio highly reliable and durable, protected from water and dirt at the bottom of tank

Learn more

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