



	Customer	filling station network
	Machinery	stationary fuel tanks
	Task	monitoring of remaining fuel in tanks; fuel temperature monitoring
	Solution	- DUT-E 2Bio S7 level sensors, - S7 Radiobox CAN converter, - MasterCAN Display, - CANUp telematics gateway, - UNUM Genset monitoring system
	Result	automation of fuel inventory accounting at filling stations

CUSTOMER

The company operates in petroleum product storage, fuel supply, and fuel retail.

It serves corporate and retail customers and is also developing its own network of filling stations.

 **500** employees

 **10** years on the market

 **100+** filling stations

MACHINERY



Fuel tanks before installation

At filling stations, fuel is stored in stationary tanks. The tanks are manufactured at a specialized plant, delivered to the site, and buried underground. This placement meets safety requirements: it reduces the risk of fire and tank damage and protects the fuel from overheating and sudden temperature changes.

The client sells gasoline and diesel fuel at its filling stations. Each type of fuel is stored in a separate tank. The tanks are cylindrical, with a diameter of 2,500-3,000 mm and a volume of 50,000 to 70,000 liters.

TASK

At filling station tanks, the fuel level is measured manually with a dipstick (a long graduated rod): the operator lowers it to the bottom and determines the level from the fuel mark. Fuel temperature is also measured. The data is then manually entered in a logbook and the volume is recalculated using the tank calibration table with a temperature correction.

The process requires constant staff involvement and takes a lot of time, especially when there are several tanks on site. The data is processed manually, so errors may occur when reading the level, recording values, or converting measurements into liters.

The client decided to automate fuel monitoring. The client needed:

- ✓ real-time data transmission to the dispatcher;
- ✓ fuel movement reports for any period;
- ✓ offline fuel monitoring on a display without internet access.



Fuel level measurement with a dipstick

SOLUTION

In the Technoton fuel monitoring system, the fuel level in tanks is measured by DUT-E 2Bio S7 sensors. The converter receives data from them via Bluetooth and converts it into CAN j1939 messages. The messages are sent to the display for visualization and to the CANUp gateway for transmission to the UNUM Genset cloud.

Fast wireless installation.

Wireless fuel level sensors do not require cable routing. They transmit data via Bluetooth over a distance of up to 50 m.

Explosion-safety certificate.

DUT-E 2Bio S7 can operate in explosive atmospheres and measure the level of both diesel fuel and gasoline.

High accuracy - measurement error below 0.2%.

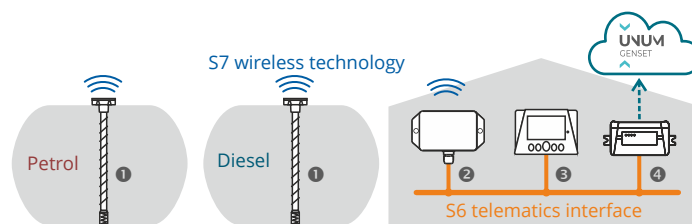
The sensor's third electrode detects changes in dielectric permittivity when the fuel is changed and corrects the measurements. This ensures high accuracy regardless of fuel type.

Fuel temperature measurement.

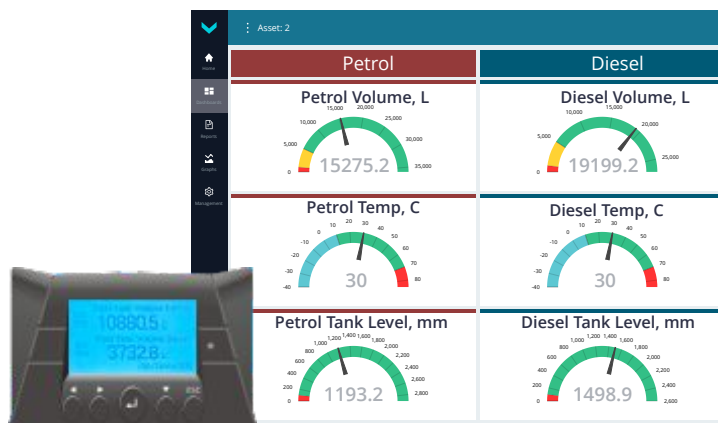
DUT-E 2Bio S7 automatically measures fuel temperature. The operator sees this data in real time.

Fuel monitoring in UNUM Genset.

UNUM Genset monitoring system for stationary assets allows users to monitor fuel in real time and generate fuel movement reports for any period.



Monitoring system components: ① DUT-E 2Bio S7 fuel level sensors
② S7 Radiobox CAN converter ③ MasterCAN Display
④ CANUp telematics gateway



Data on the display (left) and on the UNUM Genset dashboard (right)

Maksim Damarad, Sales Manager, Technoton



"The client needed fuel monitoring at filling stations with several tanks for diesel fuel and gasoline. One of the key requirements was offline monitoring on a local display, without an internet connection. We proposed using MasterCAN Display. The display connects via the CANj1939/S6 interface and shows all the necessary data: fuel level, volume, and temperature. The operator can quickly switch between display screens and monitor the fuel in each tank."

RESULT

The client automated fuel inventory accounting at its filling stations. Fuel data is now available on a local display without internet access and in UNUM Genset for remote monitoring. Company employees no longer need to perform manual measurements or process data.

Routine operations have been reduced, and the risk of errors has decreased. Staff time has been freed up for more important tasks. The monitoring system has been installed at 30 of the client's filling stations, with plans to install it at all stations - more than 100 sites.

Commercial Director of the client company*

"Three advantages distinguish the Technoton monitoring system from other suppliers' solutions."

- **Measurement accuracy.** The relative level measurement error is 0.1-0.2%. When the fuel in the tank is changed, accuracy is maintained - sensor recalibration is not required.
- **Explosion-safety certificate.** The equipment is safe for monitoring gasoline level and can be used in hazardous areas.
- **Remote monitoring and an offline solution.** Equipment and cloud software come from one manufacturer - for both remote monitoring and local control without internet access."

** Details are withheld to comply with GDPR requirements. Additional information may be disclosed upon signing an NDA and with partner's consent.*

