



FUEL-LEVEL SENSORS

FUELLING YOUR BUSINESS

For every business that operates a fleet of vehicles – be they trucks, locomotives or ships – having a handle on fuel costs is critical. Fuel is literally the driving force across every mile, and in many regions accounts for the single biggest slice of operational expenditure. Finding ways to cut fuel costs is a priority.

FUEL MONITORING MATTERS

Telemetry and capacitive fuel-level sensors lie at the heart of effective fuel monitoring, empowering fleet operators to monitor fuel consumption, mileage in km per litre and precise fuel levels at any time. Capacitive sensors are highly accurate and reliable, with a long work-life, and require no technical maintenance. Standard fuel sensors in trucks, for example, simply aren't consistent or accurate enough.



FUEL-LEVEL SENSORS: QUALITY, RELIABILITY AND ACCURACY

Our Fuel and Fleet Management Solutions are globally distributed with high-precision capacitive fuel level sensor. Invented with digital data transmission that has become the de facto industry standard in capacitive fuel-level sensors globally. Our products are used in 110 countries and over 1-million vehicles are equipped with our capacitive fuel-level sensors that are often emulated by competitors.



POWERFUL BENEFITS

Fuel sensors in Utrack's fuel sensor line deliver a wide range of benefits:

- Extreme accuracy of 99.2%
- Consistently high reliability, even in extreme temperatures
- Our sensors are suitable for most fuel tanks (minimum sensor length 150mm, default sizes 700-6000 mm, with the option to shorten to fit the exact tank size even in the field –no special equipment needed)
- Eliminate data noise with Utrack's unique data filtering algorithm
- Wide application area – our sensors can be fitted to tanks on vehicles of virtually any description, on land and on sea and across multiple industries
- Built-in 1500V galvanic isolation for power-lines and communication interfaces protects the sensors and sensor operation in the event of sudden increases in voltage, even in vehicles with no additional galvanic isolation units
- Tamper-proof body for extended reliability and durability
- Consistently high quality of all components, internal and external, is achieved as a result of standardized quality controls maintained across all stages of manufacture (ISO certification ISO 9001:2015)
- The quality of components, manufacture and support means that Utrack sensors have an extended product lifetime and are fully guaranteed
- The quality and reliability of our sensors are validated by multiple deployments internationally
- Fully certified across the board: E-mark, CE, FCC, EAC
- Compatible with third-party on-board terminals

HOW IT WORKS: EASY INSTALLATION

Utrack's sensors are designed for easy set-up and calibration by technicians even in field conditions using the mobile calibration station.

Requiring just the starter kit and a laptop running the Utrack Configurator, the technician prepares the tank, cuts (if required) and calibrates the fuel sensor, mounts the sensor and then calibrates the fuel tank. The sensors are then connected to the Utrack or third-party terminal, ready to start logging and monitoring fuel data.

The whole process is straightforward and should take no more than between one and four hours. If necessary, Utrack provides training, guidance and support every step of the way.

// Vehicle and business efficiency are the main reasons companies invest in telemetry solutions – with the desire to achieve fuel savings the main driver



OUR SENSOR LINE

Our sensors include the **LLS 4**, the **LLS-AF 4** and the explosion-proof **LLS 20230**. They are incredibly robust and highly precise, delivering consistently high accuracy in even the most extreme conditions.



LLS 4

Unprecedented accurate and reliable, extremely tough, with increased all-round protection, including against electrostatic, electromagnetic and conducted interference. The sensor head is specially designed to improve shock resistance while its compact size facilitates installation even in units very close to the fuel tank. The new enhanced cable connection slot with over-moulding is ultra-resistant to humidity, providing protection even when subjected to high-pressure washes. (Ingress protection rating of IP-69K.)



LLS-AF 4

The completely reworked hardware design of the new LLS-AF 4 delivers even better stability. It's intended to be used with the cheapest terminals that don't yet support connection of the LLS 4 digital sensor over RS232/RS485 interfaces. The LLS-AF 4 has analog and frequency-modulated outputs protected by galvanic insulation and working independently throughout the range of power supply voltage. A special 'Tough Road Conditions mode' provides extra smoothing with several levels of filtration algorithms for consistent high performance in extreme road conditions. The new enhanced cable connection slot with over-moulding is ultra-resistant to humidity. The LLS-AF 4 also has an improved ingress protection rating of IP-69K.



LLS 20230

The explosion-proof **LLS 20230** uses advanced technologies for deployment in hazardous situations and potential explosive zones. Designed for uninterrupted, reliable operation in extreme temperature variations (from -60° to +85° Centigrade) and featuring reverse polarity protection, the LLS 20230 connects and operates via the BIS 20240 block and a special KTZ cable which ensure safe fuel level monitoring installation and operation in the most demanding conditions.



SPECIFICATIONS

PARAMETER	LLS 4	LLS-AF 4	LLS 20230
Size, mm	700, 1000, 1500, 2000, 2500, 3000	700, 1000, 1500 ²	1500, 2000, 2500, 3000, 4000, 5000, 6000
Error in measurement, %	± 1,0%	± 1,0%	± 1,0%
Output	RS-232, RS-485	Analog / Frequency	RS-232, RS-485
Programmable baud rate, bit/s	2400, 4800, 9600, 19200, 38400, 57600, 115200 bit/s	19200	2400, 4800, 9600, 19200, 38400, 7600, 115200 bit/s
Power supply voltage, V	7...80	7...45	8,5...10,5
Current consumption, max, mA	40	80	50
Power consumption, max, W	0,4	0.6...0.9	0,4
Ingress protection rating	IP69k	IP69k	IP57
Dielectric strength of galvanic isolation, min, V	1500	250	2500

OPERATING CONDITIONS

Operating temperature, C	-60 ... +85	- 40 ... +80	- 40 ... +80
Relative humidity at 25 °, %	5 ... 95	5 ... 95	5 ... 95
Air pressure, kPa	84 ... 107	84 ... 107	84 ... 107
Maximum allowed humidity level, %	100	100	100
Resolution, bit	12	12	12
Output range of readings corresponding to the maximum value of measured level	1...4095	5...20V/100...2000Hz	1...4095
Output range of readings corresponding to the minimum value of measured level	0...1023	0...15V/30...1900Hz	0...1023
Absolute error in temperature measurement within the operating temperature range, C	± 2	Not applicable	± 2
Temperature measuring range, C	- 40 ... + 80	- 40 ... + 80	- 55 ... +80
Measurement frequency, s	1	1	1
Interval of automatic data output, s	1 ... 255	Continuous	1 ... 255
Size of internal filter of measurement results, points	0 ... 30	0 ... 30	0 ... 30
Operation mode	Continuous	Continuous	Continuous
Average service life, years	8	8	8

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