



ENAIKOON ultrasonic fuel-level sensor

Product Summary

The ENAIKOON ultrasonic fuel-level sensor is the perfect solution for monitoring the fuel level and fuel consumption of trucks, fuel tankers, boats, construction equipment, generators, stationary tanks, etc.

The sensor works independent of the vehicle electronics, therefore it can detect and report a fuel theft in real-time by sending an alert even when the vehicle is switched off.

On top of detecting fuel-theft, it also allows real-time fuel monitoring and calculation of the remaining mileage based on the content of the tank.

The ENAIKOON ultrasonic fuel-level sensor consists of a stethoscope-like sensor and the required cabling as well as the ENAIKOON fuel-tracker plugin, an extension of inViu pro (ENAIKOON's highly secure telematics web portal).

The current tank fuel-level is measured and recorded directly by the sensor. This data is then sent along with the GPS data from the ENAIKOON locate-04 or ENAIKOON locate-06 to the ENAIKOON M2M-comms-server, where it is then processed to display on your computer, tablet or mobile phone web browser.

All components are proudly "Made in Germany".



Key features

- easy and trouble-free installation:
 - the sensor is glued externally to the bottom of the tank:
 - no drilling or modification to the tank is required
 - draining of the tank fuel is not required
 - no parts are placed inside the tank
 - no moving parts
- no calibration is required by the end-user
- the device can be removed and placed onto a different tank (no permanent installation)
- the device can detect the position of the tank compartment separators prior to installation
- waterproof sensor and connectors
- outputs:
 - analog 0-3 V
 - serial interface RS232
 - 1Wire interface
- three LEDs for displaying the device power status and signalling
- tank temperature measurement and temperature compensation of fuel level measurements
- configurable for all different types of liquid fuel
- measurement filtering
- measures the fuel levels from the bottom up to the top of the tank
- tolerates a water layer on the tank bottom unlike other fuel sensors
- ultra low power consumption:
 - automatic measurement rate control provides additional power savings for a parked vehicle
- internal LiPo Battery for self-sustained operation
- field upgradeable firmware over the cellular network
- Molex connectors for the power supply and interface
- rugged aluminium enclosure

Technical specifications

Fuel level measurement		
Maximum depth	100 cm	
Minimum depth	4 cm	Nominal value. Minimum depth depends on tank wall material and thickness and quality of acoustic contact between the sensor and the tank bottom
Absolute accuracy	4 mm	For standard diesel at 25 °C
Relative accuracy	1 mm	For standard diesel at 25 °C (Measured for a change in fuel level of 10 cm)
Resolution	0.25 mm	
Maximum road slope	6 degrees (10.5%)	Nominal value. Typical device performance is up to 8 degrees (18%). Maximum road slope depends on tank wall material, thickness, and quality of acoustic contact between the sensor and the tank bottom.
Power supply		
External power supply	6-31 V	
External 24 Volt power supply current	3 mA	At zero 1-wire activity and with minimum measurement rate due to completely relaxed fuel surface, battery charging completed
	6.3 mA	At zero 1-wire activity and with maximum measurement rate, battery charging completed
	75 mA	At maximum power consumption (battery charging active)
Internal battery	LiPo 3.7 V, 950 mAh	
Expected battery duration	7 days for 950 mAh	At zero 1-wire activity and with minimum measurement rate due to completely relaxed fuel surface
Battery charger low temperature limit	0 °C	
Battery charger high temperature limit	50 °C	
I/O		
Analogue output range	0 → 3 V DC	0 V represents 0 mm depth. 3 V represents 1000 mm depth. Resolution 1 mm
Analogue output resistance	440 Ohms	
Physical		
Electronics box dimensions	Size	104 x 107 mm (excluding connectors)
	Height	37 mm
Sensor dimensions	Diameter	40 mm
	Height	20 mm (excluding screw heads)
Sensor cable length	7 m	
Temperature range without the battery	-40 °C to 85 °C	
Waterproofing	Sensor and extension cable (connectors)	waterproof IP67
	electronics	not waterproof IP21
Wall thickness	Tested for normal and not extraordinary fuel tank thickness (aluminium max. 4 mm, iron max. 3 mm). Sensor for thicker tanks on request.	

Products and prices

Product	Part no.	Product description	Price
ENAIKOON fuel-level electronic unit	EFT-15-01	<p>ENAIKOON fuel-level electronic unit</p> <ul style="list-style-type: none"> ● for measuring the fuel tank contents together with ENAIKOON fuel-level ultrasonic sensor ● including cable <p>The ENAIKOON fuel-level ultrasonic sensor is required for use of the electronic unit. Up to 4 electronic units can be connected. If a truck has multiple tanks then for each tank one electronic unit and one sensor is required.</p>	€ 239.00
ENAIKOON fuel-level sensor ultrasonic	EFT-15-03 EFT-15-02	<p>ENAIKOON fuel-level sensor ultrasonic</p> <ul style="list-style-type: none"> ● ultrasonic sensor for measuring the fuel tank contents ● suitable for aluminium and iron tanks ● including 6 meter extension cable <p>The ENAIKOON fuel-level electronic unit is required for use of the sensor.</p> <p>ENAIKOON fuel-level sensor ultrasonic ALU ENAIKOON fuel-level sensor ultrasonic IRON</p>	<p>€ 189.00</p> <p>€ 189.00</p>

Software

Product	Part no.	Product description	Monthly Fee		
			1-9 units	> 25 units	>100 units
inViu pro web service	EFC-04-48 EFC-04-24	<p>Internet based software for the management and monitoring of trackables</p> <ul style="list-style-type: none"> ● any time access to the web portal ● OpenStreetMap® is used ● establishment of main and sub-accounts with separate management ● creation of geofences in main and sub-accounts ● report generator for evaluations ● detailed online manual ● automatic sending of reports ● use of the ENAIKOON M2M-commsserver 			
		<p>minimum contractual duration: 48 months minimum contractual duration: 24 months</p>	<p>€ 19.90 € 24.90</p>	<p>€ 17.90 € 22.90</p>	<p>€ 14.90 € 19.90</p>
ENAIKOON fuel-tracker web service	EFT-10-48 EFT-10-24	<p>Enhancement of inViu pro by ENAIKOON fuel-tracker</p> <p>minimum contractual duration: 48 months minimum contractual duration: 24 months</p>	<p>€ 7.90 € 9.90</p>	<p>€ 6.90 € 8.90</p>	<p>€ 5.90 € 7.90</p>

Additional hardware

Product	Part no.	Product description	Price
ENAIKOON locate-04 complete package	LOC-09-04	Basic tracking device GPS / GPRS <ul style="list-style-type: none"> ● GSM / GPS window antenna ● connection cable (power supply and I/O) ● backup battery 560 mA/h ● 1-wire connector for ENAIKOON driver-id ● configurable 	€ 149.00
ENAIKOON device setup	M2M-03-01	Device setup <ul style="list-style-type: none"> ● activation and unlocking of the SIM card ● insertion of the SIM card into the device ● software configuration and installation on device ● production of harness according to customer needs ● device configuration ● registration with the ENAIKOON M2M-commserver ● registration with inViu pro / web ● full functional test of the device ● full functional test with inViu pro / web (must be ordered along with the device) 	€ 99.00
Complete package: Special adhesive for ENAIKOON fuel-level ultrasonic sensor	ZUB-14-02	Complete package special adhesive for the fuel-level ultrasonic sensor sufficient for mounting of 50 ultrasonic sensors <ul style="list-style-type: none"> ● tube 50 ml ● 50 mixing tubes ● 1 pressing gun 	€ 139.00
Fixing band for mounting of the ENAIKOON ultrasonic fuel-level sensor to tanks	ZUB-15-01	Complete package with fixing band for mounting of the ENAIKOON ultrasonic fuel-level sensor to tanks 5/8" (16 mm), length 32,8 yd (30 m), corrosion-resistant stainless steel A2 <ul style="list-style-type: none"> ● sufficient for the fastening of 10 - 12 ultrasonic sensors to a standard tank with height and depth of 24" (60 cm) ● Fixing band: incl. 13 stainless-steel loops 5/8" (16 mm) and 1 clamping tool 	€ 149.00

Optional hardware

Product	Part no.	Product description	Price
ENAIKOON locate-06 complete package	LOC-07-06	Basic device GPS / GPRS <ul style="list-style-type: none"> ● GSM / GPS window antenna and connection cable (power supply and I/O) ● camera connector ● backup battery 560 mA/h ● 1-wire connector for ENAIKOON driver-id ● configurable 	€ 249.00