

Installation and Operation of Tankspion-IoT Devices

Tankspion-IoT

Firmware V2.0(+)

Tankspion-IoT PRO

Firmware V3.40(+)

Tankspion-IoT GPS

Firmware V3.40(+)

- Battery-operated remote measuring system for Tank content and level
- Reports via NB-IoT network to OilView and app



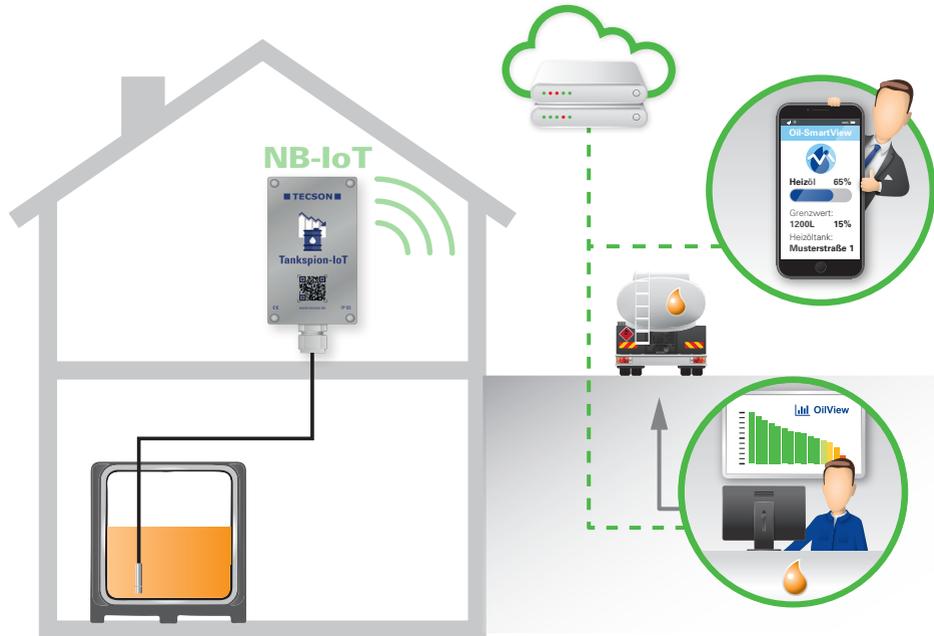
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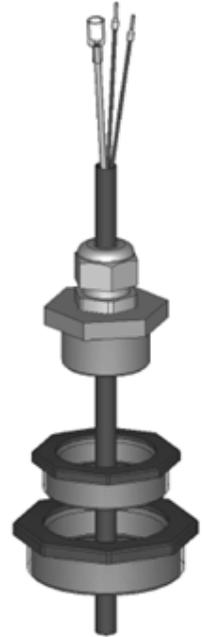
General Notes

- The Tankspion-LoT provides tank content measurement for non-pressurized liquid containers using a level probe with a 4-20 mA signal connection (2-wire principle).
- The device is a battery-powered oil tank measurement system with IoT integration via the NarrowBand cellular network and remote data transmission to the secure web server oilview.de.
- The device is suitable for outdoor installation or use in damp environments (protection class IP65). Commissioning is done after connecting the tank measurement probe and mounting the device, usually wall-mounted with two dowel screws.
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- The guidelines in the device documentation must be followed regarding installation and mounting of the device. The relevant safety regulations for oil storage tanks must be observed.
- The fill level measurement system is not a safety device against tank overfilling.
- The Tankspion-LoT Pro and GPS versions offer various additional and alarm functions with different additional inputs.



Mounting of Level Probe

- For basement-welded steel tanks and underground tanks, the measurement probe is installed using the supplied tank fitting with a cable passage.
- For basement tanks, the previously used tank gauge with float must be removed so that this screw opening can be used.
- For underground tanks, there is usually a free screw opening that is sealed with a removable blind plug.
- If no other suitable option exists, the level measurement probe can also be installed in the bearing pipe, if available. In this case, we recommend screwing a T-fitting plus nipple piece onto the dip pipe head (available as an accessory). The probe cable is led out sideways from the T-fitting. Occasional manual dip measurements can still be made alongside the probe cable.



Installation:

- Free the screw opening on the tank, and if necessary, remove the existing blind plug.
- If needed, slide the tank fitting with a reducing piece over the probe cable and insert the measurement probe into the tank.
- Screw in the tank fitting with PTFE tape.
- Allow the probe to sink entirely into the tank until the probe head contacts the bottom. Preferably, the probe can also be positioned lying on the tank bottom.
- Then fix the cable by tightening the cable screw connection.
- Electrical calibration of the tank measurement probe to the container is not required, as it is factory-calibrated.

Connection of the Probe cable:

- **Probe signal:**
Low voltage, 4 - 20 mA
- **Connection:**
2 wire probe cable with red at terminal 4 (+ 8 - 24 V) and black at terminal 5 Input (-)

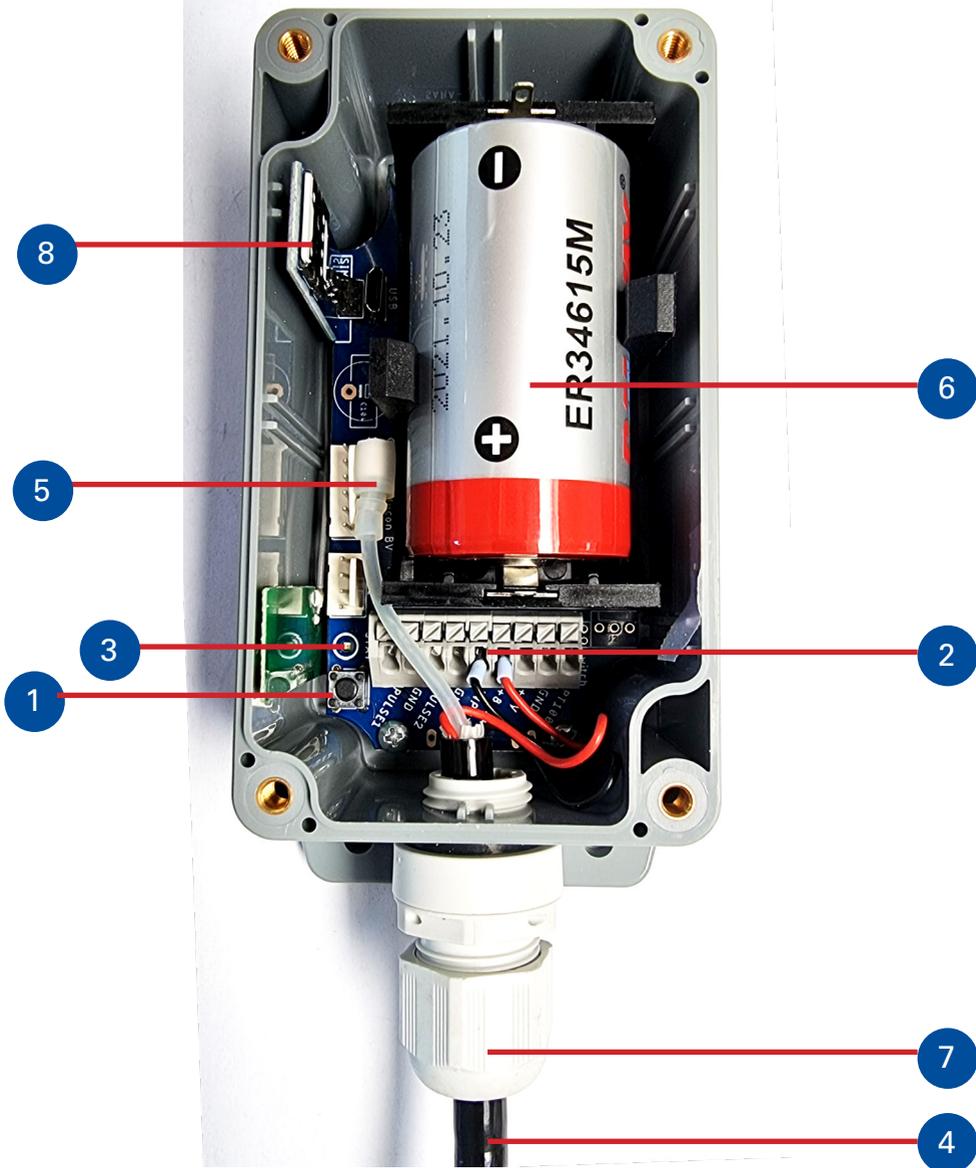
Cable gland:

- Hand-tighten the PG cable gland and then use a tool to tighten it one more turn.

Pressure Compensation via the probe cable:

- The PG gland of the device housing integrates a pressure compensation element. This way, the relative pressure probe receives atmospheric reference pressure.

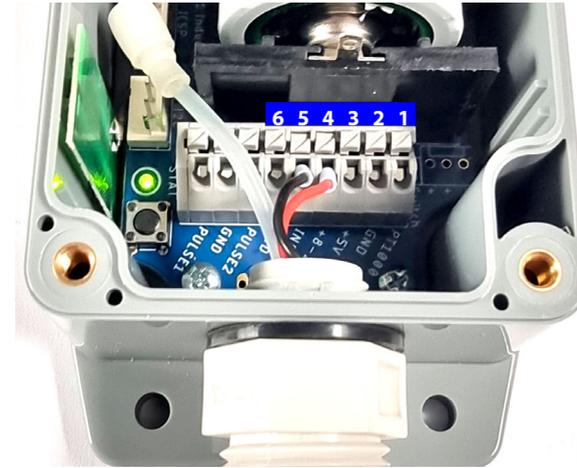




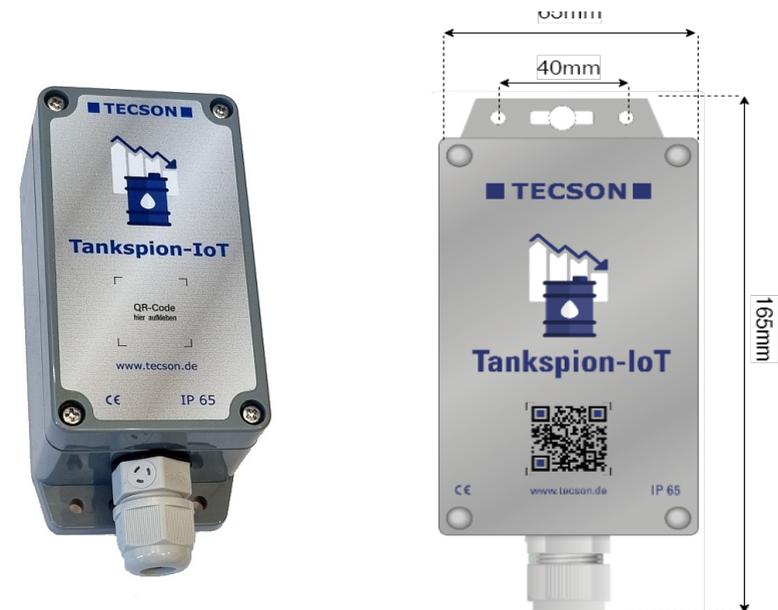
- | | | | | | |
|---|----------------|---|--|---|--|
| 1 | Wake UP Button | 4 | Probe Cable | 7 | PG Screw connection with pressure compensation |
| 2 | Terminal | 5 | Air Capillary | 8 | SIM Card Holer |
| 3 | Status LED | 6 | Lithium Battery D cell 3,6V
Spare part: Item no.: 13971 | | |

Setting Up the Device:

- After connecting the probe cable with + and - to the terminal strip (5 and 4, see image), remove the battery contact protection film. The LED will light up for about 20 seconds.
- Then, press the wake-up button once. The green LED will light up continuously during the connection attempt. Please note that the initial registration usually takes 2 to 3 minutes.
- You can attach the included QR code to the device cover, or for example, on the oil tank, the tank room door, or possibly even further away.



The QR code is used to retrieve and display the most recently sent liter data from the device.



Tankspion-IoT PRO

Connection of the Probe Cable:

- Low voltage, 4 - 20 mA, two-wire principle:
Connect the probe cable in the two-wire principle to the '2 Wire' terminals
Connect the red cable to terminal P+ and the black cable to terminal P-.
- For 3-wire sensors (special version):
Connect Ub to terminal P+, signal line (Output) to terminal P- and ground wire to GND.
- PT1000 temperature sensor:
Connect the red cable to terminal Temp-In and the white cable to terminal GND.



1

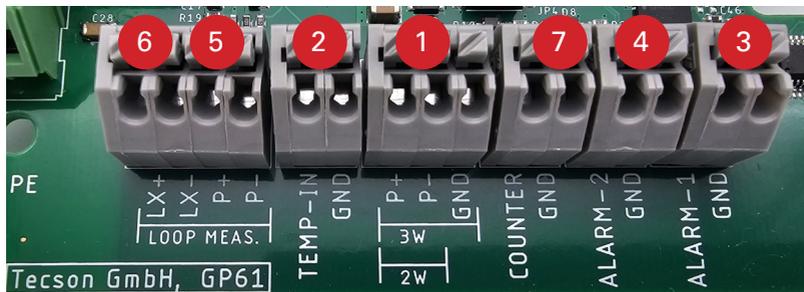
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Alarm Contact Inputs:

- The Tankspion-IoT PRO has two configurable contact inputs, which can be used, for example, to connect a burner malfunction contact (potential-free switch contact, possibly with a relay in between).
- Alarm input 1 (Normally Closed - NC) and Alarm input 2 (Normally Open - NO):
When a signal occurs at the alarm input, an alarm message is triggered after 3 minutes. If the contact closes (configurable), the remote alarm message occurs after 3 min.
- Alarm message for signal occurrence at input 'Alarm 1' (ALARM 1 + GND):
The message text is: "Alarm1" (configurable).
- Alarm message for signal occurrence at input 'Alarm 2' (ALARM 2 + GND):
The message text is: "Alarm2" (configurable).

3

4



6

5

2

1

7

4

3

Connection of the Level Probe with Device Combination

'Tankspion-IOT PRO/ GPS' with 'LX-Device'

Loop-Measurement with the TECSON tank content measuring devices:

Connect the measuring probe with its 2 wire signal cable to the Tankspion-IoT (Pro/GPS)

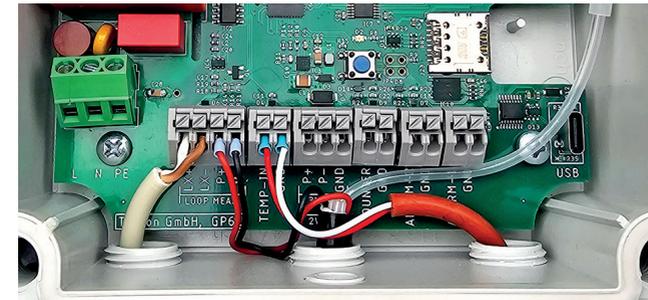
- red to terminal 'P+'
- black to terminal 'P-'

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Additionally, make a 2-wire line connection from the Tankspion-IoT to the LX device:

- LX (+) to the LX device on input terminal 1
- LX (-) to the LX device on input terminal 2

6



Device combination Tankspion-IOT PRO/ GPS with LX devices

Power Failure detection with "Tankspion-IOT PRO/ GPS"

- Automatic Power Failure Detection and Alarm Notification:
- Application Scheme: The device is connected to 230V AC. Additionally, the Tankspion-IoT PRO and GPS have an internal battery that is automatically activated when a power failure is detected.
- Once the Notification - Function is Activated in the OilView System: The device automatically sends a notification to the OilView system. Administrators or selected users are informed about the power failure via mobile app, email or SMS to ensure a prompt response if necessary.

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Tankspion-IoT GPS

Enhanced Functionality with GPS Device Location:

The Tankspion-IoT GPS is an advanced version of the proven Tankspion-IoT PRO and includes an additional GPS device location feature. This versatile device is particularly suitable for mobile applications such as heating vehicles and for locations without a clearly defined address, such as wells, groundwater monitoring stations, lakes, and watercourses.

With the Tankspion-IoT GPS, you gain access to enhanced GPS location services.

Note on the GPS Antenna:

To use the GPS function, the included weatherproof 4G LTE / GPS combo antenna is required. Mounting this antenna outdoors ensures optimal reception for precise location data.

Location Data and Application:

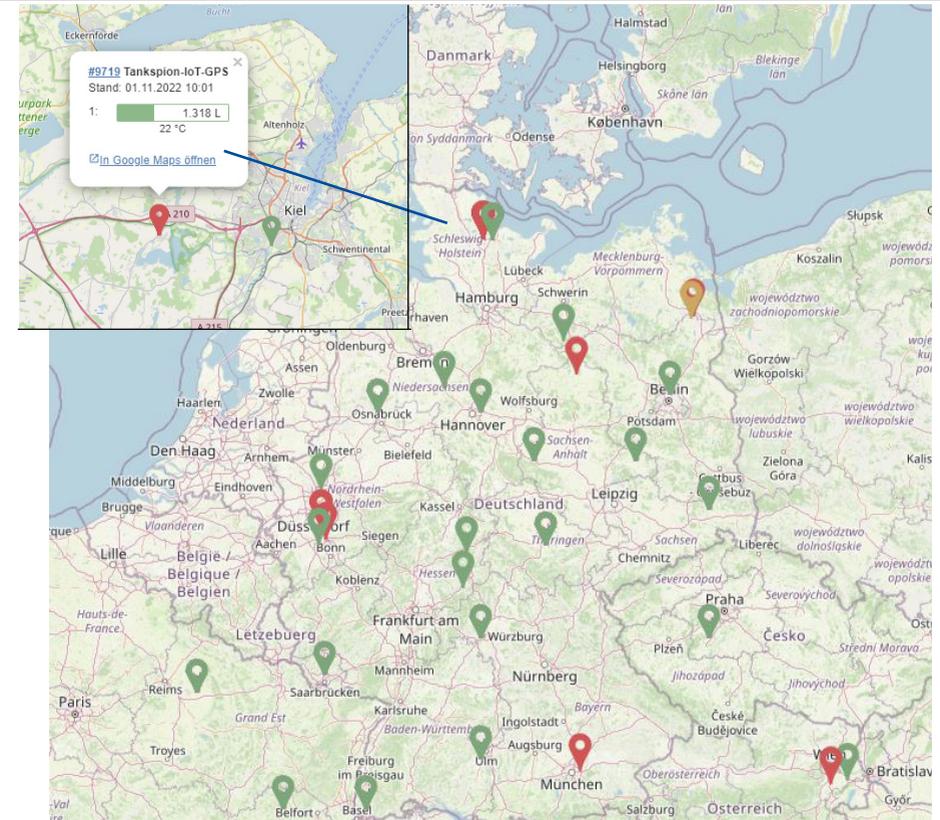
The recorded location data is available through the OilView portal as well as the oil-SmartView app.

You also have the option to directly access 'Google Maps' or Apple Maps on iOS devices from these platforms to facilitate navigation to the site.

The Tankspion-IoT GPS thus offers not only enhanced functionality but also a convenient way to monitor and locate your installations and resources.



- 1 LTE Antenna connection
- 2 GPS Antenna connection



Technical Data		Specification	
Power supply:	3,6V Lithium Battery 14Ah Item no.: 13971 Optional 230V AC for PRO and GPS	D cell ER34615M	
Measurement Input:	4-20mA; U _b ca 15V	Meas. resolution: 12 Bit	Meas. deviation: < 1%
Dimensions H x B x T: [with flanges]: PRO / GPS versions:	115x65x55 [mm] 145x65x55 [mm] 155x130x60 [mm]	Housing: ABS, protection class: IP65 with pressure compensation element	
Antenna:	Tankspion-IoT: intern. PRO: external GPS: external	Frequency range: 824~960/1710~2170MHz 824~960/1710~2170MHz GPS: 1575.42±3MHz	
Transmission Type:	NB-IoT is based on LTE Cat M1 and NB-IoT with GSM / GPRS fallback		
SIM Card Format:	3FF Micro SIM Card, e-SIM included		
Data reporting target:	OilView Server (IoT Cloud)		

Standard Measuring Probe

Type:	TDS-61-250-P6	Protection class of probe:	IP68 according to IEC 529
Voltage:	U _b from measurement input: ~15V DC		
Materials:	V4A; POM; FPM; PUR	Cable length 5-6 m, orderable with 5 m extra length each	
Mounting Position:	Horizontally lying or vertically hanging with bottom contact		
Temperature range:	Media temperature: 0 °C to +45 °C, higher on request		
Measuring range:	250mbar, 25kPa (2,5m water column or 2,9m oil column)		
Screw-in connection:	1 inch and 1.5 inch included		

Measuring Fluids:

Compatible and suitable measuring fluids at ambient temperature:

Heating oil EL	according to DIN 51603-1
Diesel fuel DK	according to DIN EN 590
Biodiesel	according to DIN EN 14214
Water	
Urea solution	e.g. AdBlue according to DIN 70700
Gasoline with flash point < 55°C	Only after consultation, at least with ATEC measuring probe and ATEX barrier
Various other	After consultation!

LED Flash Codes:	
LED flashes green 2x:	SIM Card not recognized in modem
LED flashes green 3x:	The inserted SIM card has a PIN number. The PIN must be deactivated for the SIM card beforehand.
LED flashes green 4x:	No network / Poor reception. External antenna is required or position more advantageous.
LED flashes green 5x:	Data cloud is not accessible.
LED flashes green 6x:	Other error: software or hardware error.
For error situation: Please press the wake-up button again. If necessary, remove the battery for 20 sec.	

Firmware Update:

The update process is automatic. You do not need to do anything. The device independently searches for updates and updates itself automatically.

The Tankspion-IoT is connected to the secure Tecson web server. If your device does not measure or report correctly, please contact the TECSON support team.

Battery Replacement:

Loosen the 4 screws on the device cover with a screwdriver and remove the cover.

Replace the lithium power battery, D Cell ER34615M (TECSON spare part, Art. No. 13971).

CAUTION when handling the battery, as it is a high-power cell.

Finally, reattach the device cover by screwing it back on.

No liability is accepted for any damage to the device caused during or after the battery replacement. Please dispose of all old batteries and accumulators from the device in an environmentally friendly manner!

Disposal According to the Electrical and Electronic Equipment Act:

Electrical and electronic devices must not be disposed of with household waste. Instead, they should be collected separately from unsorted municipal waste.

Private households can also drop off their old electrical devices for free at municipal collection points. An online directory of collection and return points in your area can be found here:

<https://www.ear-system.de/ear-verzeichnis/sammel-und-ruecknahmestellen>

The manufacturer TECSON GmbH & Co. KG is registered under WEEE registration number DE 186 396 42 in the manufacturer register of EAR



Setting Up the APP (oil-SmartView):

Scan the QR code with your smartphone to download the app directly.

Alternatively:

Open the app store. Under "Search," enter: oil-SmartView.

Click on "oil-SmartView" in the list, then click "install."



Google Playstore



Apple Store

Oil-SmartView

Tecson GmbH & Co KG

3.4★ 6 reviews
1K+ Downloads
USK: All ages

Install on more devices

Share

This app is available for all of your devices



Registration

If you already have a customer account, please log in with your email address and password.

Otherwise, please register as a new customer.

All input fields marked with an asterisk as mandatory fields are required to set up a user account for you.

If you want to retrieve the fill level data from the Tankspion-IoT via the OilView inventory management system, simply download the form and print it on your printer.

Alternatively, you can fill out the form directly on the screen and then send it via email.

Return the completed form via email to eingang@tecson.de.

TECSON GmbH & Co KG

Deutschland 🇩🇪 | USA 🇺🇸

User name

Password

Keep Logged in

[Forgot password](#)

LOGIN

OR

SIGN UP | DEMO

OIL PRICE

TECSON GmbH & Co KG

Email*
example@email.com

First name*

Last name*

Company

Street*

Number*

Zip Code*

City*

Network | SMS | lot

Ident code*

Country Code
DE

With Partner dealer

Without Partner dealer

By clicking on the register Button, you agree to the [terms, conditions and privacy policy](#) of Tecson

ANNUAL FEES

REGISTER

Already have an Account? LOGIN

If you already have a customer account and you lost your password, please enter your email and use the reset password function.

Forgot password? Please enter your registered e-mail address and press Send, we will send you a link to reset the password.

Entering Tank Data in the App:

Under 'Tank Settings', set the tank parameters:

Tank Name:	Your custom tank designation (e.g., basement tank or yard tank).
Tank Content:	Selection of the tank content (e.g., heating oil, diesel, or water).
Fill Limit:	Specify the upper fill limit (threshold shutdown). For heating oil tanks, this value is often 95%.
Capacity:	The total volume in liters.
Thershold:	Reserve level, e.g., 15% of the tank volume.

After configuring the parameters, the tank is monitored independently of time and location.

Your tank and your app login are linked 1:1.

The Tankspion-LoT device is securely connected to the TECSON web portal www.OilView.de.

If you change your smartphone, no data is lost.

QR Code Display on the Tank:

The tanker driver can quickly and directly determine the tank's available capacity before starting the refueling process using the QR code sticker.

You can stick the included QR code on the device cover.

Scan it with a smartphone or tablet to retrieve the current or last remotely reported status of your oil tank.

The camera app of your smartphone is usually sufficient to read the QR code. smartphone.

The device package includes two identical stickers with the QR code.

The smartphone opens a page in the web browser displaying the current status in liters and percentage, the refuelable free space in liters, and the total volume of the tank.

QR Status Page:

Status: Time and date of the last measurement. 1

Tank1: The current fill level is displayed in the top row. 2

Free Space*: The fillable free space. This must be determined before refueling! 3

Volume: Total volume. 4

The location of the installation is displayed in the bottom row. 5

*In addition to the normal display of the current stock, the fillable free space before the refueling process is also displayed, in accordance with the regulations of TRWS 791.

■ **TECSON** ■

Kompetenz in Tankmesstechnik



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Manufacturer's Declaration:

The manufacturer TECSON hereby declares compliance with the applicable safety and testing guidelines.

The current declaration of conformity can be found as a printable PDF file on our website www.tecson.de under the 'Documentation' section.

