

Installation/Commissioning of Tankspion-IoT Devices

Tankspion-IoT

Firmware V2.0(+)

Tankspion-IoT PRO

Firmware V2.11(+)

Tankspion-IoT GPS

Firmware V2.15(+)

- Battery powered oil tank measuring system
- Reports via NB-IoT network to app



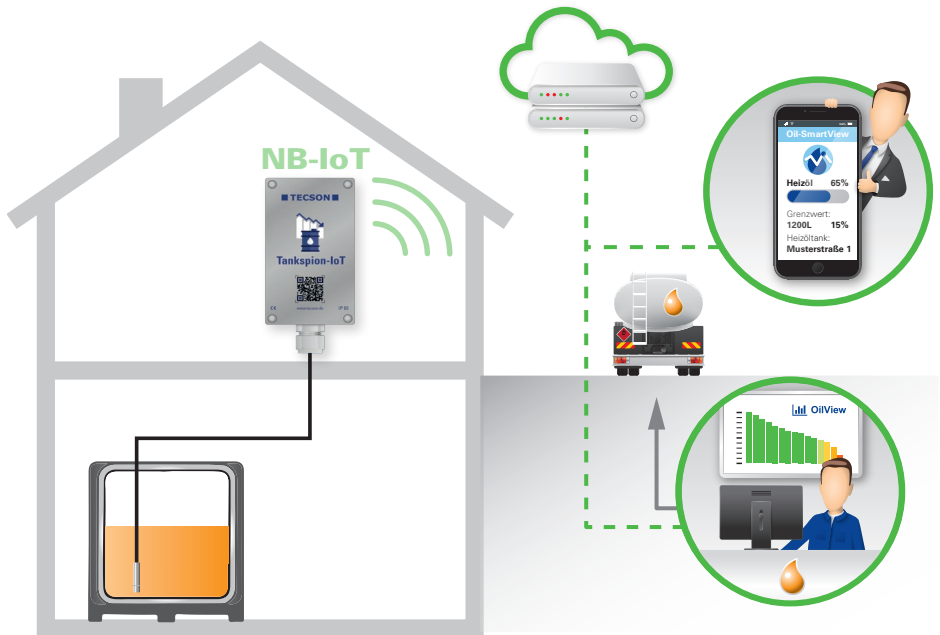
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General Notes

- The Tankspion-LoT is used to measure the tank content of unpressurized liquid tanks through a level probe with 4-20 mA signal connection (2 wire principle).
- The device is a battery-powered level measurement system, with IoT integration via narrowband cellular network and remote data reporting to the secure web server oilview.de .
- The device is suitable for outdoor installation (protection class IP65).
- Commissioning takes place after connecting the measuring probe and mounting the device - usually wall mounting with two dowel screws.
- With regard to installation and assembly of the device, the specifications of the device documentation must be observed. The relevant safety regulations for oil storage tanks must be satisfied.
- The level measuring system is not a safety device against overfilling the tank.

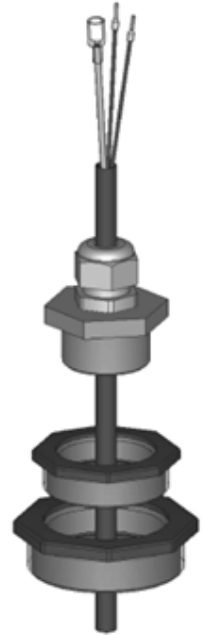


Mounting of Level Probe

- For tanks welded within cellarage and underground tanks, the probe is installed using the supplied tank screw connection with cable passage.
- For cellar tanks, disassemble the previously used fuel gauge with float to allow the use of the screw-in opening.
- For underground tanks, there is usually a free screw-in opening that is closed with a removable dummy plug.
- If there is no other suitable possibility, the level measurement probe can also be inserted in the bearing pipe, if present. In this case, we recommend screwing a T-joint plus nipple piece onto the bearing tube head (available as an accessory). The probe cable can be led out of the side of the T-joint. The occasional inspection bearing thus remains possible parallel to the probe cable.

Installation:

- Free the screw-in opening of the tank and, if necessary, remove the existing dummy plugs.
- If necessary, slide the tank screwing with reducer over the probe cable and insert the measuring probe into the tank.
- Screw in the tank fitting with PTFE sealing tape.
- Allow the probe to fully sink into the tank until the probe head makes contact with the bottom. The probe may preferably also be positioned lying on the tank bottom.
- Then fix the cable by tightening the cable screw connection.
- Electrical calibration of the tank measuring probe to the tank is not necessary.



Connection of the Probe Line:

Probe signal:

Low voltage, 4 - 20 mA

Connection:

2 wire probe cable with

black at terminal 5 Input (-)

and red at terminal 4 (+ 8 - 24 V)

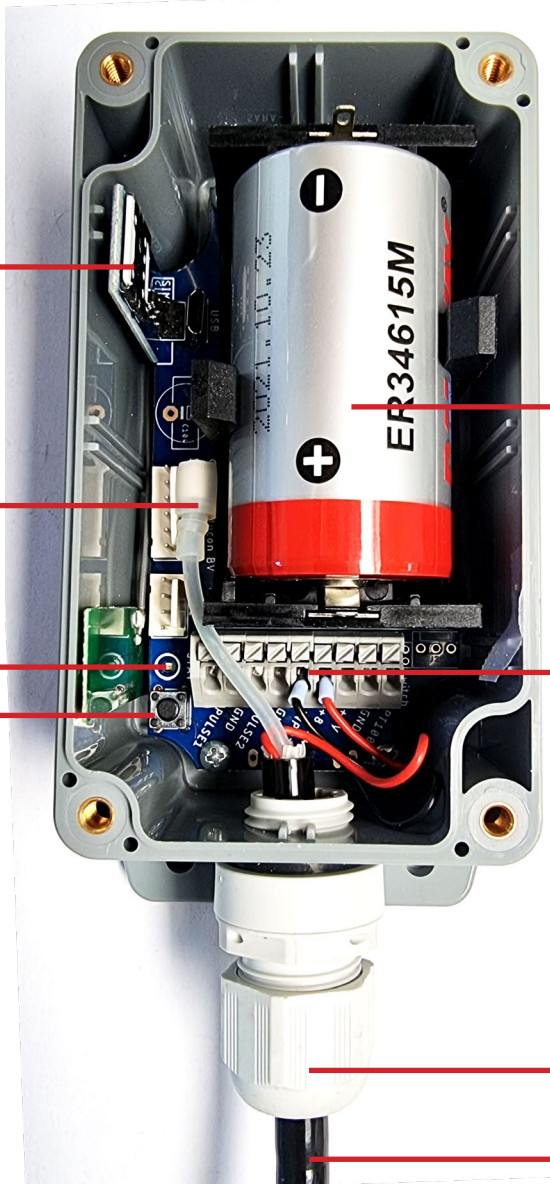
Cable Screw Connection:

- Hand-tighten the PG cable screw connection and use a tool to tighten it by one more turn.

Pressure Compensation via probe cable:

- A pressure compensation element is integrated in the PG screw connection of the device housing. Through this, the relative pressure probe receives the atmospheric reference pressure.

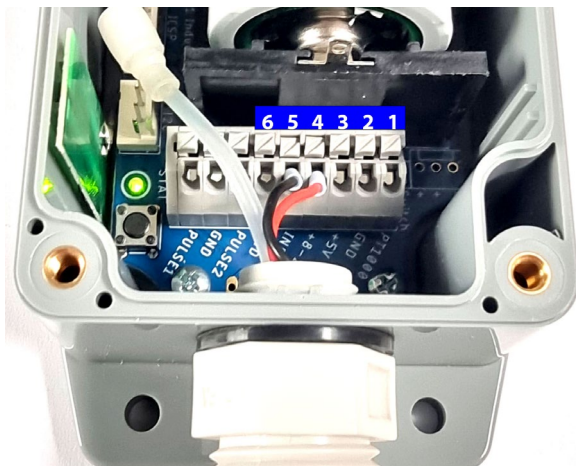




- | | | |
|-------------------------|---|---|
| 1 Wake up button | 4 Probe cable | 7 PG screw connection with pressure compensation |
| 2 Terminal | 5 Air capillary | 8 SIM card holder |
| 3 Status LED | 6 Lithium battery D cell 3,6V
Spare part: Item no.: 13901 | |

Device Commissioning

- After connecting the probe line with + and - to the connection terminal (see picture), remove the contact protection foil of the battery. The LED lights up for approx. 10 seconds.
- Then press the wake-up button once. The green LED lights up continuously during the dial-up attempt. Please note that the first registration normally takes 2 to 5 minutes. You may stick the enclosed QR code on the device lid or, for example, on the oil tank, on the tank compartment door or, if necessary, further away.



Via QR code, the most recent tank content data can be retrieved and displayed.



Tankspion-IoT PRO

Connection of the probe line:

- Low voltage, 4 - 20 mA, 2 wire principle, connection to terminals with red at terminal P+ and black at terminal P-
- 3 wire sensors (special version): Ub to terminal P+, signal line (output) to terminal P- and ground wire to GND.
- PT1000 temperature sensor: Connect the 2-wire cable of the temperature sensor with red to the Temp-In terminal and white to the GND terminal.

1

2

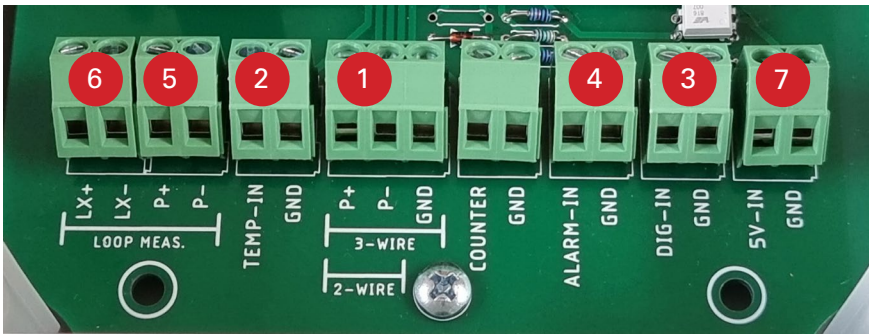


Alarm Contact Inputs:

- The Tankspion-IoT PRO has two configurable contact inputs, e.g. for connection of a burner fault signal contact (potential-free switching contact, interconnect a relay if necessary).
- Alarm message on occurrence of a signal at input 'Alarm 1' (DIG-IN + GND). Message text: Alarm1 (configurable). If the contact closes (configurable), the remote alarm message occurs after 3 min.
- Alarm message on occurrence of a signal at input 'Alarm 2' (ALARM IN + GND). Message text: Alarm2 (configurable).
- If the contact opens (configurable), the remote alarm message occurs after 3 min.

3

4



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)

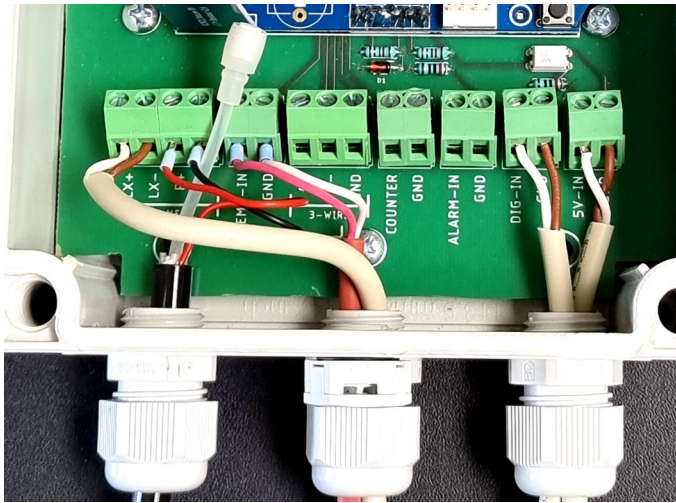
- red to terminal 'P+'
- black to terminal 'P-'

5

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



Blackout Detection with Device Combination

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

- Connection: Connect the supplied 2 wire signal cable with white to terminal 5V-IN and brown to terminal GND. Connect the other side to the PIN-bar X-2 of the LX-2-R device. Alternatively you could connect a 5V power supply. (5V not present => remote signalling of power failure).

7

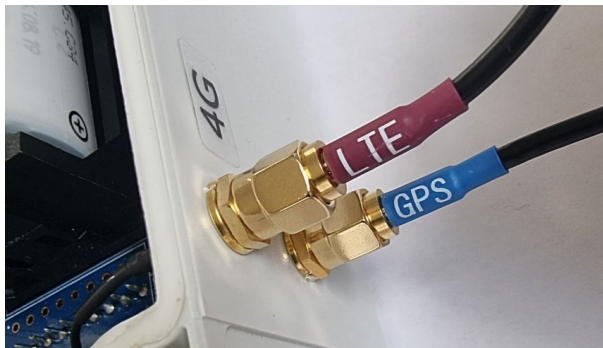
Tankspion-IoT GPS

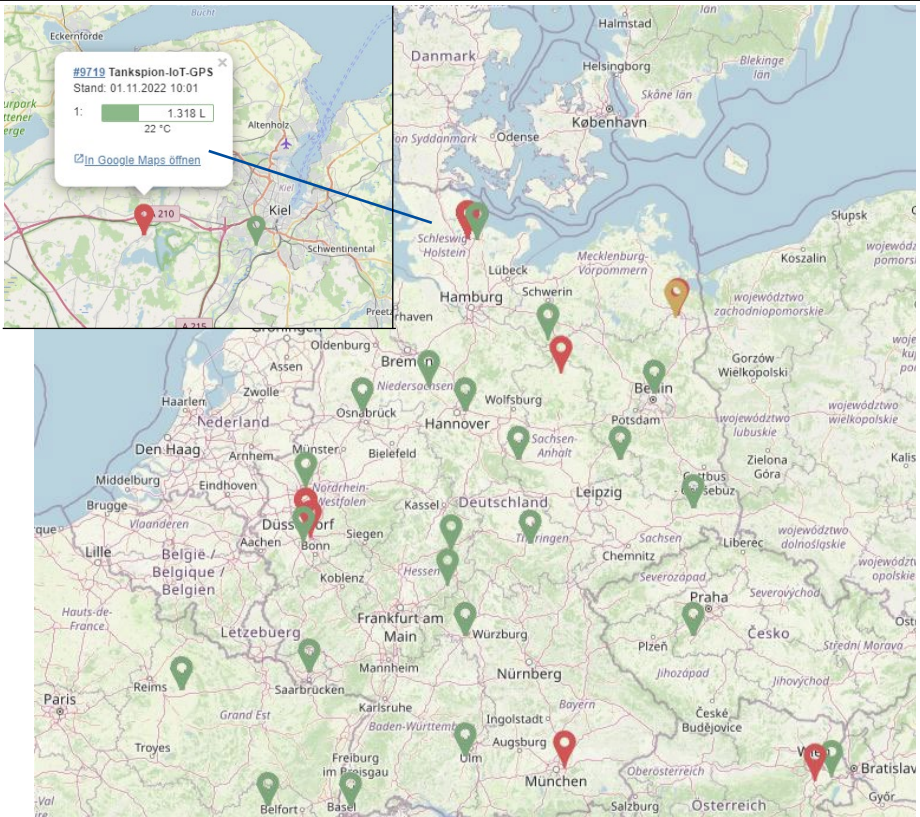


For mobile applications, such as mobile heating systems or systems without a local address, such as wells, groundwater measuring points, lakes, waterways, etc., the Tankspion-IoT GPS also offers a GPS location service.

The included weatherproof 4G LTE / GPS combination antenna has to be installed to enable the GPS function. Outdoor installation is advantageous for reception.

The location data can be accessed via the OilView portal and the oil-SmartView app. A link to Google Maps or Apple Maps for iOS devices is possible for direct navigation to the plant.





Technical Data

Power supply:	3,6V Lithium battery 14Ah Item no.: 13901	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, included in delivery.		
Data reporting target:	OilView server (IoT Cloud)		

Standard Measuring Probe

Type:	TDS-61-250-P6	Protection class of probe:
Voltage:	U_b from measurement input: ~15V DC	IP68 according to IEC 529
Materials:	V4A; POM; FPM; PUR	Cable length 5-6 m, orderable with 5 m extra length each
Installation position:	Lying horizontally, or hanging vertically with contact to the ground	
Temperature range:	Fluid 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:

Is performed automatically. You do not need to do anything. The device independently searches for updates and carries those out automatically.

The Tankspion-IoT is connected to the secure Tecson web server. If your device ever fails to measure or report correctly, please contact the Tecson support team.

Battery Change:

Unscrew the 4 screws of the device lid with a screwdriver and remove the lid.

Replace the lithium power battery, D cell ER34615M (TECSON spare part).

CAUTION when handling the battery because it is a high power cell.

Lastly, screw the cover of the device back on.

No liability is accepted for damage to the device caused by or when replacing the battery.

Dispose of all used batteries and rechargeable batteries from the devices in an environmentally friendly manner!

Disposal in acc. with the Electrical and Electronic Equipment Act:

Electrical and electronic equipment must not be disposed with household waste. Instead, waste electrical and electronic equipment must be collected separately from unsorted municipal waste.

Private households can also hand in their waste electrical equipment free of charge at municipal collection points. You can find an online directory of collection and return points near you here:

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

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



APP Set Up (oil-SmartView)

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

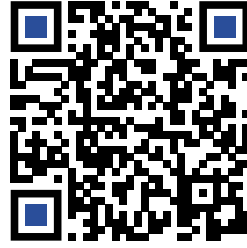
Alternatively:

Open the store for apps. Under „search“ enter: oil-SmartView

Click „oil-SmartView“ in the list and then click „install“.



Google Playstore



Apple Store

Oil-SmartView

Tecson GmbH & Co KG

1000+

Downloads



USK ab 0 Jahren

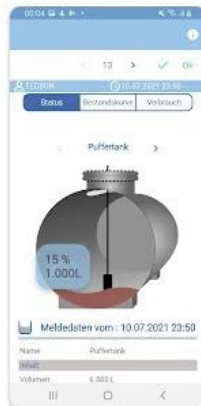
Installieren



Auf die Wunschliste



Diese App ist für alle deine Geräte verfügbar

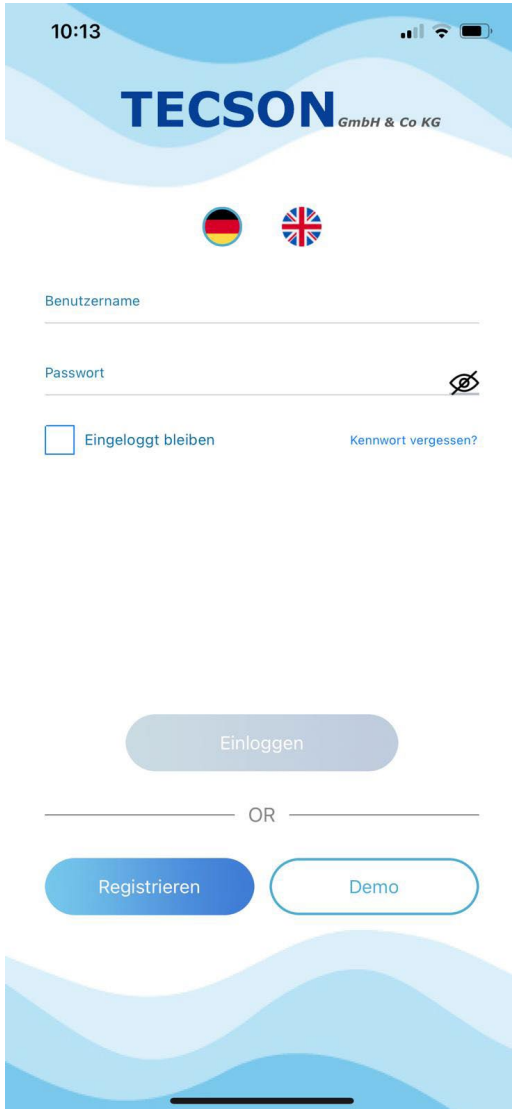


Registration

Please log in with your email address and password if you already have a customer account. Otherwise, please register as a new customer.



All input fields marked with an asterisk are mandatory fields in order to create a user account.

If you want to retrieve the level data from the Tankspion-IoT via the OilView inventory management system, simply download the form and print it on your printer. You can also fill out the form directly on the screen. **Return by e-mail to eingang@tecson.de.**




10:13

TECSON GmbH & Co KG

Benutzername

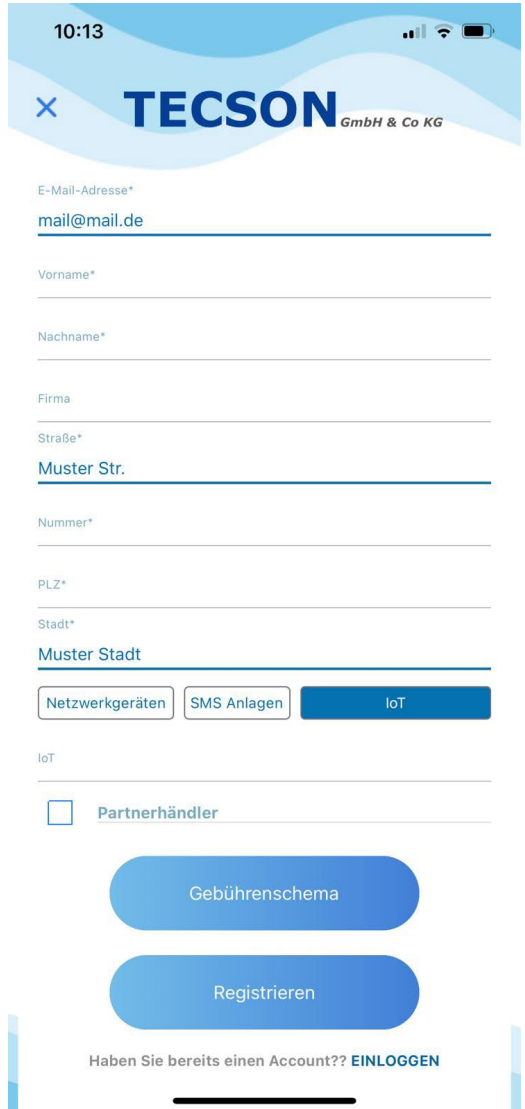
Passwort 

Eingelogggt bleiben [Kennwort vergessen?](#)

Einloggen

OR

Registrieren Demo



10:13

TECSON GmbH & Co KG

E-Mail-Adresse*
mail@mail.de

Vorname*

Nachname*

Firma

Straße*
Muster Str.

Nummer*

PLZ*

Stadt*
Muster Stadt

Netzwerkgeräten SMS Anlagen IoT

IoT

Partnerhändler

Gebührenschemata

Registrieren

Haben Sie bereits einen Account?? **EINLOGGEN**



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

Ihre E-Mail-Adresse

Geben Sie bitte Ihre registrierte E-Mail-Adresse ein und drücken Sie "Senden". Wir senden Ihnen einen Link zum Zurücksetzen des Passworts

Senden

Input Tank Data in the App:

Set the tank parameters under 'Tank settings':

- Tank name:** Own tank description, e.g. cellar tank or yard tank.
- Tank content:** Selection of the tank content, e.g. heating oil, diesel or water.
- Filling limit:** Indication of upper filling limit (limit switch-off). Heating oil tank value usually is 95%.
- Capacity:** The total volume in liters.
- Threshold:** Reserve threshold, e.g. 15% of the tank volume.

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

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

The Tankspion IoT device has a protected connection with the TECSON web portal www.OilView.de.

No data is lost if you change your smartphone.

The screenshot shows the 'Tank 1' settings screen in the app. It features a list of input fields and buttons for configuration:

- Tankbezeichnung:** A text input field.
- Inhalt:** A dropdown menu with 'Diesel' selected.
- Tankbauform:** A dropdown menu with 'Linear' selected.
- Unit:** Radio buttons for 'Liter' (selected) and 'Kilogramm'.
- Füllgrenze (%):** A numeric input field with the value '95'.
- Tankhöhe (cm):** A numeric input field with the value '195'.
- Dichte (kg/cbm):** A numeric input field with the value '888'.
- Volumen:** A numeric input field with the value '6500'.

A 'Speichern' (Save) button is located at the bottom of the screen.

QR-Code Display on Tank

The tanker driver can quickly determine the free capacity of the tank via the QR code sticker before starting to refuel.

The QR code supplied can be stuck on the lid of the device.

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

Scanning the QR code can usually be carried out using the camera app of your smartphone. The scope of delivery includes two identical stickers with the QR code.

The smartphone opens a page in the web browser with the current inventory in liters and percent, the fillable free space in liters, and an indication of the total volume of the tank.

Stand: 02.11.2022, 16:30 Uhr 1

Tank 1: Erdtank (Diesel)

Aktueller Bestand

2255 L / 45 % 2

Freiraum bis Füllgrenze

2495 L 3

Volumen

5000 L 4

Standort: Köln, Badstr. 2 5

QR Status Page:

Status: Time and date of the last measurement. 1

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

Filling Space*: The fillable space (clearance). 3

It must be possible to determine the filling space when refueling!

Volume: Total volume. 4

Volume: Tank volume. 5

The location of the plant is displayed in the bottom line.

*

In addition to the normal display of the current level, the fillable space before refueling is also displayed, in accordance with the regulations of TRwS 791.

TECSON

Kompetenz in Tankmesstechnik



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WEEE No.: DE 1863 9642
UST-ID/VAT ID: DE 298 763 956

www.tecson.de

The manufacturer TECSON hereby declares compliance with the respective safety and test guidelines.

The current declaration of conformity can be found as a PDF file (printable) on our web site www.tecson.de under the heading 'Documentation'.

