Remarks

Important data about your tank has already been provided to us through your online order. This enables us to pre-configure your sensors for the respective purpose. The supplied Ecofrog is already programmed according to your specifications and is therefore able to carry out accurate measurements of the levels in your tank. Please note that the preset Ecofrog only provides correct measurement results for the type of tanks whose basic geometric parameters match your specifications. These parameters are:

**Basic geometric parameters for the pre-configuration of the Ecofrog:**
- Medium in the tank
- geometric tank shape (tank types A, B or C)
- width / length / depth of the tank
- Maximum volume (litres)
- Height of the removal point / suction point
- Sensor height above the maximum level (empty area)

Tanktyp A — Rechteckig / zylinderförmig (vertikal)

Tanktyp B — (H ≥ W) Oval / zylinderförmig (horizontal)

Tanktyp C — (W > H) Niedrigprofil

Before installing the sensor on the tank

The following instructions must be observed before installing the Ecofrog on the tank: (More info on our website www.e-sensorix.com

- To allow the Ecofrog to connect to the Internet, the tank must be within range of a local WIFI network.
- Tank nozzles over 2cm high (5cm for nozzles with 2" diameter) should be avoided when installing the Ecofrog.
- Please observe a safety distance of at least 20 cm between sensor and tank wall (e.g. a basketball must be able to fall undisturbed and must not be distracted by installations, etc.). Contact us for other conditions.
- The maximum measuring range of the sensor is 3m from the sensor to the ground (0% mark).

Do not install on pipes or nozzles >5cm

Obstacles disturb the ultrasonic signal

The sensor must be installed vertically

min. 20cm
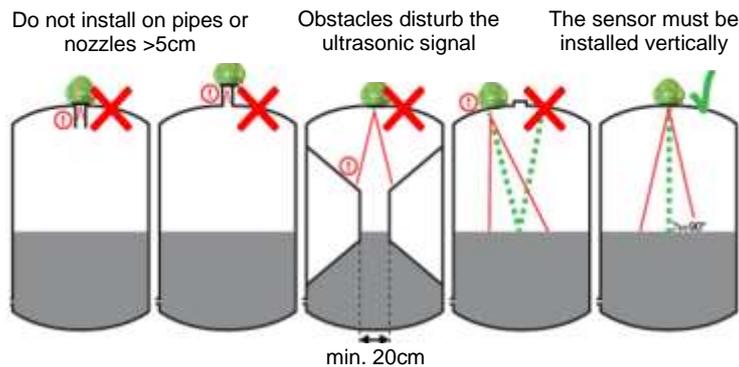
Areas of application of Ecofrog

- Free tanks indoors and outdoors - Tank contents: Heating oil, waste oil, diesel, kerosene, water, etc.
- Main functions of the Ecofrog: level indication and monitoring, avoid supply failures, optimize deliveries or collections, permanent access to fill level information from anywhere

INSTALLATION & SETUP

Step 1: Connect Ecofrog to the local WIFI network

The Ecofrog must first be connected to the local WIFI network to transfer the measured data to the database server. Several sensors can be operated with the same WIFI network without mutual interference. Each Ecofrog has a unique digital number which is used to assign the incoming measurement data in the database server to the respective sensor or tank.

Note: It is important that all sensors are within range of the local WIFI network at your location. The signal strength should be good enough to avoid reconnection attempts, otherwise the battery life could be reduced.

Integration of Ecofrog in the local WIFI network:

1. Press the black button on the top of the Ecofrog for about 6 seconds until the LED next to it jumps to red.
2. Using your smartphone or computer, look for an entry named TEKELEK - XXXXX (=Ecofrog) in the WIFI connections and connect to it.
3. Enter the fixed IP address of Ecofrog (**192.168.4.1**) in the address bar of your smartphone or computer web browser and load the display page of the sensor:
4. On the display page, select your local WIFI connection (SSID) from the list under **"Select WIFI Network",** enter the network password under "**Enter Network Password**" (which is usually on the router housing) and connect to "**Connect to WIFI**".

Unit Serial 0000000001

Select WIFI Network TE-MainBoardroom (secure)

Enter Network Password 1234567890

Connect to WIFI

Step 2: Mounting the sensor on the tank

The Ecofrog is now connected to the WIFI network and prepared for installation on the tank. Since the sensor measures the distance in the tank using an ultrasonic method, it can be mounted at any level. The tank does not need to be emptied to mount the sensor.

Mounting the Ecofrog on the tank:

1. Look for the intended thread opening at the top of the tank (typically a 2" or 5 cm nut thread). Remove the cover and keep it.
2. make sure that the opening is at least 20 cm from the sides of the tank and free of internal obstacles that could affect the quality of the measurements.
3. Place the foam seal supplied with the Ecofrog over the thread opening.
4. Screw the Ecofrog clockwise into the threaded hole.

DO NOT OVERTIGHTEN THE SENSOR!

Ecofrog

Schaumstoffabdichtung

Gewindeöffnung
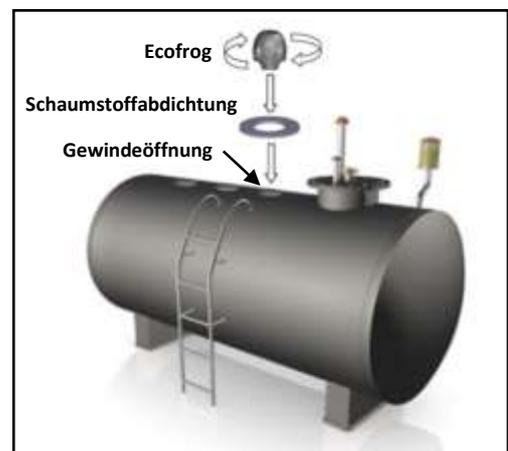
Step 3: Ecofrog Manual connection test

Congratulations! Your Ecofrog is now ready for use. If there are problems connecting to the Wifi and you need to identify them, you can test the Ecofrog network connection manually:

1. Press the black button on top of the Ecofrog only for 2 seconds until the LED turns green. The Ecofrog then sends a test data package to the server on the Internet.
2. Wait about 20 seconds and see if the LED starts flashing green or red.
3. Green flashing indicates that the test was successful and the data was transmitted to the data server as intended. Red flashing indicates that the connection was not successful. The number of red flashing signals gives you an indication of the cause of the error so that you can correct it:

Code list of the red flashing signals to limit a transmission error:
1 blink signal - WIFI network not found (or WIFI setup incomplete).
2 blink signals - connection to the WIFI network failed (e.g. bad signal or MAC filtering activated on router)
3 blink signals - WIFI password incorrect (case sensitive!)
4 blink signals - The server endpoint is not reachable (no web service detected)
5 blink signals - No response from server (data was sent but server response was not received)
6 blink signals - Invalid server response (e.g. a 404 http response was returned)
7 blink signals - Firmware download failed (time out, not found or wrong type)
8 blink signals - Low battery status (a dead battery may prevent WIFI connections
9 blink signals - WIFI module does not respond (critical error)

Features of the Ecofrog tank measurement system

- The Ecofrog is a battery-operated ultrasonic gauge for liquid level measurements that measures the tank level at pre-programmed time intervals. It automatically connects to a WIFI network within range and transmits the measured data via the Internet to a database server.
- The measured levels are stored in the database server for 30 days as standard and can be accessed any time via the Web App with a Smartphone or computer
- The Ecofrog Web App is a flexible user interface for displaying the current level and the level history for each sensor.
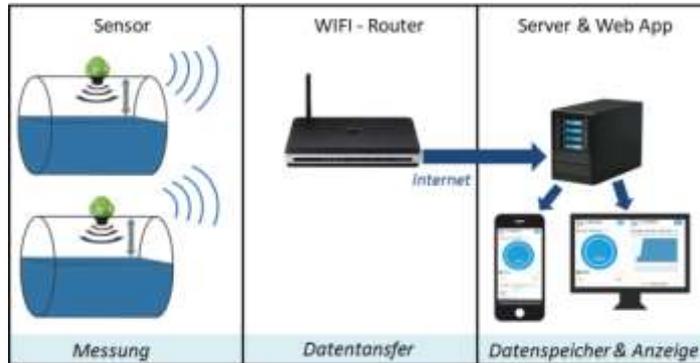
DATA ACCESS IN THE WEB APP

You can find the web app for access to the measurement data of your Ecofrog at : https://e-sensorix.azurewebsites.net

Display of information in the Web App

The Web App offers the following functions:
- Login with a user account (name/password) (Login page)
- Selection of the respective sensor for access to the level data of a specific tank (Sensor selection page)
- Graphic level display of a specific tank and sensor status (Status page)
- Graphical display of the level history for a specific tank (History page)
- Link to the documentation for the Ecofrog

1.Login page:

- Please enter your assigned user name and password to log in.
- It is possible to read out several sensors with one user name.
- It is possible to read out one or more sensors with several user names.
- Click on the "Documentation" button to open the link to the documents on the Ecofrog
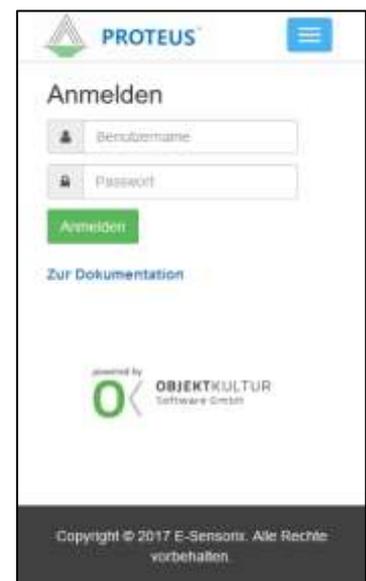
2. Sensor selection page:

- Under "My devices" you will find all Ecofrog sensors stored in the database server under the user name. To facilitate selection, each sensor has a unique identification number.
- Click on a specific sensor on the list to see the data display for that sensor.
- there is obviously only one entry in the device selection If only one sensor is stored under the user name.

3. Status page:

- The status page is the main page of the Ecofrog Web App. The following information is displayed:

  - Name of the sensor
  - Level (in percent)
  - Sensor battery power
  - WIFI signal strength
  - Time of last update (last data transfer)
  - Actual volume of the tank in litres
  - Maximum volume of the tank in litres
  - Filling medium of the tank

- Click on the "Other" button to return to the sensor selection and select other sensors.
- Click on the "History" button to access the history page, on which the levels of the last 30 days (by default) are displayed graphically.

IMPORTANT:
The status page allows you to check the correct function of your Ecofrog gauge.
Functionality restrictions in your sensor such as a dead battery or a low WIFI strength are displayed here.
The level gauge allows you to refill the tank at the right time to avoid emptying it.

4. History page:

- All previous level data of the sensor are displayed graphically on the history page so that the level progression for the respective tank can be traced.
- By default, the level data of the last 30 days is displayed in the history page. If you would like to have the level data displayed for a longer period of time, please contact the E-Sensorix team.

IMPORTANT: With the OData service it is possible to read out the measured values of your sensors individually or completely via Excel and to save them permanently on your computer.

   Find out more about the OData service below
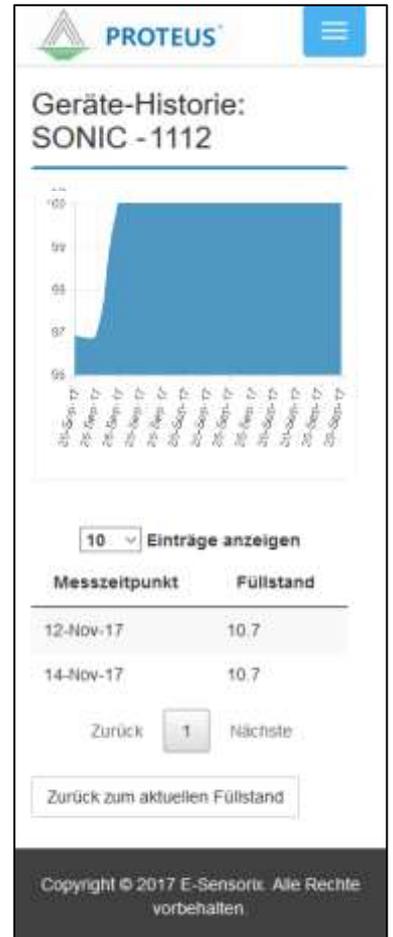
DATA ACCESS VIA THE ODATA SERVICE

The OData service is an interface between the database server and a Microsoft Excel program for reading the data. To integrate the OData service in your Excel program, proceed as follows:

- Start Microsoft Excel
- Click on the tab "Data" and below on "Retrieve data".
- Under "From other sources", select the "OData data feed
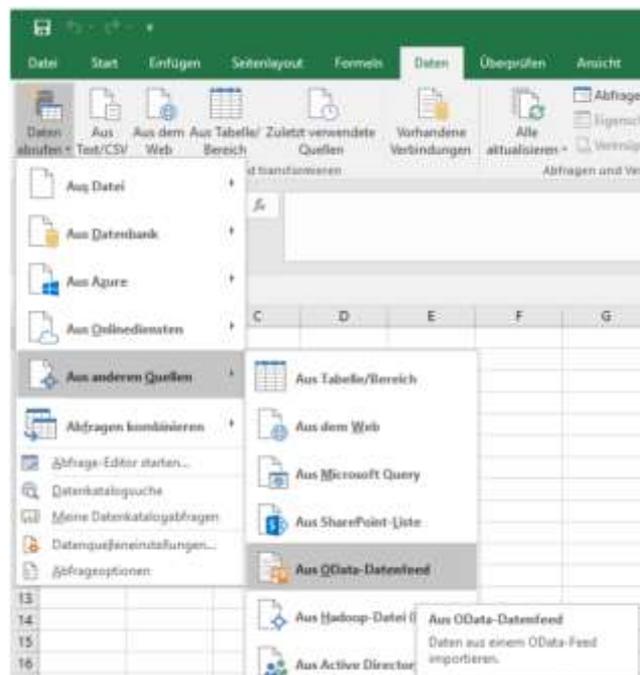
The OData interface will request for a URL . You can enter for example the following:

OData-Feed

● Standard   ○ Erweitert

URL
https://e-sensorix.azurewebsites.net/oDataDeviceDataHistory/DeviceDataHistory

OK   Abbrechen

You can reach the following OData interfaces via your URL:

URL	Zweck
https://e-sensorix.azurewebsites.net/oDataDeviceToCustomer/DeviceToCustomer	Liefert alle Sensoren für einen Kunden.
https://e-sensorix.azurewebsites.net/oDataCurrentDeviceData/CurrentDeviceData	Liefert die aktuellen Messdaten zu einem Kunden über alle seine Geräte hinweg (jedes Gerät gleich ein Eintrag).
https://e-sensorix.azurewebsites.net/oDataCurrentDeviceData/CurrentDeviceData(2)	Liefert die aktuellen Messdaten zu genau einem Gerät. Die 2 steht hier representativ für die ID des jeweiligen Geräts. Hier muss immer genau ein Eintrag zurückgeliefert werden.
https://e-sensorix.azurewebsites.net/oDataDeviceDataHistory/DeviceDataHistory	Liefert alle Messdaten (Standard 30 Tage, indiviudell einstellbar) zu einem Kunden über alle seine Geräte hinweg.
https://e-sensorix.azurewebsites.net/oDataDeviceDataHistory/DeviceDataHistory(2)	Liefert alle Messdaten (Standard 30 Tage, individuell einstellbar) zu einem Kunden zu einem speziellen Gerät (hier die 2 – diese steht representative für die ID des Geräts).

As a last step, you have to identify with your user name in order to gain access to the information of your sensors:

OData-Feed

Anonym

Windows

Standard

Web-API

Marketplace-Schlüssel

Organisationskonto

⬛ https://e-sensorix.azurewebsites.net/oDataDeviceD...

Benutzername

Kennwort

Wählen Sie die Ebene aus, auf die diese Einstellungen anzuwenden sind:

https://e-sensorix.azurewebsites.net/

Zurück   Verbinden   Abbrechen

Technical Specifications

Categorie	Vaue
Size	109mm(W) x 109mm(L) x 108mm(H) ±1mm 4.3"(W) x 4.3"(L) x 4.25"(H) ±0.1"
Weight	227g (8oz)including battery
Hausing material	UV-stabilized polypropylene (compatible with oil)
Operating Temperature	-17°C to +50°C (0°F to +122°F) (Note 1)
Recommended storage temperature	+20°C to +25°C (+68°F to +77°F) clean, cool, dry and ventilated. (Note 1)
Humidity	15% -95%
Altitude	< 2km (< 6,000') above sea level
Protection class for environmental influences	IP67 - outdoor use
Wi-Fi Standard	Supports 802.11 b/g/n Wi-Fi
Frequency	2.412GHz bis 2.462GHz
Transmission power	15dBm ±3dBm (measured at the internal antenna on the PCB; gain of the internal antenna = -3dB)
Measuring type	Ultrasound
Ultrasonic range	> 12cm bis < 300cm (> 5" bis < 115") (Note 2)
Ultrasonic signal scattering	30° (Note 3)
Ultrasonic resolution	±1cm (±0.5")
Accuracy	Normally ±2cm (±1")
Material Compatibility	(Note 4)
Battery type	3.6V Li-SOCl2, size R14 (C) (or also SaftLSH14)
Battery life	7.5 years after initial activation (note 5)
Housing color	Olive green -Pantone 376C (adapter -black)

Accessory	
Mounting Options	Fits directly into nut threads of sizes 1 ¼", 1 ½" or 2"; 2" is recommended
Seal (included)	Material EPDM 89mm(Ø) x 4mm(H) ±1mm (3.5" Ø x 0.16"(H) ±0.1"; distance between hole centres: 50mm ±1mm (2" ±0.1")

Conformity	
Conforms to the current guidelines for electromagnetic compatibility and low voltage as well as the guidelines for product safety and the current R&TTE directive for radios. Compliance with the following specifications, listed in the Official Journal of the European Communities:	
EN 61000-4-2/3	Electromagnetic compatibility
EN 301 489-1	ERM and EMC standards for radio accessories and services Part 1
EN 301 489-7	Electromagnetic compatibility and radio spectrum matters (ERM); Electromagnetic compatibility (EMC), standard for radio accessories and services; Part 7: Special conditions for mobile and transportable radio and auxiliary equipment of digital cellular radio telecommunication systems (GSM and DCS)
ETSI EN 301 489-17	Electromagnetic compatibility and radio spectrum matters (ERM); Electromagnetic compatibility (EMC)
FCC Compliance	FCC ID: S6T750
RoHs consistency	Ja

- Note 1: Storage and operation above 25°C may reduce battery life. Storage should not exceed 12 months.
- Note 2: Based on measurements on a flat liquid of 30cm².
- Note 3: The maximum spatial dispersion of the ultrasonic signal will be <30° from the central axis of the sensor.
- Note 4: Suitable for use in tanks for storage of water, diesel, petrol, kerosene, gas, oil of categories A2, C1, C2 and D, defined according to BS2869.
- Note 5: Based on activation within one year of the manufacturing date of the product, one device setting for 4 ultrasonic measurements per day, 1 Wi-Fi connection per day from a location where the Wi-Fi coverage does not require reconnection attempts and a normal distribution of operating temperatures around a center of -25°C (77°F).
- Note 6: When used outdoors, the installer must use self-amalgamating tape on the connection between the external antenna and SMA connector to ensure weather resistance. The gain characteristics of the antenna should be <6dBi to ensure FCC compliance.

Contact us

For further questions about configuration, installation or general application, please visit our help page at https://www.e-sensorix.com/en/, where you can get videos but also answers to frequently asked questions (FAQs), or contact our customer service at: support@proteus-meter.com or support@e-sensorix.com.

FAQ

How complex is the installation of the Ecofrog?
As a modern IOT solution, the Ecofrog gauge offers the best automation. Mounting the sensor to the tank and connecting it to a local Wi-Fi network takes just a few minutes with the step-by-step instructions. You can call your first data via the mobile app as soon as they have been sent to the database server (once per day) latest on the 2nd day after the installation of the sensor.

How do I access my level data?
You can call up your fill level data at any time and from any location via the Ecofrog web app. Enter the appropriate web address in your web browser (https://e-sensorix.azurewebsites.net) and log in with the user name and password that you must enter the first time you visit the web app. A selection of sensors takes you directly to a graphical level indicator with the measured values of your Ecofrog.

For which tank types is the Ecofrog suitable?
You can basically equip all rectangular-cylindrical, oval-cylindrical or low-profile tanks shown in Figure 2 with the Ecofrog. To obtain correct measurements of the tank levels, please observe the instructions for correct orientation of the sensor on the tank (Figure 1) and make sure that there are no installations or structures between the sensor and the filling medium that could interfere with the measuring signal of the sensor. Tank nozzles over 2 cm high should be avoided.

How reliable is the Ecofrog?
The Ecofrog has a measurement accuracy of normally ±2cm (±1"). If there are problems with the Wi-Fi connection or if it is interrupted, the Ecofrog automatically tries to reconnect to the network. In the Web App, all measurement data have a time index, so that a possible failure of the sensor or the network can be detected quickly. The robust housing of the Ecofrog allows its unrestricted use outdoors in a temperature range of -17°C - +50°C.

Do I lose the configuration and connection data if the Ecofrog is disconnected from the WIFI network?
The configuration data and the connection data are stored in the Ecofrog and can therefore not be lost even if the Ecofrog is temporarily separated from the WIFI network. When a measurement is completed after a pre-programmed time period, the Ecofrog automatically connects to the local WIFI network and transfers the data to a database server.

PLEASE NOTE: The life of the sensor battery can be reduced if the WIFI reception at the sensor location requires re-connection attempts.