CLEVERTANK
INTERNET OF TANKS
Sustainability
Wouldn’t it be great if you would have a clear insight in the status of your tank. Imagine a system that allows you to log emission of hazardous substances and detect malfunctioning equipment or operational issues as they happen?

Our Clevertank system does just that. It quantitively measures VOC emissions and can additionally be equipped with sensors measuring for instance tilt, temperature and humidity. All data is sent to the cloud for further processing. This opens up the possibilities to monitor emissions, track the status of the tank and even get an alarm on your phone in case of anomalies.

**Purpose**
Legislators increasingly demand detailed reports about emissions from storage tanks. This may no longer be based on calculations alone. This system offers the possibility to measure and log emissions with a calibrated sensor, so the actual quantity of emission can be proven. There is also the possibility to use the system for failure detection of the emission control measures. It often takes a long time before failure is detected, with this system this can be reduced. Ultimately, we can offer a service that allows monitoring the performance of seals, domes and internal floating roofs.

**What is it**
Clevertank is an IIoT (Industrial Internet of Things) solution for measuring VOC emissions. We offer a web suite for presenting the data. The hardware consists of an Ex certified control module with a number of sensors attached to it. It is connected to a data collection module, that can be placed inside the tank. The system uploads the data wirelessly to a data centre. It supports GPRS(2g) Lora, ZigBee and Wi-Fi. The module can be equipped with a solar panel that eliminates the need for external power supply.
Clevertank suite is the software component of the solution. The software is web-based, with a modern client-server architecture, suitable for multiple users and multiple platforms including tablets. This software suite for tank monitoring is specifically designed for tank status and emission logging with a visual interface for all data captured by the system. The suite also offers tools for remote management of the Clevertank modules.

**Tankfarm overview**
This screen shows all tanks with an indication of the status of a tank, visually appealing. The overview can be sorted in various ways and filtering can also be done on tank location. Clicking on a tank shows the tank status window.

- Overview of site with tanks with visual indication of status
- Weather data
- Main alarms and measurements
- Latest 10 alerts and alarm logs

**Tank status**
This view shows an overview of the tank under consideration, the sensor data of that tank and the current status of the tank. Also graphs should be shown. General documents about the tank can also be stored here, such as construction diagrams, inspection reports other relevant data. Also status data of the hardware should be shown.

- Current status of all sensors with graph (custom. day-week-month-year-5y)
- Latest alarms on the specific tank
- Notes manager for specific tank
- Weather data

**Logs screen**
This is the data sheet per tank, for the management of all information of the tank all gathered data should be available on this screen.

- Data as read
- Graphs (custom. day-week-month-year-5y)
- Notes manager
These sensors have gained a worldwide reputation for excellent performance and reliability and each infrared sensor undergoes exhaustive environmental testing and characterization prior to delivery to the customer. The sensor designs are based on PROVEN TECHNOLOGY and, as such, we are able to offer a 5 year sensor warranty on the sensor types used in our system.

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High resolution

The High Resolution Sensor provides measurement over the full range of 0 to 100% volume with a resolution of 0.01 % for 0-10% and 0.1% for 10-100% volume when using Methane as reference gas.

Specifications

Control unit
- Communication: GPRS or XB
- Automates SMS/email alert triggers
- Ex zone 1
- Power supply 12-35V (battery or external power)
- Operating temperature -20 to +50 °C

Sensors
- Max 10X IR based VOC sensor
- 1 external VIC sensor
- Temperature sensor
- Tilt sensor
- Ex zone 0
- Connected to the control box by means of a cable
- Cable to control unit max 45 m

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CLEAR INSIGHT IN THE STATUS OF YOUR TANK
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