

OUR COMPANY

FuelSave Technologies is a company in Africa providing total **Fuel Management Solutions** through application of modern technology. We bring global solutions to local challenges and provide customized approaches to specific client needs.

We have partnered with world leaders in the Research and Development to ensure constant improvement and close support for our solutions. Our total solutions cover

- Fuel road tanker cargo and main tank tracking systems
- Automatic tank gauging systems for petrol stations
- Forecourt automation systems for petrol stations
- Vehicle identification systems for fleet owners and transporters
- Bulk storage tank monitoring and control systems for large tanks (applicable for any product, including chemicals)
- Automatic dewatering systems for crude oil tanks
- Anti-Siphoning unit for tankers, buses and trucks
- Base Transceiver Station fuel management

Our network aims at covering the entire African Continent, with specific centers of operation in Nigeria, Kenya, Uganda, Tanzania, Democratic Republic of Congo, Angola, and South Africa. We continuously seek to reach more clients through agents in most parts of Africa.

We take pride in our technical competence to deliver the solution anywhere in Africa within reasonable time schedules, and continue to give customer care through our call center at the Nairobi Head Office, as well as through maintenance teams that ensure fast turnaround times for our clients.

VISION

To be Africa's most innovative and leading provider of cost effective Fuel and Asset Tracking Solutions that optimize logistics management for businesses and individuals.

CORE VALUES

- Integrity
- Innovation
- Reliability
- Commitment
- Safety
- Team Spirit
- Customer Care

AFTER SALES SUPPORT

At FuelSave, after sales support is part of the package. We provide maintenance and support services to our products, which come with a warranty.

Our engineers seek to provide excellent installation, support and maintenance of all equipment to ensure efficiency of their use.



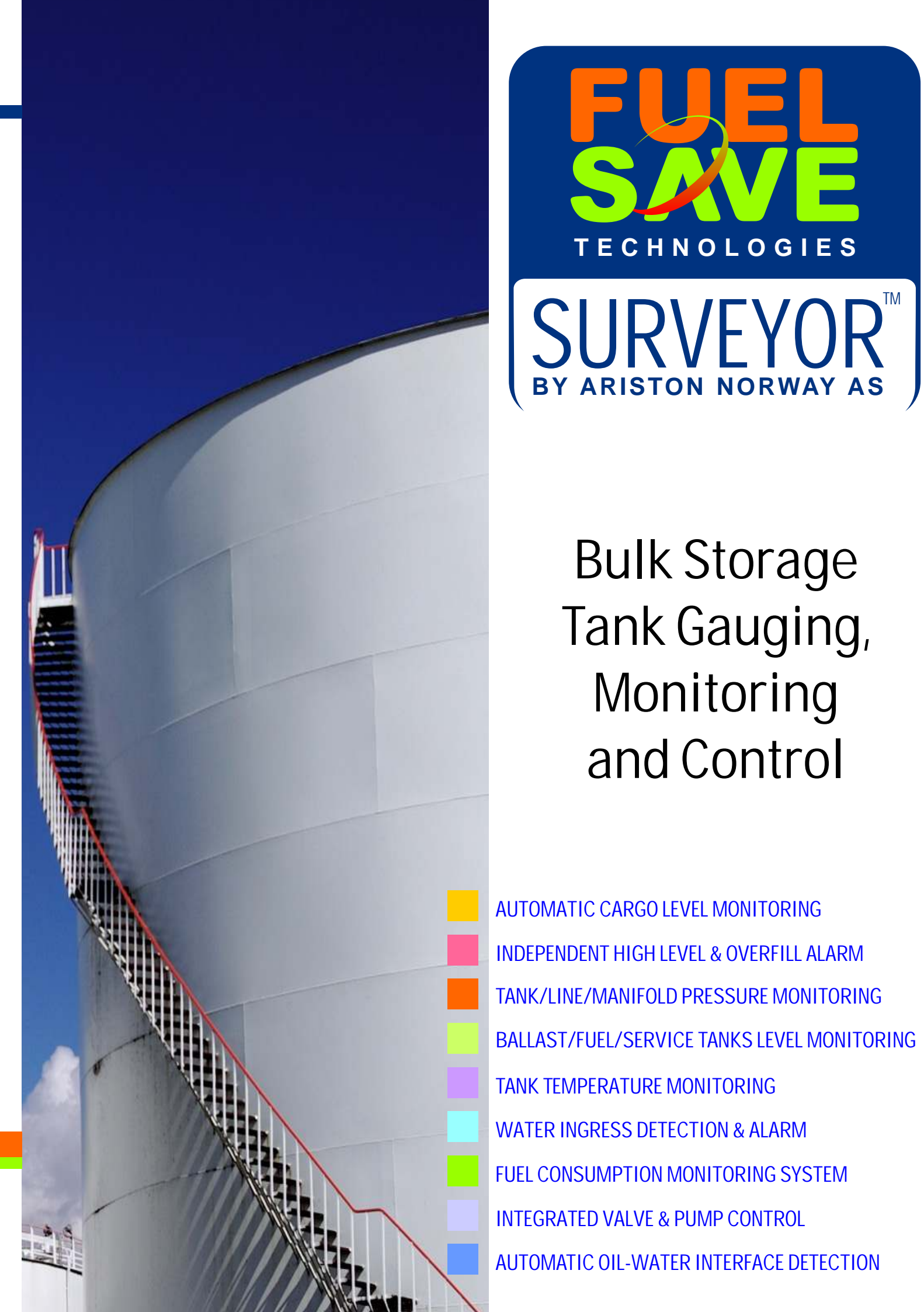
FuelSave Technologies Ltd.
Rosami Court, No. 4
Muringa Road.
P. O. Box 52937 - 00200.
Nairobi, KENYA.

tel : (+254) 20 386 2656/67
fax : (+254) 20 386 2681
cell : (+254) 722 511 072
(+254) 722 260 027
email : info@fuelsave.co.ke
website : www.fuelsave.co.ke



Bulk Storage Tank Gauging, Monitoring and Control

- AUTOMATIC CARGO LEVEL MONITORING
- INDEPENDENT HIGH LEVEL & OVERFILL ALARM
- TANK/LINE/MANIFOLD PRESSURE MONITORING
- BALLAST/FUEL/SERVICE TANKS LEVEL MONITORING
- TANK TEMPERATURE MONITORING
- WATER INGRESS DETECTION & ALARM
- FUEL CONSUMPTION MONITORING SYSTEM
- INTEGRATED VALVE & PUMP CONTROL
- AUTOMATIC OIL-WATER INTERFACE DETECTION



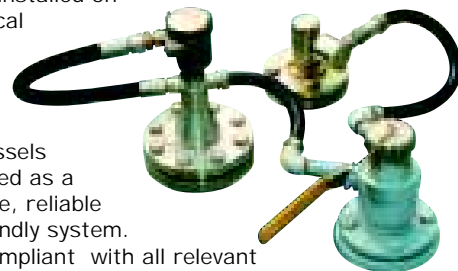
AUTOMATIC CARGO LEVEL MONITORING

SURVEYOR™ Cargo Level is a complete automatic level gauging and cargo monitoring system for tankers. The system is one of the most comprehensive and accurate systems available for this specific application. Together with advanced signal handling and computer technology, the functions included are as follows:

- Level gauging in cargo, slop, ballast, and fuel oil tanks (custody transfer approved for industrial)
- Density measurement in cargo, slop, and fuel oil tanks
- Vapour (inert gas) pressure in cargo and slop tanks
- Draft measurement
- Loading computer for on/offline stability, damage stability and stress calculations, with load planning
- Logging & print-out of cargo and transfer reports
- Interface for communications with other systems available
- High level and overflow alarm

As all parts and functions are based on time proven sensor technology, the system is very cost effective and operationally efficient for the users. The modular and compact design makes the SURVEYOR™ Cargo Level Monitoring System an attractive alternative for new-building or retrofit installations.

SURVEYOR™ Cargo Level Monitoring has been successfully installed on board chemical and oil tankers as well as product and container vessels and recognized as a cost-effective, reliable and user-friendly system. System is compliant with all relevant regulations and conventions currently in force.



INDEPENDENT HIGH LEVEL & OVERFILL ALARM

SURVEYOR™ Independent High Level & Overflow Alarm System is a high quality product based on proven acoustic wave technology for marine applications. The complete system can be delivered either as a single or as a dual point system for high level and overflow (high-high) level alarm detection for any kind liquid including any hydrocarbons and chemicals.

The system is fully compliant with the requirement from IMO resolutions for high level alarms and overflow control and rules from all classification societies. Visual and audible alarms will display on the alarm panel as well as on deck with external Eex alarm lights and siren. The high level (95% and overflow 98%) alarms are totally electrically independent. System sensor test for verification of alarm function is performed on deck (magnetic key). The system features a built-in function for preventing false alarms.

Advantages:

- No moving parts
- No scheduled maintenance required
- No calibration after installation
- No adverse effects from tank cleaning machines
- No adverse effects from cargo residue



Applications:

- Chemical Tankers
- Product Tankers
- Oil Tankers
- Floating Storage Facilities
- Shore Crude Oil Tanks
- Shore Chemical Tanks

TANK / LINE / MANIFOLD PRESSURE MONITORING

Functions:

- Vapour Pressure/Vacuum Monitoring
- Individual High and Low Alarms
- System Malfunction Alarm
- Alarm Outputs for external alarms

Advantages:

- Compact units
- Easy to install
- Low power consumption
- Absolute pressure sensors, no venting, no leaks
- No scheduled maintenance required
- Cost effective installation
- Long time stability and accuracy
- Alarms from system can be exported to third party automation

Application for:

- Chemical Tankers
- Oil & Product Tankers
- Storage Facilities (FSO, FPSO, Tank farms)



BALLAST/FUEL/SERVICE TANKS LEVEL MONITORING

SURVEYOR™ monitors level in ballast and service tanks plus draft, with accurate compensation for trim & list. Measurements are based on hydro-static pressure sensor technology.

The sensor is hermetically sealed with a watertight connection between body and the signal cable. This special type of absolute pressure sensor has been designed for long time stability without any need for calibration. Sensor can be installed from the top or from the side of the tank.

LEVEL: When using submerged pressure sensors installed at the bottom of the various tanks, the hydrostatic pressure of the ballast water or oil is the basis for the level presentation. The liquid density has to be keyed in by the operator. The system presents level in each tank with adjustable high and low level alarms. Trim and list measured by either Inclometers or draft sensors will compensate the tank level readings for actual trim and list. Due to the automatic trim and list

compensation, the sensor can be installed in the best suitable location without considering the tank's flotation centre.

AUTOMATIC STOP OF BALLAST PUMPS: A default set-point signal from the level function of the gauging system can be used for automatic stop of the ballast pumps.

VOLUME: The sounding tables for each tank are a part of the system program. This allows presentation of the volume content in each tank. Adjustable high and low volume alarms are included as well as estimation of tank filling rate and finish time.

WEIGHT: Presentation of weight in each tank is achieved by using the parameters for level and volume.



TANK TEMPERATURE MONITORING

The SURVEYOR™ temperature monitoring system can be used as a stand-alone system, or in combination with the other subsystems to the Multipurpose Monitoring & Control.

Typically used, in a stand alone configuration it offers excellent data presentation and easy user interface.

Advantages:

- Compact Units
- Easy to install
- Low Power Consumption
- No Maintenance
- Cost Effective Installation
- Long time Stability
- Easy to integrate with other systems
- Type Approved by all major classification societies

Application for: Chemical tankers; Oil & Product tankers; Floating storage facilities.

Functions:

- Temperature Monitoring
- Individual Low / High Temperature Alarms
- System Malfunction Alarm
- Alarm Outputs for external alarms
- Programmable outputs



Temperature sensor in a pocket, for installation from side. Typically used in stand-alone temperature monitoring system configuration for fuel tanks. Sensor elements used are Pt1000 or Pt100. Another application of this sensor is for temperature monitoring and specific gravity temperature compensation in cargo tanks, when radar is used for ullage monitoring. Typical installation is from top.

WATER INGRESS DETECTION & ALARM

The SURVEYOR™ Water Ingress Detection & Alarm System (WIAS) is designed to detect the presence of water in the cargo holds and void spaces. The system is in full compliance with regulations, following the International Association of Classification Societies' adoption of a unified interpretation of the International Maritime Organization's (IMO) Performance Standards for Water Level detectors on Bulk and single hold General Cargo Carriers. Regulation require carriers to be fitted with water ingress detection equipment that will provide audible and visual alarms on the bridge in the event of water levels being detected in cargo holds and other spaces forward of the collision bulkhead. The WIAS sensor constantly checks the dielectric constant of the medium in front of the microwave antenna.

Presence of water will switch the sensor to an alarm state - in both empty and loaded cargo compartment, regardless of the type of cargo carried.

Two WIAS sensors are required in each cargo hold. One sensor is installed at a height of 0.5 m above inner bottom and another at a height of not less than 15% of the depth of the cargo hold but no more than 2 m above the bottom. In any ballast tank forward of the collision bulkhead, one sensor is installed at a height not exceeding 10% of the tank capacity. In any dry or void space other than chain locker, any part of which extends forward of the foremost cargo hold and the volume of which exceeds 0.1 % of the ships max displacement volume, one sensor is installed at a height of 0.1 m above the deck.



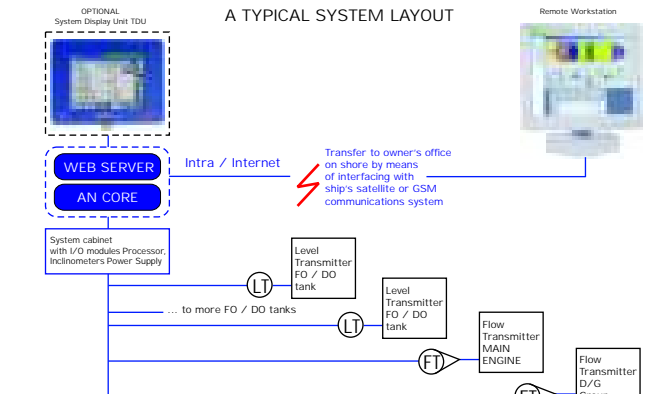
FUEL CONSUMPTION MONITORING SYSTEM

SURVEYOR™ for Continuous level/ weigh monitoring in Fuel /DO tanks with calculation of consumption according to user defined periods - per hour / shift/ day- with automatic generation of encrypted record for authorised use only.

Continuous fuel consumption - ME and DG - monitoring measured immediately before the high pressure pump. Automatic calculation of fuel usage for predefined periods - per hour/shift/day with automatic comparison with the data generated through the level monitoring system.

Automatic generation of log book for local print-out of data and/or interfacing with ship's communication system for remote review of fuel monitoring data in operator's office.

Continuous comparison between the consumption measured by tank sensors and the flowmeters Logging into TCU's memory for a period of time depending on frequency of log generating



Communication and log data export to an onboard PC for further transmission to owners's office Detailed logs as per customer specs.

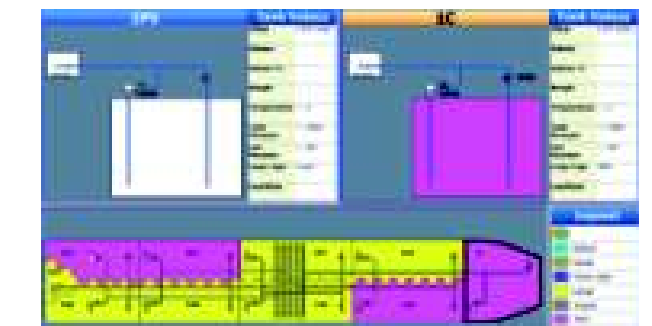
INTEGRATED VALVE & PUMP CONTROL

SURVEYOR™ RVCS is advanced and user-friendly software for integrated monitoring and control of pumps and valves. Our Pump & Valve Control software is set up on marine approved workstations with redundancy features, installed in cargo control room and/or bridge, connected to an uninterruptible power source. For additional redundancy the software can be installed on multiple computers.

The system can interface with a wide range of pumps and valve actuators using Wago I/O modules or PLS connections on a serial line.

Excellent graphics of vessel's tank plan are displayed as well as individual tanks with colour coding of liquids, indication and feedback alarms for pump and valve performance.

Continuous communication with SURVEYOR™ tank monitoring system enables the Pump & Valve Control system to also present crucial tank and line data like



Application: control of electric, hydraulic and pneumatic actuators for cargo, fuel, ballast, bilge and service tank systems on all type of vessels. The system can be used as part of SURVEYOR™ Multipurpose Monitoring & Control System, where tank data is automatically fed directly from the TCU or as a stand alone system acquiring tank data from alternative tank monitoring system.

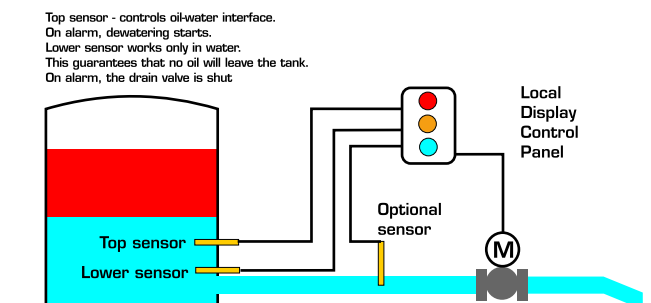
AUTOMATIC OIL-WATER INTERFACE DETECTION

Technology applied for SURVEYOR™ OWID is based on digital microwave sensors with temperature elements WIS, which operate continuously submerged in the liquid, in contact with the liquid.

Sensor technology is based on detection of water through the dielectric properties of the liquid, which allows unmistakable to detect and distinguish water from oil.

Sensors are designed to continuously operate without need for scheduled maintenance or recalibration, which results in significant savings of maintenance and service costs during the operation time of the system.

Water detection reliability and redundancy is based on utilising two or three sensors, the signal from all of which is processed, and in case of discrepancy (for example in case of cargo holding "water pockets") all sensor have to "agree" before a signal for initiation of dewatering is given by the processing unit.



Automatic detection of water and the dewatering process are done on a continuous autonomous basis, which reduces the time necessary to detect and drain the water in the tanks. This results in extending the life of tank coatings, protecting the tank itself and reducing the risk of uncontrolled spill of contaminated waters outside the tank.