GUIDANT

Sening® MultiTask®

One platform for all of your tank truck applications

MultiTask Tank Truck Management System

With the innovative MultiTask system, Sening offers the latest generation of tank truck management systems for improved safety, reliability, and intuitive operator guidance. MultiTask increases your tank truck's efficiency while supporting your cost control initiatives.

MultiTask's flexibility enables custom-made solutions for every customer. The broad and integrated application concept is a unique feature of Sening's tank truck solutions and provides one platform for all of your Sening tank truck applications, including:

- MultiSeal: Sealed parcel delivery
- NoMix: Cross-over avoidance and contamination prevention
- MultiLevel: Electronic dipstick
- MultiFlow: Tank truck register accuracy
- Enhanced Communication
- EventViewer: Dynamic display of logistics and event data

Sening has been the market leader in developing and manufacturing tank truck products for over 100 years. Today, Sening continues to offer innovative and customer-oriented solutions in the field of tank truck equipment.

Sening MultiTask quickly provides data such as loading and unloading quantities, location, meter readings, and much more for a complete record.

Connection to the on-board system and the control center guarantee complete integration into logistics control and operation management systems.

Extended communication technology enables remote monitoring of transport and logistics data.

Previous generations of Sening systems can be updated using MultiTask to ideal affect.

MultiTask offers solutions for all fuel delivery and is scalable to changing requirements while offering flexibility to address changing customer needs.

MultiTask Features and Benefits

Safety

- Monitoring loads by recording individual tasks
- Monitoring transport processes with sensors

Reliability

- Sophisticated electronics
- Meets legal metrological requirements
- Safe control of unloading using up to three discharge hoses
- Interfacing with enterprise resource planning management systems (ERP) for logistics and accounting purposes

Flexibility

- One platform for all tank truck applications
- Adaptable to changing requirements and to the individual application
- Easy to amend by using software release codes adding complementary functions

Simple, Intuitive Operator Guidance

- Intuitive user guides
- Self-explanatory symbols
- Simple and efficient operation due to touchscreen technology

Comprehensive Communications

- Link to on-board computer permits connection to logistics and ERP systems
- Equipped with a wide range of wireless communication interfaces
- Remote diagnostics and support

GPS-Based Monitoring System

- Event logbook with geo-coordinates
- Position reporting via global positioning system (GPS)


IVECO

Sening Tank Truck Applications

MultiSeal

- Greater safety for driver with no need to climb on top of tanks
- Increased payload through removal of ladders and dome lids
- Time monitoring of operational and transport processes
- Minimal intervention required by driver

NoMix

- Reduces the risk of operating errors by drivers, such as cross over or spill
- Prevention of contamination avoids down times, cleaning costs, disposal of contaminated products, and loss of image as a result of consequential damages, for example, to consumer's vehicles
- Unloading using up to three discharge hoses
- Hose monitoring system
- Monitoring vapor recovery connection during loading and unloading
- Saving time as the result of improved efficiency

MultiLevel

- Increased efficiency through enhanced discharge performance and low weight
- Quantity control
- High level of accuracy
- Loading control with optional preset of loading volume
- Simultaneous unloading from more than one compartment
- More flexible use of tank trucks
- Easy to operate

MultiFlow

- For conventional measurement systems
- Flexible unloading volumes
- Supports delivery runs which involve multiple unloading points
- Simultaneous control of up to three measuring systems
- Optional MultiControl remote operation

Enhanced Communication

- Conformance to FTL standard
- Can be combined with wide variety of systems
- Permits rapid adjustment of system
- Improved access times reduce idle time

EventView Service

- Dynamic display of logistics and event data
- Retrieval of tank truck loading and unloading data, for example, to product code, volume, etc.
- Sensor-based record of status changes
- Permits immediate analysis of event data

Loading

NoMix

- No product contaminations
- Monitoring vapor recovery

MultiLevel

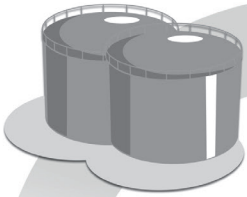
- Registration of loaded quantities

MultiSeal

- Electronic sealing after loading

EMIS

- Data communication for quantity delivered and seal status



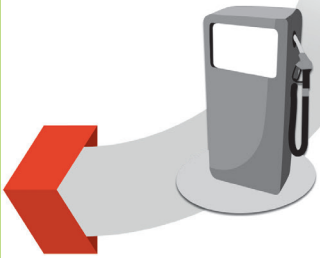
Office

- Loading data
- Unloading data
- GPS information
- Event data
- Order data

Transport

EventViewer

- Remote monitoring
- Seal status
- Support for Geofencing
- Improved service



Unloading

NoMix

- No product contaminations
- Monitoring vapor recovery connection
- Monitoring hoses

MultiLevel

- Compartment volume measured prior to unloading
- Metered discharge with up to three hoses reduces time for unloading

MultiSeal

- Seal status and empty reports

EMIS

- Data communication for quantity delivered and seal status

MultiFlow

- Up to three metering systems simultaneously

MultiSeal—Sealed Parcel Delivery

Sening MultiSeal, the Sealed Parcel Delivery System (SPD), is an international concept for the transport of petrol using road tankers which have been loaded using calibrated metering systems.

SPD is based on the automatic and electronic sealing of each compartment after loading. This ensures that the quantities loaded at the depot and unloaded to the customer are matching. In this case, proof of the delivery quantity is provided by the loading data—the document—in combination with confirmation of the unbroken seal and the status report following delivery. In other words, it eliminates the need for measurement during discharge.

The complete check on loading and unloading permits a rapid reaction to any deviations which may arise.

Concept of SPD

MultiSeal is the consistent implementation of the concept of sealed parcel delivery or electronic sealing.

The system consists of modular electronics built onto a network technology, with all the individual modules communicating with each other via a controller area network (CAN) bus. The system includes sensors on the appropriate compartment openings, for example footvalve, dome cover, API coupling, etc.

The MultiSeal electronics monitor the sensor's deployed record and store their respective status as individual events in real time. On the basis of the individual events, an item of information which can be a compartment seal, broken seal, etc., will be generated via a logical link, shown in the display, stored, and made available for further processing data transmission.

Compartment Sealing

Sealing the compartment permits the constant monitoring of the status of the compartment openings which are adapted to load or unload the product which include dome cover, footvalves, API-couplings, etc.

Seal status changes and events are displayed immediately on the screen. The complete drainage of a compartment during unloading is monitored by retained volume sensor or wetleg sensor. All events detected by the sensors are identified, recorded, and processed. The way in which data is presented is subject to considerable variation, from a simple display via a print-out to data transfer, everything is possible.

Components

API Coupling

An integrated proximity sensor constantly monitors the status of the MultiSeal API coupling.

Wetleg Sensor

A wetleg sensor installed in, or in front of the API coupling, records whether there is any fluid in a compartment and the associated tubing, or if the compartment has been completely drained. A “compartment empty” report will only be generated if the bottom valve is open and there is a simultaneous “dry” residual quantity status.

Footvalve

A sensor integrated in the footvalve constantly monitors the status of the MultiSeal footvalve.

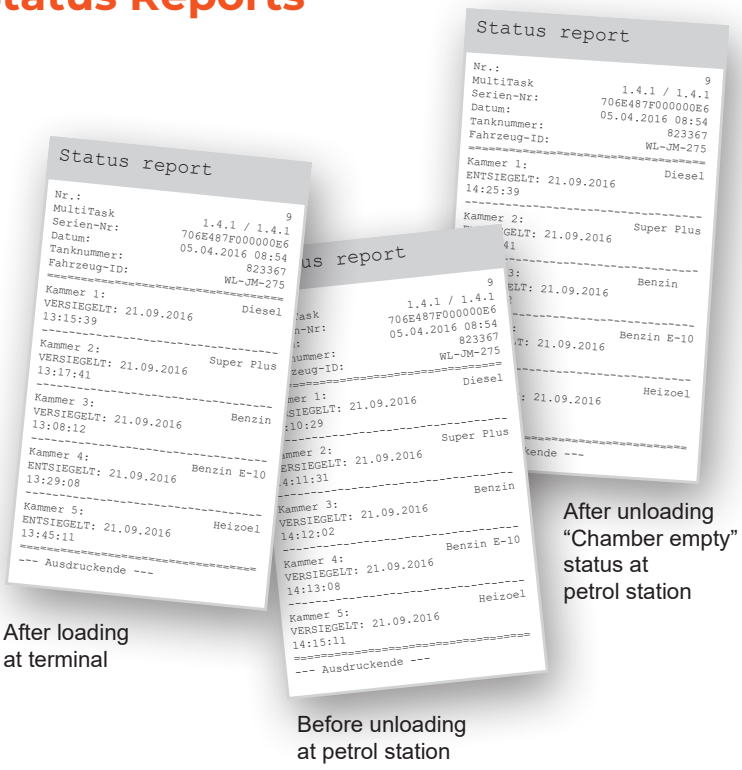
Monitoring Dome Covers

A sensor records each time a dome cover is opened.

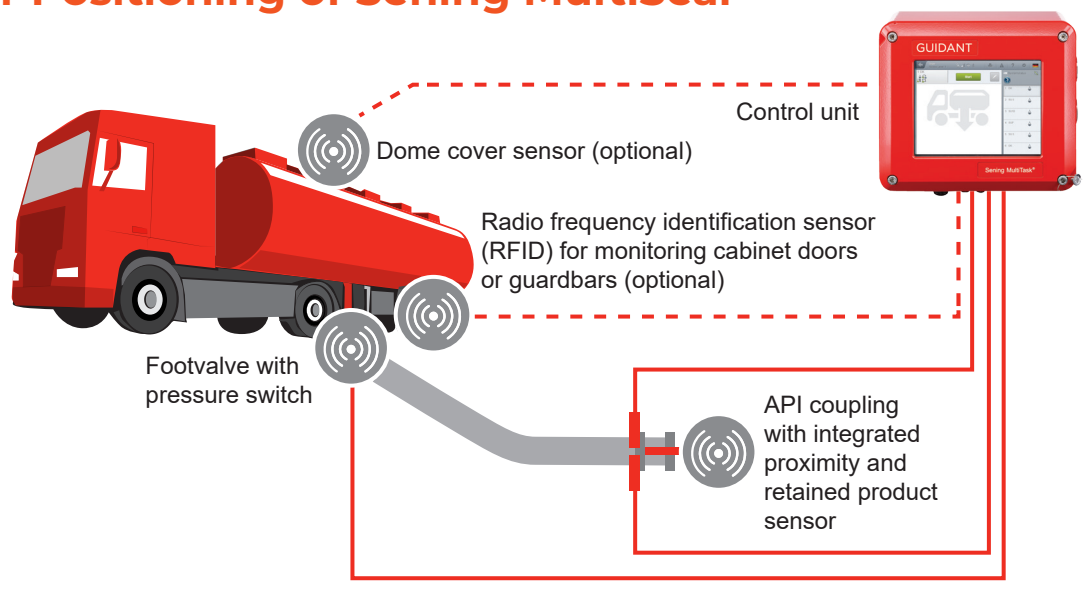
Monitoring Cabinet Doors or Guardbars

A radio-frequency identification (RFID) module forms the core of cabinet doors or guardbars monitoring. The optional RFID module constantly ensures an unambiguous identification for a high level of manipulation safety.

Printouts of Status Reports



Sensor Positioning of Sening MultiSeal



NoMix—Cross-Over and Contamination Prevention

Sening MultiTask with the NoMix cross-over prevention application ensures compliance with all quality and safety requirements during the loading and unloading of petrol products.

While the tanker is being loaded or unloaded at a petrol station, the driver is presented with the task of making the correct hose connection. Although this involves routine procedures, there is always a potential for human error. Loading a tanker with the wrong fuel or unloading the wrong fuel at a petrol station may cause extensive and costly damage, including:

- Downtime of tank trucks and service stations
- Tank cleaning
- Treatment and disposal of the contaminated fuel
- Tarnished brand image for the supplier and oil companies
- Damage to vehicles refuelled with contaminated fuel

Benefits

- Prevention of product contamination during loading and unloading
- Increased efficiency as a result of reduced unloading times
- Improved vehicle utilization
- Easing the burden on the driver by avoiding errors
- Avoiding the risk of financial losses and damage to image resulting from product contaminations

Principle of Operation

NoMix prevents products from product contaminations during loading and unloading.

NoMix recognizes the product code before the loading process begins at the truck loading gantry or the unloading process begins at the petrol station. NoMix maintains a permanent record of all events.

Technology

NoMix depends on a read-out of specific TAG information, such as product coding, for example DK, SU95, SU98, on the basis of an electric circuit using loading arms and discharge hoses as the conductive "wire".

There is no external power supply required to activate the TAG electronics.

NoMix Loading at the Gantry

NoMix reads the data from the product identification device (PID) at the loading arm (Depot-TAG)

NoMix compares the data from the Depot TAGs with the product code of the most recently loaded product.

Loading will only be released if the selected compartment is empty or the product codes are matching.

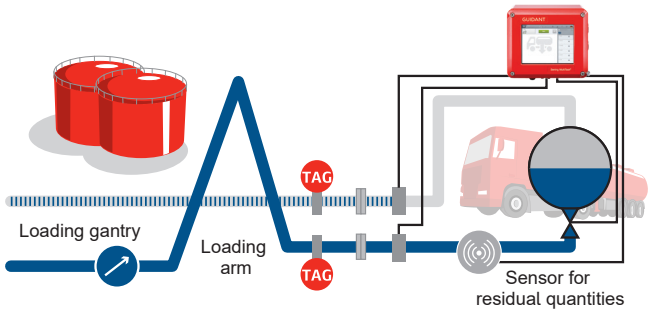
NoMix Unloading at the Petrol Station

NoMix prevents products from product contaminations during loading and unloading.

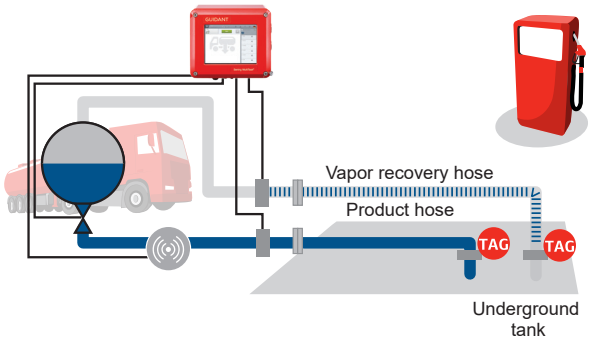
NoMix recognizes the product code before the loading process begins at the truck loading gantry or the unloading process begins at the petrol station.

NoMix maintains a permanent record of all events.

At the Terminal



At the Petrol Station



Terminal

A TAG is installed at the loading and vapor recovery arms at the terminal.

Petrol Station

The TAG configurations allow for a wide range of installation options at the storage tank filling nozzle.

MultiLevel—Accurate Measurement System

The possibility of simultaneous delivery from more than one compartment and the low weight are the system's outstanding features and contribute to increased flexibility and efficiency when transporting petrol.

The Sening MultiLevel system was developed in accordance with the Directive issued by the Organisation Internationale de Métrologie Légale (OIML) and meets all official requirements for custody transfer measurement.

Mode of Operation

MultiLevel is a system for measuring delivery quantities from single- and multi-compartment petrol tank trucks. Each compartment is fitted with a level probe and sensors which monitor filling level, temperature, vehicle inclination, and retained product.

MultiLevel permits simultaneous and metered dry-line delivery from more than one compartment, with discharge volume preset and optional temperature compensation.

MultiLevel monitors the filling level prior to and after loading and unloading. Loading can be limited by a pre-defined maximum filling volume.

Features

- Examination of loaded quantity at terminal
- Compartments are monitored during loading, transport, and unloading
- The loading control function permits the preset of a maximum loading volume per compartment
- Wide variety of options for reporting, such as tour data, shift schedule, weights, delivery volumes, totalizer readings, and more

Benefits

- Accurate measurement during loading and unloading
- 100% cost control through dry-line deliveries which is no retained product in pipework
- Permits flexible deployment of vehicles
- Increased efficiency as a result of reduced unloading times
- Faster discharge reduces idle time at the petrol station
- Reduced weight enables higher payload

Components

Level Probe

The level probe is built into the center of the compartment and fitted with a protective tube. The probe head is at the bottom, outside the compartment. A purpose-designed float provides a measuring accuracy of +/- 0,1 millimeters (mm) over a range of 40 to 4.000 mm. This allows for optimized, compartment specific, and minimum discharge volumes.

Sensors

MultiLevel uses sensors to:

- Determine and correct vehicle inclination
- Evaluate the filling level of each compartment
- Measure temperature in the pipe system during loading and unloading
- Detect retained product in the piping system

Software

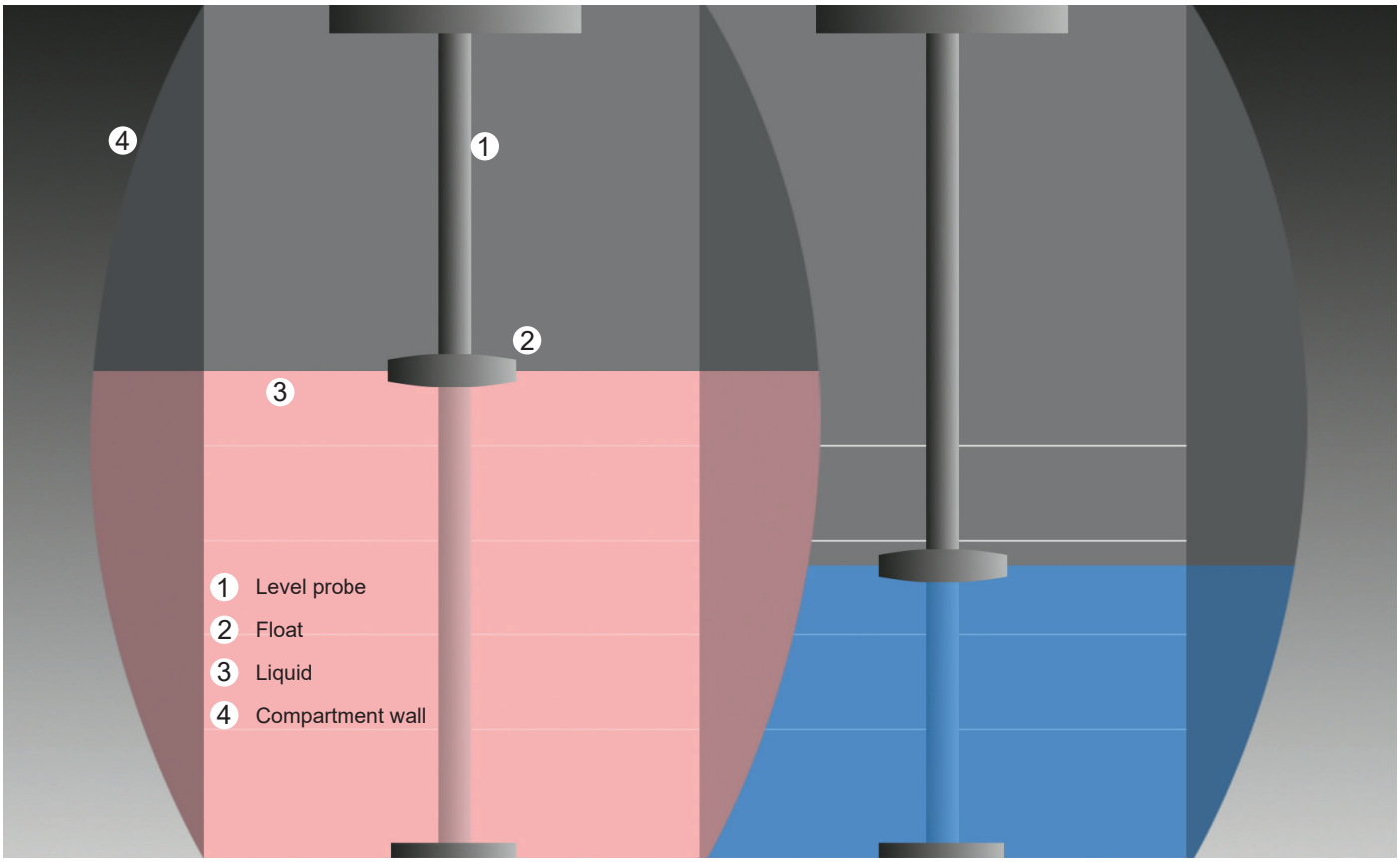
The software is separated into a weights and measures protected section and a non-protected section to enable easier software updates to address customer and operational requirements.

Compartment-Specific Level Tables

The compartment-specific level tables allocate individual fill volumes. Interim values are interpolated lineally. An incline sensor corrects any deviations. Wave movements inside the chambers are compensated by the MultiLevel software, such that the most accurate metered values are possible within the minimum period of time possible.

Tank Compartments

The tank compartments use a purpose designed calibration system.



MultiFlow—Electronic Register and Controller

Sening MultiFlow is an electronic register and controller installed on the road tanker which precisely records the volume of the metered fluid. It is the ideal application for tank trucks involved in the petrol and fuel delivery process.

MultiFlow was developed in accordance with the Directives issued by the “Organisation Internationale de Métrologie Légale” (OIML) and meets all statutory requirements for custody transfer measurements and complies with the European Directive on Measuring Instruments 2004/22/EC (MID).

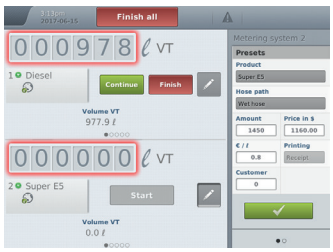
With MultiControl remote operation, MultiFlow can be operated remotely, saving time for the operator and increasing safety during the delivery process with the remotely-operated emergency shut-down function.

Features

- Registration of measurement data from heating fuel and petrol deliveries
- Precise records of volume
- MultiControl remote operation is optional
- Optimally tuned to the reliability and precision of the Sening and Smith Meter metering systems

Sening MultiFlow

In combination with the appropriate data communication interface, MultiFlow can be connected to office software using an OBC or via GPRS/GSM.



Sening MultiControl

MultiControl is the intelligent combination of MultiFlow with the wireless remote control and overspill protection, which offers a number of control and display functions for improved delivery operations. Key process and safety information is displayed on the remote controller and functions are safely performed from a distance at the client’s storage facilities.

Sening Metering Systems

In combination with the Sening flow measurement solutions, Sening MultiFlow provides superior performance with the integrated meter and gas extractor packages, Sening GMVT805 and GMVZ1003 and the Smith Meter truck meter packages. The system’s flexibility guarantees also to interface with any other brand flow meter.

EventViewer Service— Everything at a Glance

The Sening EventViewer offers you the option of monitoring your tank truck in a map-based web application. The EventViewer tracks the core tasks including the display of events performed by the tank truck. Using these features, you will be able to check the processes of the tank truck and identify irregularities.

The Sening EventViewer can be adapted to your own needs. You can create geofences for petrol stations, truck depots, haulier yards, etc. to define precisely the range within which loading and unloading can take place. You can also specify alerts in the event of any irregular loading and unloading outside the Geofence.

Features

- Tracking tank trucks
- Individual configuration
- Display of events
- Transport monitoring
- Display of loading and unloading quantities
- Ease of operation
- Definition of rules for alarms and alert by email or text

Mode of Operation

The Sening EventViewer is a web application and thus does not require installation. You can access your data and check where your tankers are at any time. The user-friendly display makes operation of the Sening EventViewer quite simple. The GPS coordinates are stored and can be used to identify the location of your vehicles at any time. You can also export and store all data.

Configuration Options

Customers

Under Customers you can create and manage your petrol stations or specific delivery locations.

Truck Bases

Truck Bases are the locations where your vehicles are kept when they are not operational.

Loading Point

The tank truck loading depots can be configured as required.

Trucks

Configure your tankers, such as specify compartment volume and number of compartments, vehicle registration, and transmission options.

Products

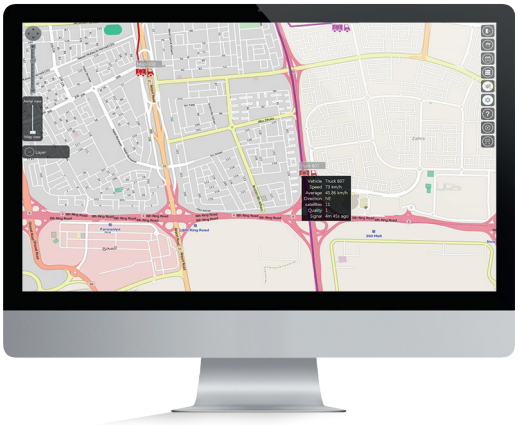
Under this heading you can create the products which your tanker can load.

Event Alerts

You define your own rules under which alerts have to be sent to one or many users. You can also define whether this rule is applicable for all or only specified tank trucks.

Vehicle Status and Tracking

Using Tracking, you can not only see whether your tankers are online, such as have a GPS signal, but also track the route of an individual tanker.



About Guidant

As the undisputed leader in liquid and gas custody transfer solutions with the largest global install base, Guidant's legacy is built on more than 80 years of expertise, accuracy, reliability, and best-in-class technologies. We are a private company focused on the measurement solutions business, serving emerging and established energy markets across the globe.

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