Thincke

Level Measurement and Remote Monitoring

THINCKE ELECTRONIC TECHNOLOGY CO.,LTD.

Tank Level Measurement and Tank Remote Monitoring Solutions Provider.

Product Catalogue

www.thincke.com

We are THINCKE (TNK), a company that develops, designs and manufactures hardware and software for the Internet of Things, including telematics and sensor design and production.

We develop and manufacture hardware and software for the IoT, including remote information processing and sensor design and production. Provides solutions for Remote Management, Fleet Management, and GPS tracking of industrial storage tanks.

The Non-Invasive Ultrasonic Level Sensor designed and produced by us has been widely used in Propane tanks, Fuel tanks, and Gas Cylinders, Gas bank. In addition, the Remote Management System developed by us can be used not only in fixed storage tanks but also in Tanker Trucks.

Our products

- **Non-invasive Ultrasonic Level Sensor**
- **Non-invasive Ultrasonic Level Switch**
- **Portable Level Indicator**
- **Mobile Tanker Truck Level Sensor**
- **Gas Cylinder Level Sensor**
- **Ultrasonic Fuel Tank Level Sensor**
- **Remote Terminal Unit**
- **Tanker truck monitoring system**
- **Tank Level Remote Monitoring system**
- **Cylinder Level Remote Monitoring system**
- **Fire Truck Intelligent Control System**

Non-invasive Ultrasonic Level Sensor

Model: TNK-GH

Product Summary

It is a device that uses the principle of ultrasonic to measure the liquid level in the tank by sticking an external sensor to the bottom of the tank.

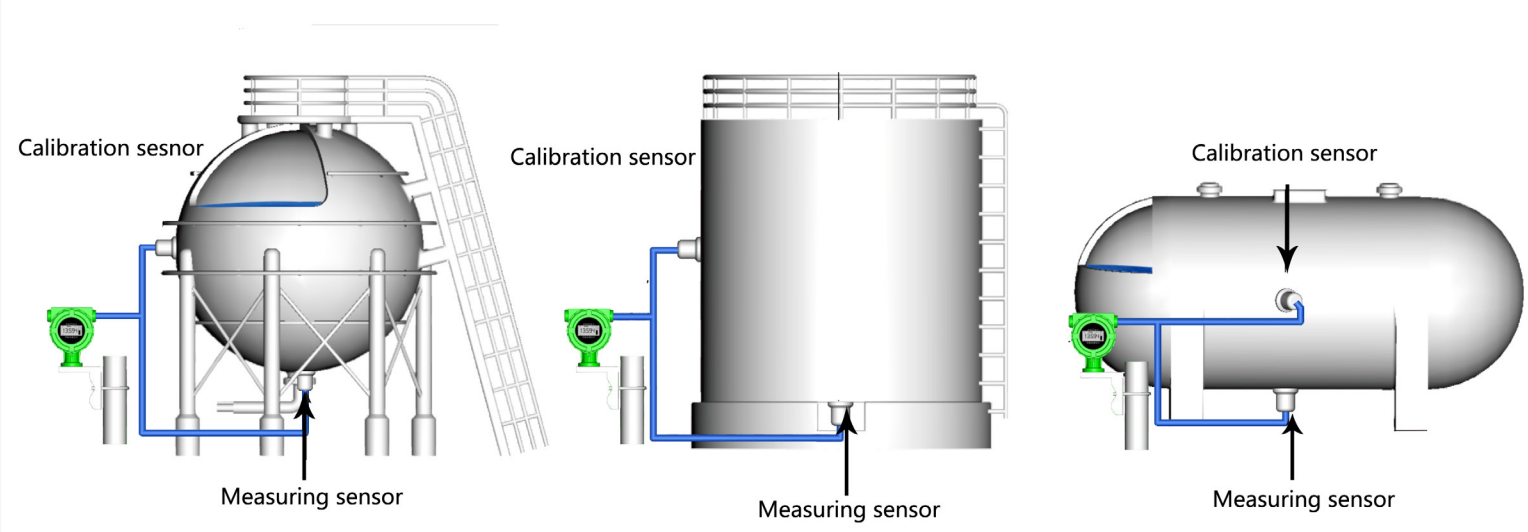
Non-invasive Ultrasonic Level Sensor

Key features

- It truly realizes the external non-contact measurement of liquid level.
- No reliance on any existing mechanical gauges.
- Do not open the tank, the installation process is safe.
- Continuous measurement.
- Quickly and precisely measures the gas level in kilograms and percent.
- The ultrasonic sensor is glued externally to the bottom of the tank.

Product pictures

Applications

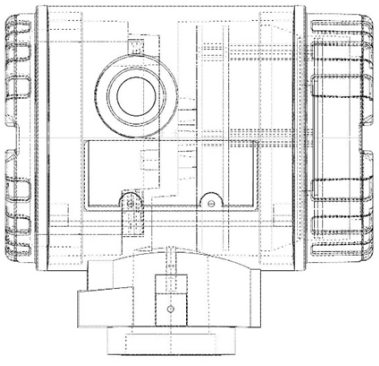


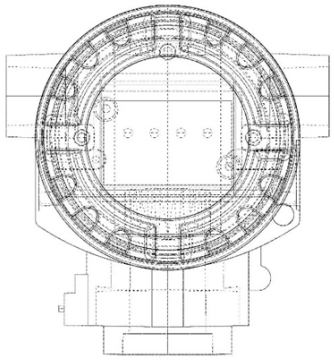
Spherical Tank　　Vertical Tank　　Horizontal Tank

Technical Specifications	
Max Measuring range	6m, 15m, 30m
Accuracy	±0.5%FS
Signal output	(4~20)mA, RS485, Wireless Output are Optional
Communication	RS-485, IR
Power Supply	9-36V DC
Explosion-proof sign	Exd II CT6
Enclosure protection grade	IP67
Weight of mainframe	1KG
Size of mainframe	118mm(length)*85mm(width)*110mm(height)

The measured medium			
LPG	Butadiene	Propylene	Propane
Liquid ammonia	Methyl alcohol	Methylbenzene	98% sulfuric acid
Diesel	Gasoline	Naphtha	Liquid chlorine
Iso-butane	Epoxypropane	Acetone	Sulfuretted hydrogen
Styrene	N-butane	Xylene	Silicon tetrachloride
Tert-butylamine	Chloroform	Acetaldehyde	Hydrogen ßuoride
Hydroßuoric acid	Butane	Hydroxy nickel	Lubricating oil

The medium to be measured is pure liquid, the temperature is not more than 80 ℃ , no crystallization, no too thick precipitation medium can be measured.





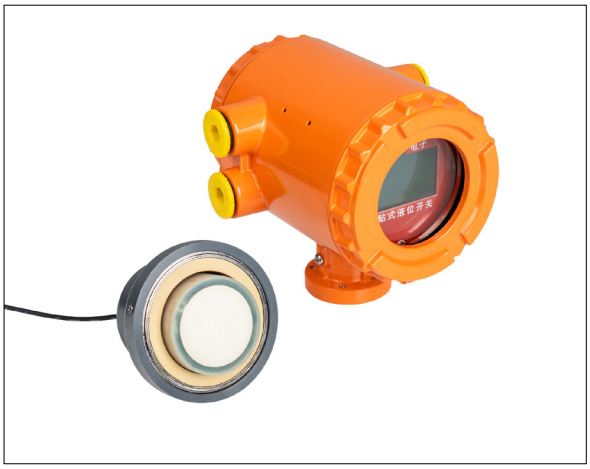
118mm*85mm*110mm

Non-invasive Ultrasonic Level Switch

Model: TNK-SW

Product Summary

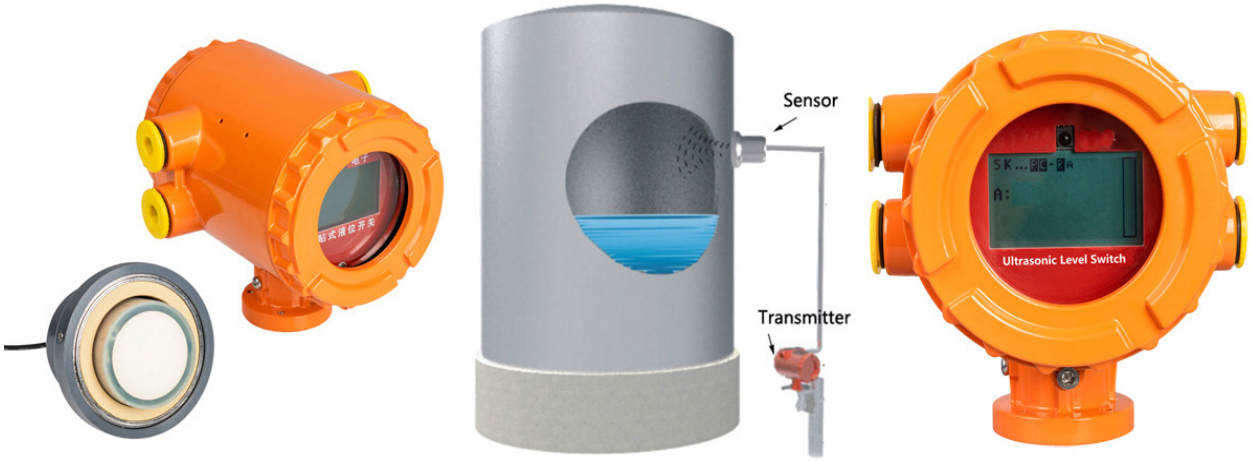
The Non-invasive Ultrasonic Level Switch is a new type of liquid level monitoring and alarming device, mainly used for liquid level detection.



Non-invasive Ultrasonic Level Sensor

Key features

- Non contact liquid level measurement, safe
- Easy to install and maintain.
- Online debugging function.
- One click calibration.



Applications

The Non-intrusive level switch is particularly suitable for non-contact accurate monitoring of various toxic, strong acid, strong alkali and various liquid levels in closed containers. The Non-intrusive level switch adopts explosion-proof design, which can be used in the occasion where explosion-proof is needed. For example, in the pharmaceutical manufacturing industry, the liquid level control in the pipeline and storage tank, in the petrochemical oil pipeline and storage tank, in the food industry, the liquid level detection and monitoring engineering projects in the storage tank and pipeline for wine making, beverage, milk production, etc.

Technical Specifications	
Container Wall Thickness	Max 60mm
Repeatability error	± 5mm
Signal output	Relay Output (passive node)
Communication	RS-485, IR, HART, Bluetooth
Power Supply	9-36V DC
Explosion-proof sign	Exd II CT6
Enclosure protection grade	IP67
Weight of mainframe	0.8KG

Portable Level Indicator

Model: TNK-

Product Summary

Portable level Indicator is a portable ultrasonic level sensor, small and lightweight, used for measuring the level of any tank, CO2 cylinder, container, or pipeline.

Portable Level Indicator

Key features

- Mobile measurement
- Easy to carry
- No need contact the liquid
- High accuracy, low blind zone
- Low power consumption

The Portable Level Indicator is a non-continuous measurement portable liquid level gauge developed by our company for movable containers. which is powered by a lithium battery and easy to carry. With the principle of sonar ranging. the portable gauge realizes the complete isolation measurement. breaks the traditional open tank contact measurement mode. and realizes the real non-contact measurement of the liquid level in the closed container. It the safe and reliable. low dead zone. high precision. It is suitable for measuring all kinds of small storage tanks under 5 meters.

Applications

Technical Specifications	
Max Measuring Range	5m
Blind Spot	15mm for Ideal working condition
Max Tank/Vessel Wall Thickness	25mm
Liquid Viscosity Requirement	<10 mPa.S
Repeatable Measurement Error	±10mm
Ambient Temperature for Display	-20℃ ~ +70℃ (-4 °F ~ 158 °F)
Ambient Temperature for Probe	-45℃ ~ +80℃ (-49 °F ~ 176 °F)
Environment Humidity	(0% ~ 95%)RH
Display Resolution	128×64
Power Supply	3.7V Lithium Battery
Charge	USB
Operating Hours	>12h
Meter Dimensions	160*80*26mm
Cable Length	1 m

Mobile Tanker Truck Level Sensor

Model: TNK-GT

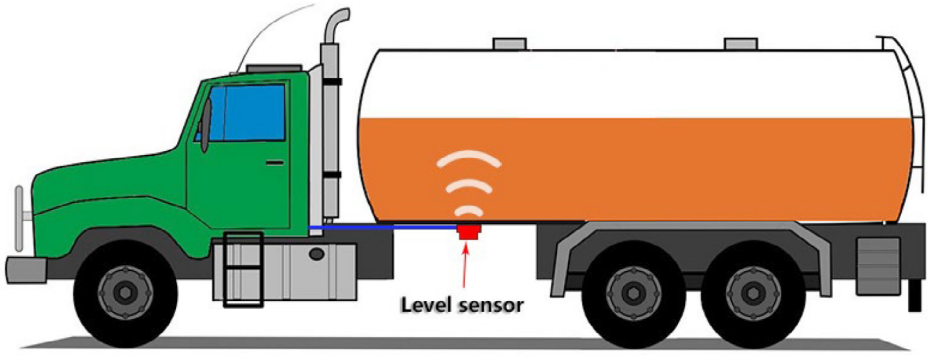
Product Summary

Mobile Tanker Truck Level Sensor is designed for the mobile tank truck to measure the liquid level of the tank of the mobile tank truck.

Key features

- Specially designed for truck tanks
- The remaining liquid level of the tank can be checked by LCD screen.
- Non-invasive measurement. Don't have to drill, don't have to empty tanks.
- Quickly and precisely measures the gas level in kilograms and per cent.
- The sensor is attached to the bottom of the tank by magnets.

Applications



Technical Specifications	
Maximum depth	3m
Relative accuracy	1 mm
Maximum road slope	6 degrees(10.5%)
External power supply	9-30 V
Analogue output range	0 -3 V DC
Electronics box dimensions	104 x 107 mm (excluding connectors)
Sensor dimensions	Dia 40 mm*20 mm
Sensor cable length	10m
Waterproof	IP67
Wall thickness	Max 20mm

Gas Cylinder Level Sensor

Model: TNK-GCi02

Product Summary

Gas Cylinder Level Sensor is a device for measuring the residual liquid level of the gas cylinder or propane bottle.

Gas Cylinder Level Sensor

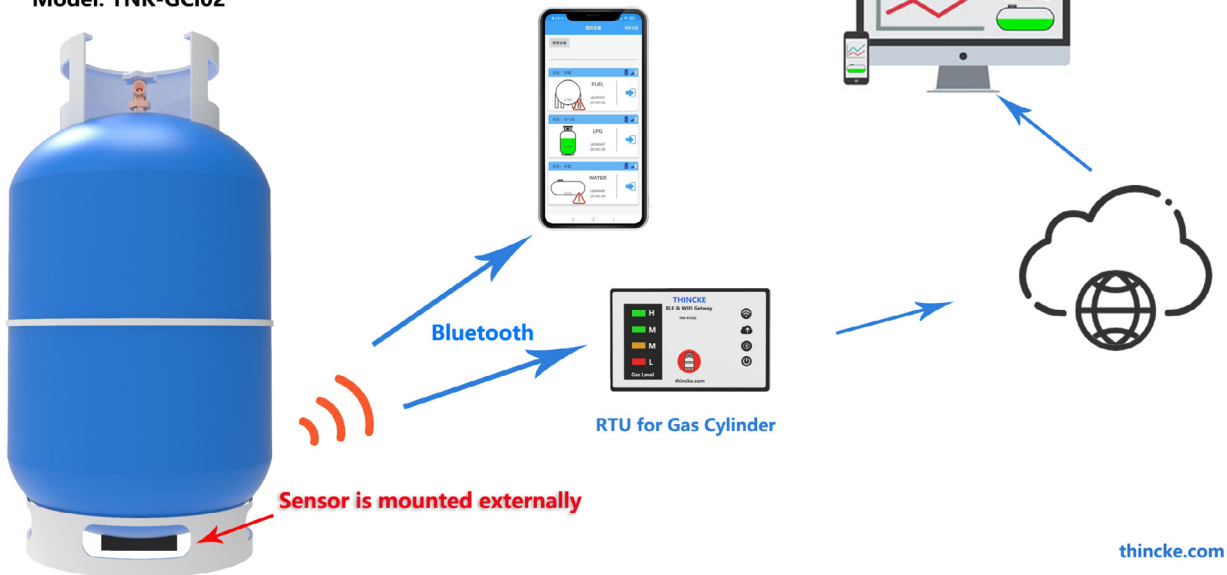
Key features

- ultrasonic sensor for measuring the Gas Cylinder.
- suitable for aluminium and iron cylinder
- The host includes Bluetooth communication module.
- Smart Tank APP for Android phone (showing measurement results).
- Power: Two AAA alkaline batteries.
- Integrated design, easy to use.
- It can be removed at any time and installed in a new replacement tank.
- Adsorbed on the bottom of gas tank by magnet, easy to install.

Overall installation drawing

Gas Cylinder Level Remote Monitoring

Model: TNK-GCi02



Technical Specifications	
Max Measuring range	1.5m
Measuring error	±1%FS
Communication	Bluetooth with Mobile phone App
Signal output	Bluetooth
Power supply	3V DC (AAA batteries*2)
Size of mainframe	80mm*50mm*25mm
Battery life	120 days (Automatic detection: 3 times/per day)
Size of probe	30mm(diamter)

Applications of Gas Cylinder Level Sensor

5kg. Cylinder

Size: vertically placed, approximately 1.5 feet in height by 1 foot in diameter

10kg. Cylinder

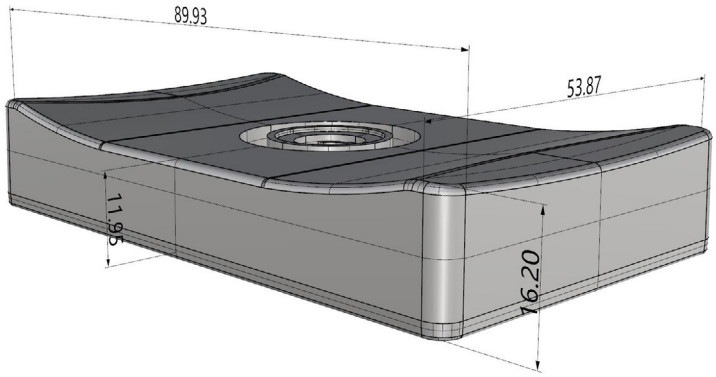
Size: vertically placed, approximately 2 feet in height by 1 foot in diameter

15kg. Cylinder

Size: vertically & horizontally placed, approximately 4 feet in height by 1.5 foot in diameter

50kg. Cylinder

Sizes: vertically placed, approximately 54.4" in height and 30" in diameter



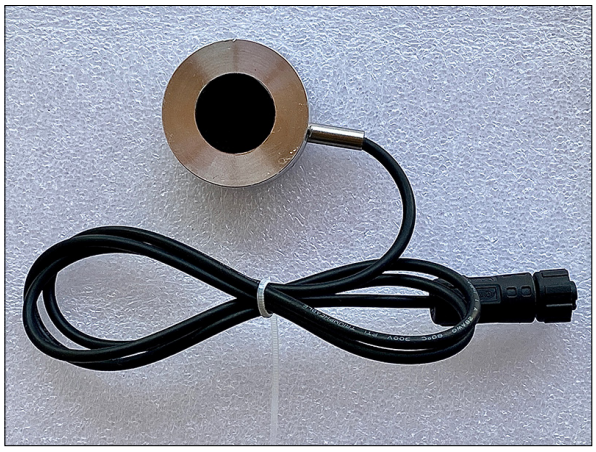
Please refer to the following link for detailed installation and usage video:
https://youtu.be/FBpKJ1CNKqA

Ultrasonic Fuel Tank Level Sensor

Model: TNK-GF

Product Summary

The Ultrasonic Fuel Tank Level Sensor is a device used to monitor the fuel level in Truck Fuel Tanks or Generators.



Ultrasonic Fuel Tank Level Sensor

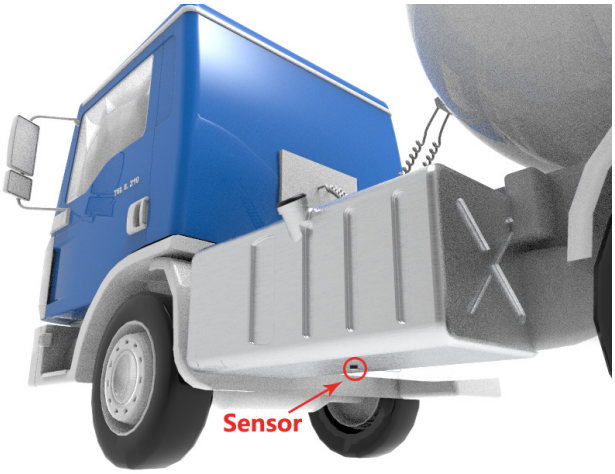
Key features

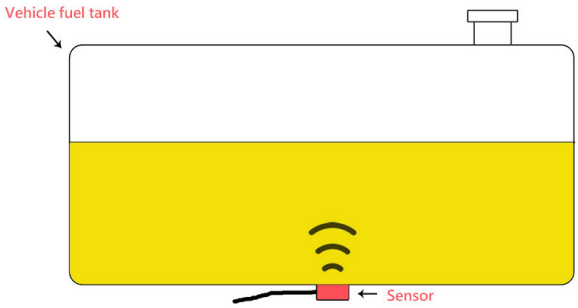
- Anti fuel theft for vehicle, Perfect Solution to Prevent Fuel Theft, Diesel Tank, etc.
- Non-invasive level measurement.
- Suitable for various types of fuel tanks.
- Available in Android and iOS Mobile App.
- The sensor is attached to the bottom of the fuel tank by magnets.

Applications

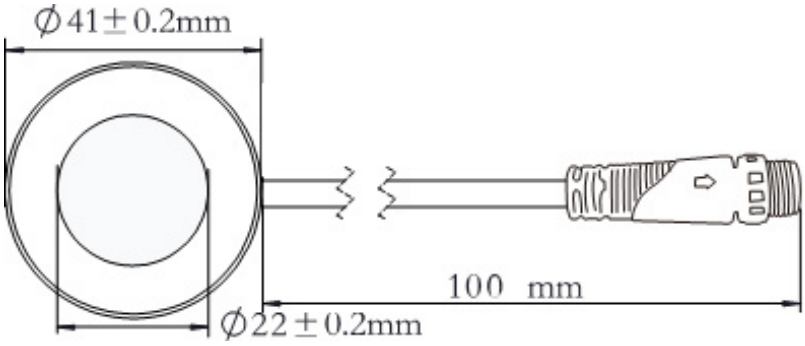
Ultrasonic Fuel Tank Level Sensor is the perfectsolution for monitoring the fuel level and fuel consumption of Trucks, Fuel Tankers, Boats, construction equipment, Generators, stationary tanks, etc.The sensor works independent of the vehicle electronics, therefore it can detect and report a fuel theft in real-time bysending an alert even when the vehicle is switched off.

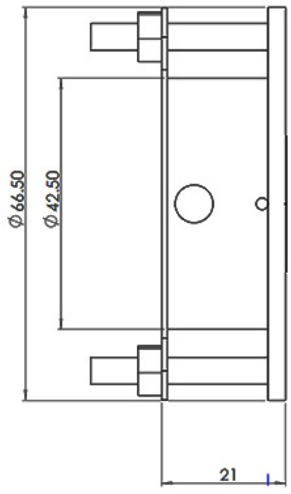
On top of detecting fuel-theft, it also allows real-time fuelmonitoring and calculation of the remaining mileage based on the content of the tank.





Technical Specifications	
Maximum depth	1.5m
Relative accuracy	1 mm
Maximum road slope	6 degrees (10.5%)
External power supply	5-36 V
Internal battery	LiPo 3.7 V, 1000 mAh
Expected battery duration	7 days for 1000 mAh
Analogue output range	0 -3 V DC
Electronics box dimensions	104 x 107 mm (excluding connectors)
Sensor dimensions	Dia 40 mm*20 mm
Sensor cable length	10m
Waterproof	IP67
Wall thickness	Max 20mm



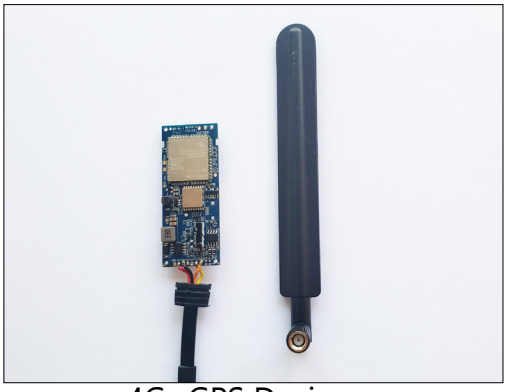


Transmission Module

Model: TNK-RTUGH

Product Name: Transmission module

4G+GPS Device is an advanced transmission module that transmits data through GPRS for tanks and other specialized machinery.



4G+GPS Device

Key features

- 2G, 3G, 4G (NB-IoT) supported connectivity
- Tachograph data reading
- RS485 interfaces

Technical Specification

Operating voltage:	9-36 V DC
Power consumption:	Standby current ≤20 mA; Contact sensor peak condition ≤80 mA
Operating environment:	-40 ℃ ~ 80 ℃ , storage -45 ℃ ~ 90 ℃ , relative humidity 10% ~ 95% (no condensation)
Communication module:	FDD Band 1,3,5,8 Band 34,38, 39,40,41, GSM900/1800, 2g network using gsm900/1800 frequency Band.
Satellite module:	GOtop Chuangxin Electric
Reception frequency:	66 channels, L1 band (1575.42 Mhz) C/A code, -163DBM simultaneously tracking 22 satellites
Module parameters:	Recapture time ≤1Sec, hot start time ≤1Sec, cold start time average ≤23Sec, working current: positioning: 17mA capture: 20mA
Sensitivity:	Tracking: -162dbm Capture: -145dbm

4G+GPS Device

Model: TNK-RTUGF

Product Name: 4G+GPS Device

4G+GPS Device is an advanced transmission module for data monitoring of mobile tank cars and vehicle fuel tanks

Key features

- 2G, 3G, 4G (NB-IoT) supported connectivity
- Tachograph data reading
- RS485 interfaces
- IP65

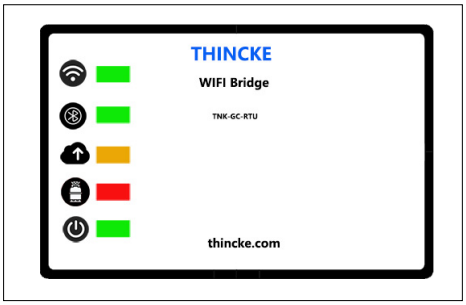
Technical Specification

Operating voltage:	9-36 V DC
Power consumption:	Standby current ≤20 mA; Contact sensor peak condition ≤80 mA
Operating environment:	-40 ℃ ~ 80 ℃ , storage -45 ℃ ~ 90 ℃ , relative humidity 10% ~ 95% (no condensation)
Communication module:	FDD Band 1,3,5,8 Band 34,38, 39,40,41, GSM900/1800, 2g network using gsm900/1800 frequency Band.
Satellite module:	GOtop Chuangxin Electric
Reception frequency:	66 channels, L1 band (1575.42 Mhz) C/A code, -163DBM simultaneously tracking 22 satellites
Module parameters:	Recapture time ≤1Sec, hot start time ≤1Sec, cold start time average ≤23Sec, working current: positioning: 17mA capture: 20mA
Sensitivity:	Tracking: -162dbm Capture: -145dbm
Positioning parameters:	Positioning accuracy 10 meters, maximum height 18,000 meters, maximum speed 515 meters/s, maximum acceleration 4G.

WiFi-Bluetooth Bridge

Model: TNK-RTUGC

Product Name: Remote Terminal Unit for Gas Cylinder



WiFi-Bluetooth Bridge for gas cylinder is an advanced wireless transmission Gateway (WIFI+Bluetooth Gateway). It connects with the cylinder level sensor through Bluetooth and transmits the liquid level data to the Internet through WIFI, so as to realize the remote data transmission of propane cylinder usage data.

Key features

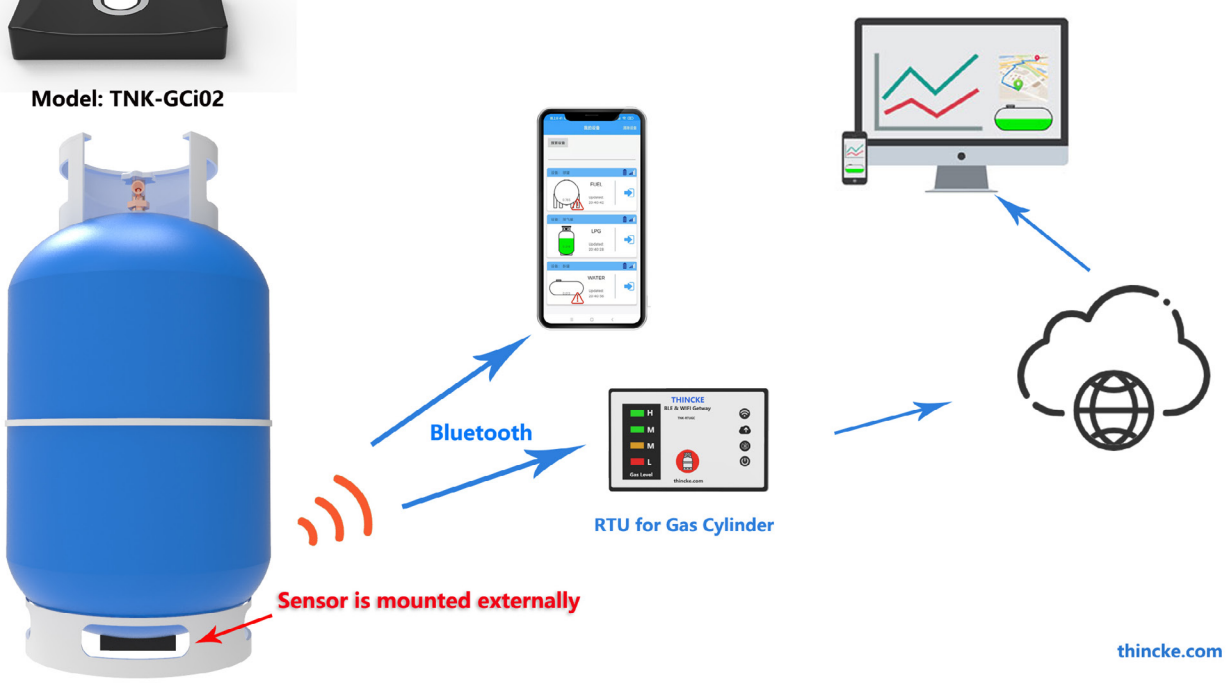
- The gas tank level information can be uploaded to the Internet.
- Easy to use.
- It can be used at no extra cost and is transmitted via a home router.
- Real-time display of liquid level information.
- Power supplied by ordinary USB charger.

Technical Specification

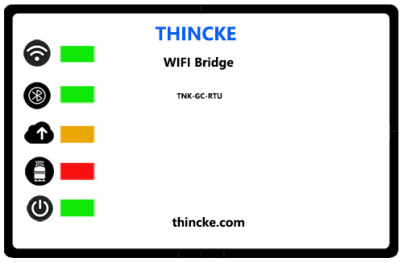
Operating voltage:	5 V DC
Power consumption:	Micro USB
Bluetooth transmission range	4 m
WiFi transmission range:	10m
Method of setting:	APP
Size :	70 x40 x 12mm

Gas Cylinder Level Remote Monitoring

Model: TNK-GCi02



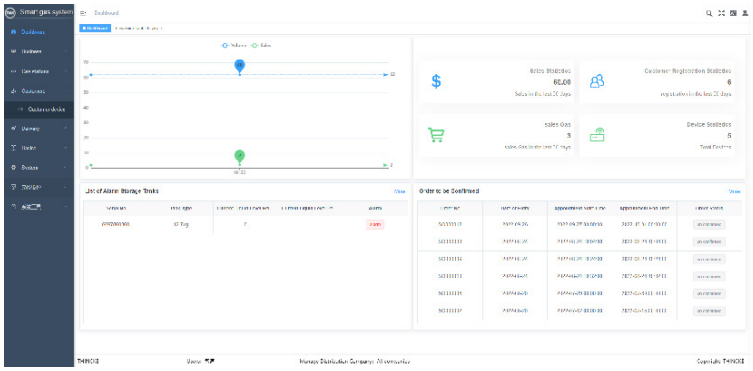
Required equipment

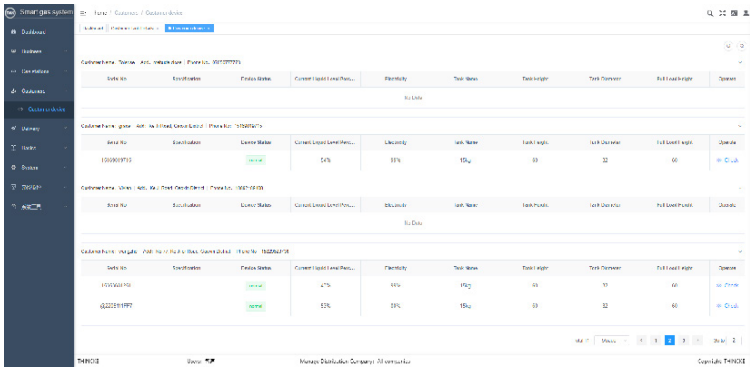


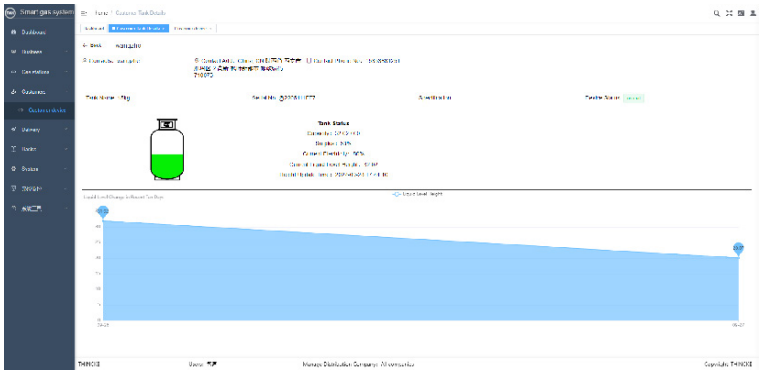
Remote Terminal Unit for Gas Cylinder
Model: TNK-RTUGC

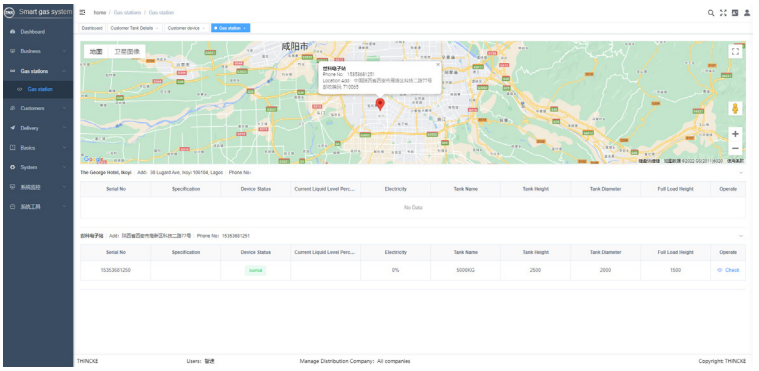
Gas Cylinder Level Sensor
Model: TNK-GCi02

Demo：http://smartgas.zhisu.vip/





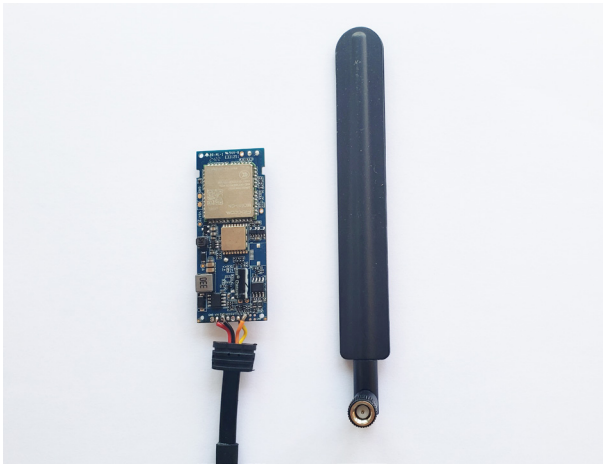




Tank Level Remote Monitoring system

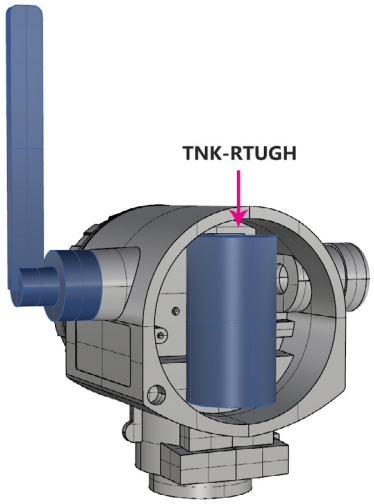
Required equipment

Non-invasive Ultrasonic Level Sensor
Model: TNK-GH



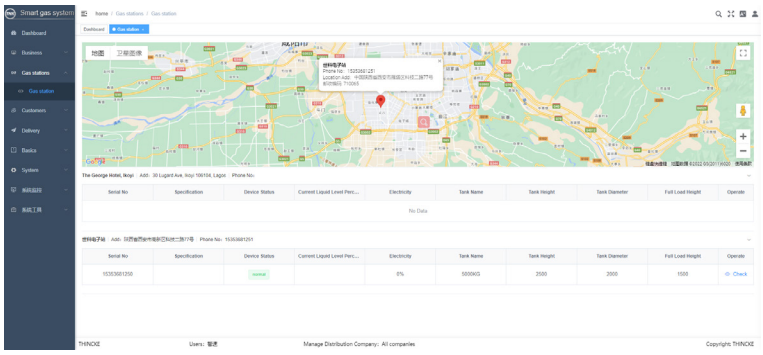
Remote Terminal Unit for Tanks
Model: TNK-RTUGH

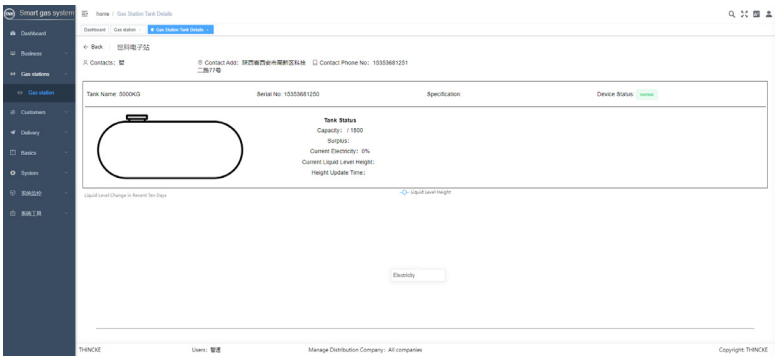
Installation



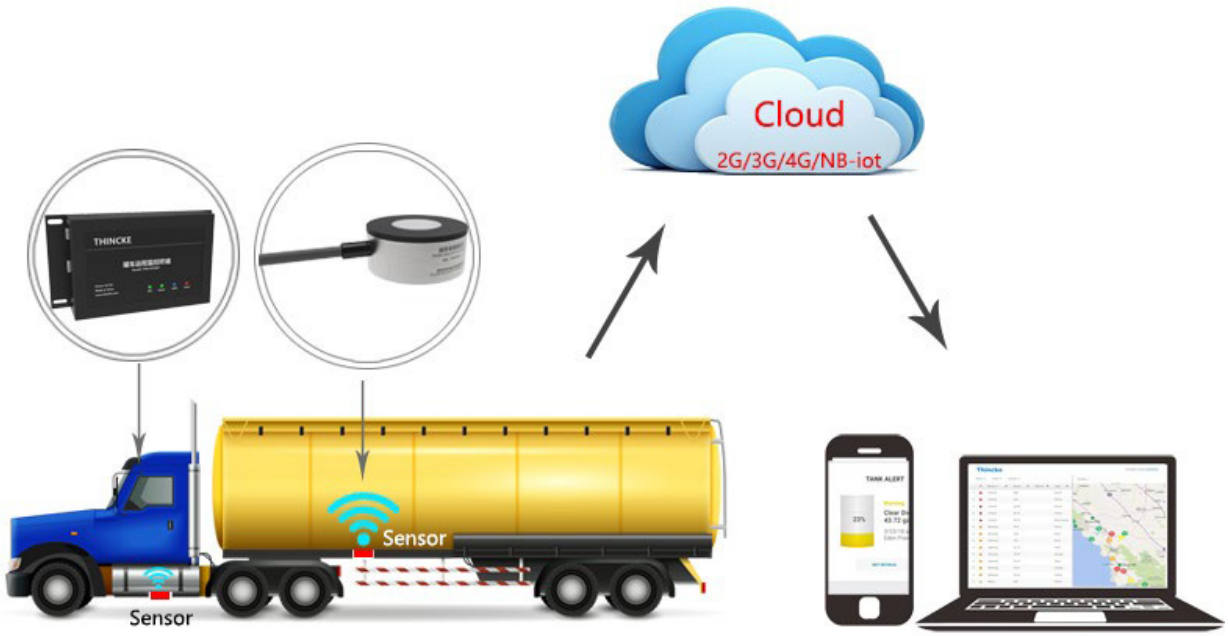
This module(TNK-RTUGH) is installed inside the**Non-invasive Ultrasonic Level Sensor,** and we will help the customer install it before leaving the factory. The user only needs to access the DC 24V power supply to use it.

Demo http://tank.zhisu.vip/

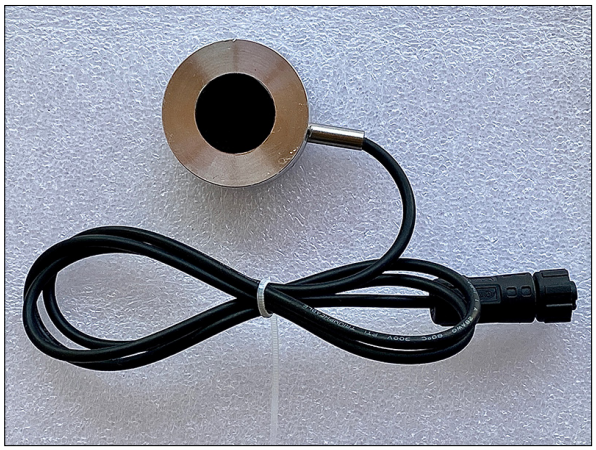




Tanker truck/Fuel tank monitoring system



Required equipment



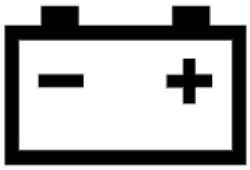
Ultrasonic Fuel Tank Level Sensor

Model: TNK-GF/TNK-GT

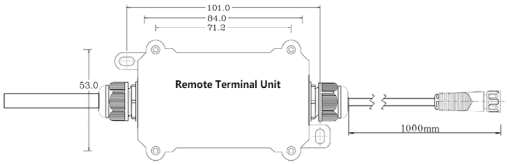
4G+GPS Device

Model: TNK-RTUGF

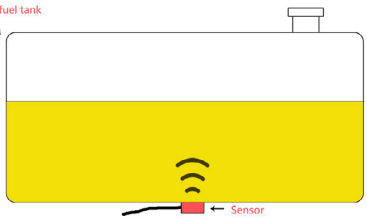
Installation



Vehicle mounted battery

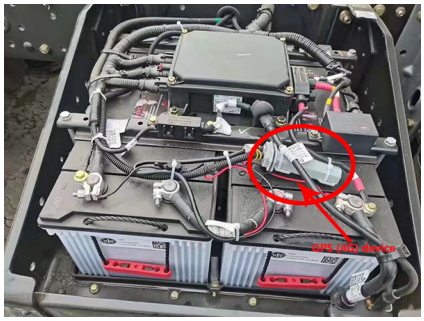


4G+GPS Device

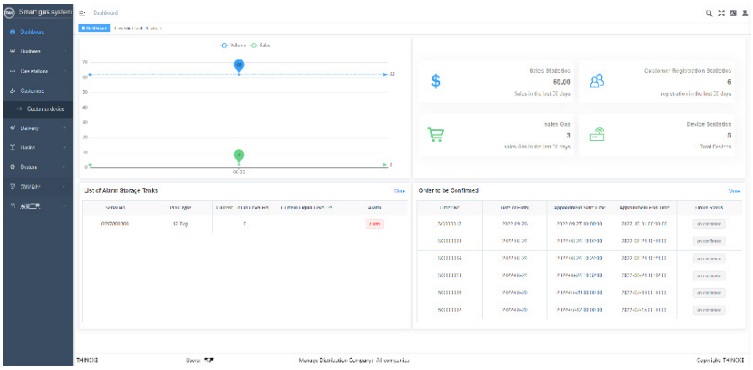


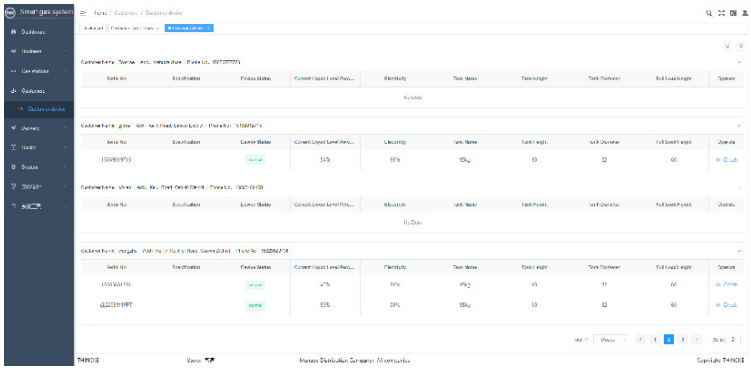
Ultrasonic Fuel Tank Level Sensor

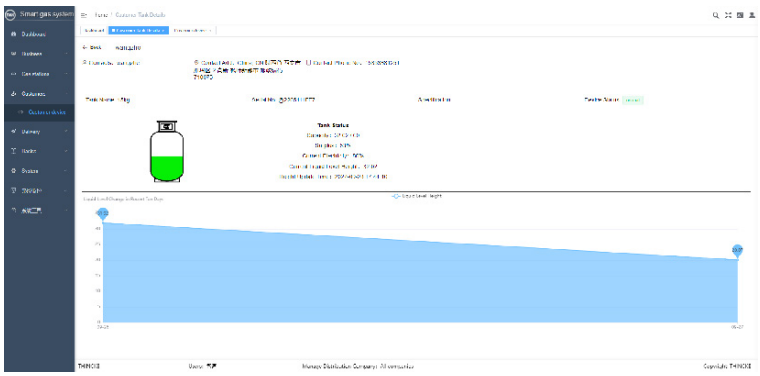
The Ultrasonic Fuel Tank Level Sensor is installed at the bottom of the storage tank, and the 4G+GPS Device is installed on the vehicle battery, because the 4G+GPS Device is waterproof and dustproof. The 4G+GPS Device and the level sensor are connected with special cables, so the level gauge and 4G device can work normally even if the vehicle is stalled.

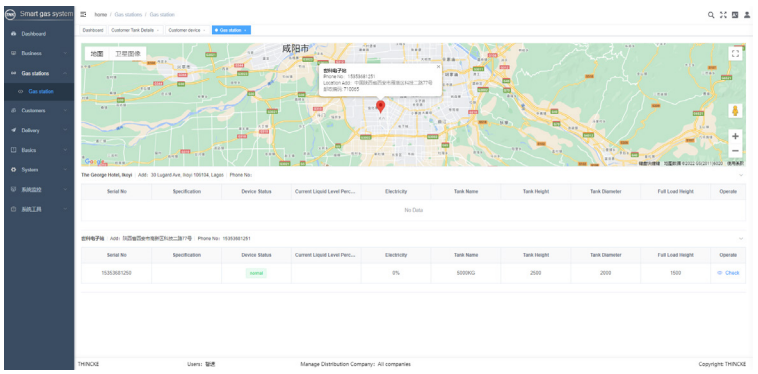


Demo http://fleet.zhisu.vip/







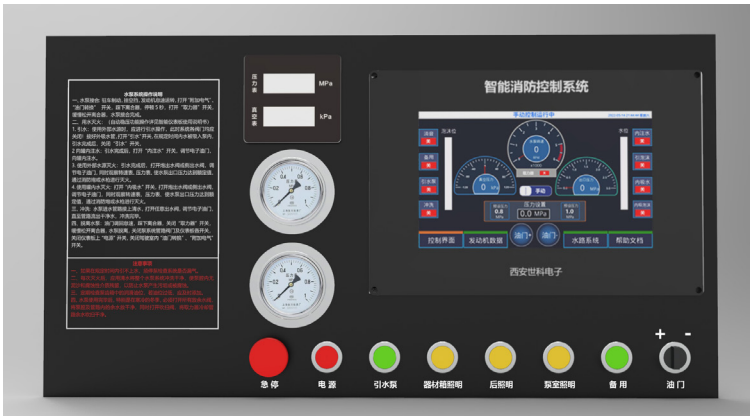


http://smartgas.zhisu.vip/

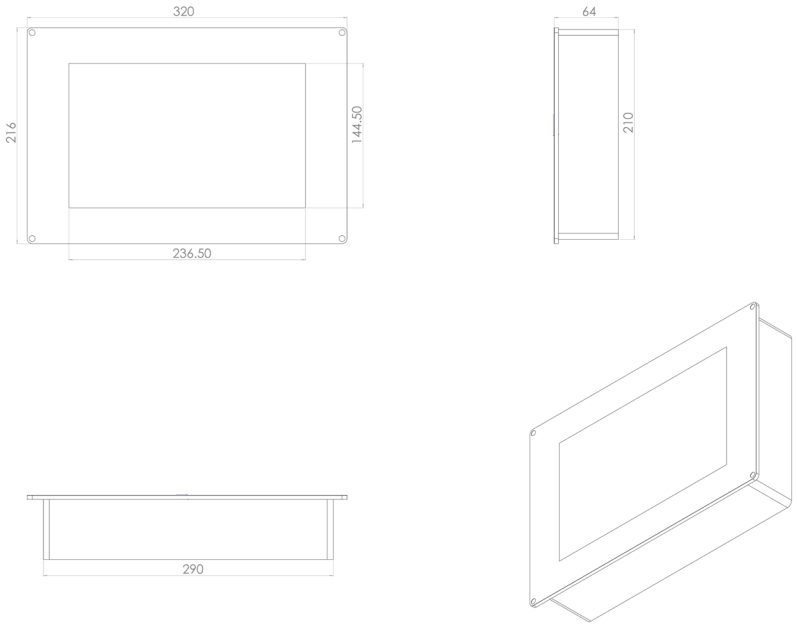
Fire truck intelligent control system changes the traditional fire truck pump operation, to achieve visualization, clear water flow control and more simplified intelligent pump operation.

The fire truck intelligent control system is an integrated total water control system, which can manage the pump, tank, inlet and outlet of the fire truck, etc. The fire truck Intelligent Control System replaces the fire truck’s pressure regulator and is responsible for opening and closing valves according to the operator’s Settings. You can control all pumps from a 10-inch touch screen display, eliminating the need for complex fire truck pump panels.

1 Interruption of flow data due to operator error is avoided.
2 Solve the problem of insufficient pressure for external drawing water or fire hydrant drawing water.
3 Real-time view of water pump and engine running status.
4 Replace manual operation when there are not enough firefighters to cooperate.
5 Simple and clear operation panel, quick start operation.



Power	DC24V
Working current	2.5A
Screen size	223.6mm*126.0mm (10.1'')
Screen material	TFT
Resolution	1024*600
Brightness	500cd/m^2
Protection grade	IP55
Vibration test	2G, 3 axis,Per 2 hours
Working environment humidity	≤ 95%RH
Operating ambient temperature	-40 ~ 80℃
Size	320mm*216mm*64mm
Size of hole	290mm*210mm
Weight	5.7kg



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