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QINGDAO ALPTEC SAFETY EQUIPMENT CO.,LTD.

Leading Manufacturer

of Overfill Protection & Grounding Systems



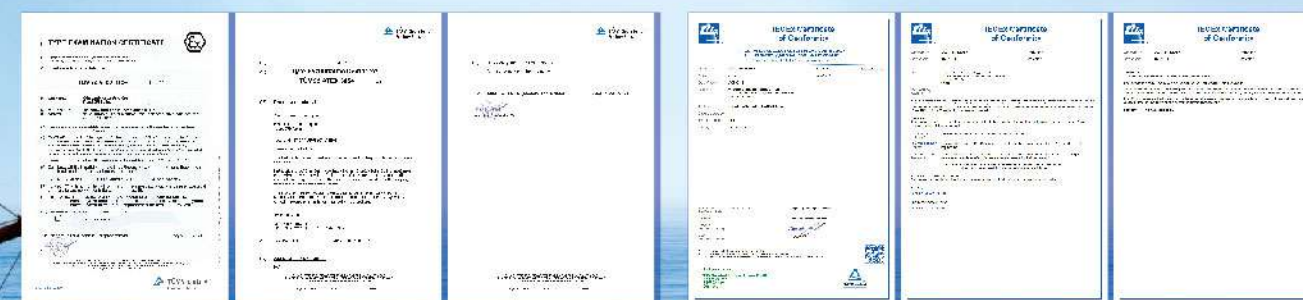
CMC TECHNOLOGIES

PTY LIMITED ACN: 085 991 224, ABN: 47 085 991 224

Engineering &
Industrial
Instrumentation

Phone: +61 2 9669 4000
Fax: +61 2 9669 4111
Email: sales@cmctechnologies.com.au
Web Site: <http://www.cmctechnologies.net.au>

Unit 19, 77 Bourke Road,
Alexandria, NSW, 2015
AUSTRALIA



The Leading Manufacturer of Overfill Protection & Grounding Systems in China

Established in 1996, Qingdao Alptec Safety Equipment Co., Ltd specialises in the design, manufacture, and supply of high-quality Overfill Protection as well as Static Grounding Systems, Coriolis Mass Flow Meters, Density Meters and Laser Methane Leak Detector for the chemical, petrochemical, oil and gas and process industries that transport, store, transfer and use flammable liquids, solvents or combustible liquids in hazardous areas.

Alptec is Sinopec and PetroChina's preferred brand and we have secured more than 50% of the market share in China. Internationally we began exporting in 2006 to Germany, Spain, USA, Canada, Australia&New Zealand, Korea, Singapore, Thailand, Vietnam, Mexico, Brazil, South-Africa, India, and many other countries.

We aspire to be your trusted supplier.

Safety Expert for Oil Storage & Transportation



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Static Grounding Solutions ➤

Static Grounding Monitoring Systems

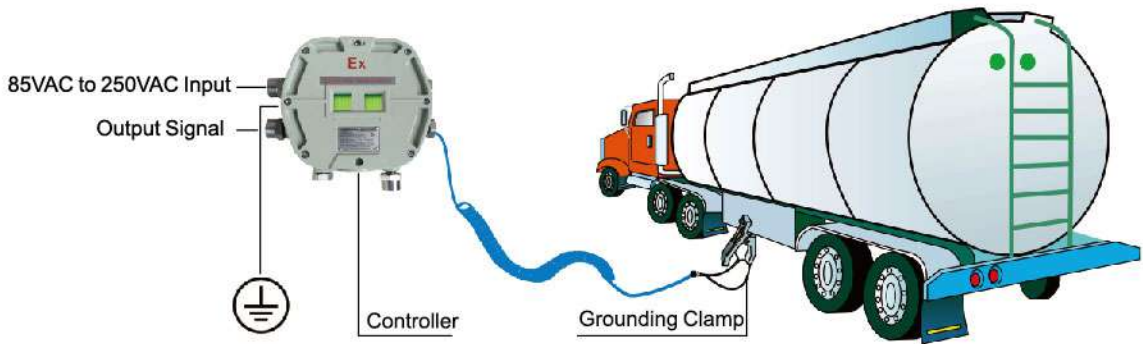
Model: SLA-S-Y

The “Static Grounding Monitoring System” functions as a part of an Overfill Protection & Earthing System. It provides a visual green light indicating a confirmed grounding condition of road tanker during the transfer of flammable and combustible materials. A red light indicates the absence of a dependable grounding. An interlock circuit inside the control panel will prevent pumps and equipment from starting until a satisfactory ground is established. The interlock circuit will also shut off pumps and equipment if the ground is lost during the pumping operation.



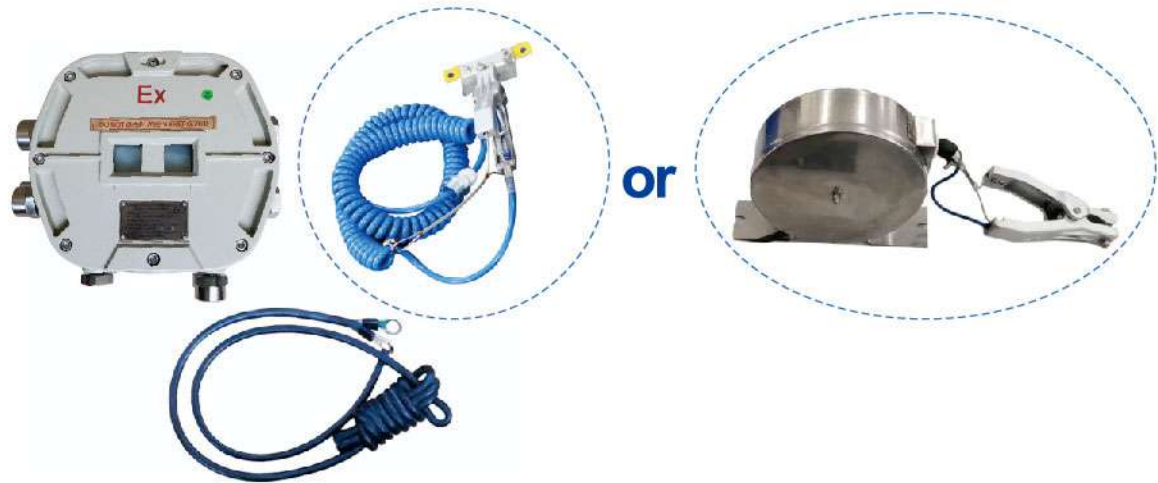
➤ Specifications

Input Power	85VAC to 250VAC 50Hz
Input Current	<60mA
Output Signal	On-off signal
Monitoring Set Point	10 ohms
Alarm	Visible alarm
Spiral Cable	Extendable to 5.3m (17.4ft.)
Output Safety Parameters	Um:250VAC,Uo:14.28VDC,Io:27.2mA,Po:97mW,Co:4.17μF,Lo:192mH
Indicator	Lamp (Green=satisfactory ground and red=no ground)
Ambient Temperature	-20°C to +55°C (-4°F to +131°F)
Eu-Type Examine Certificate No.	Presafe 16 ATEX 8909X
QAN Certificate No.	Presafe 16 ATEX 7744Q
Standard	EN 60079-0,EN60079-1,EN60079-11
Applicable Directive	2014/34/EU



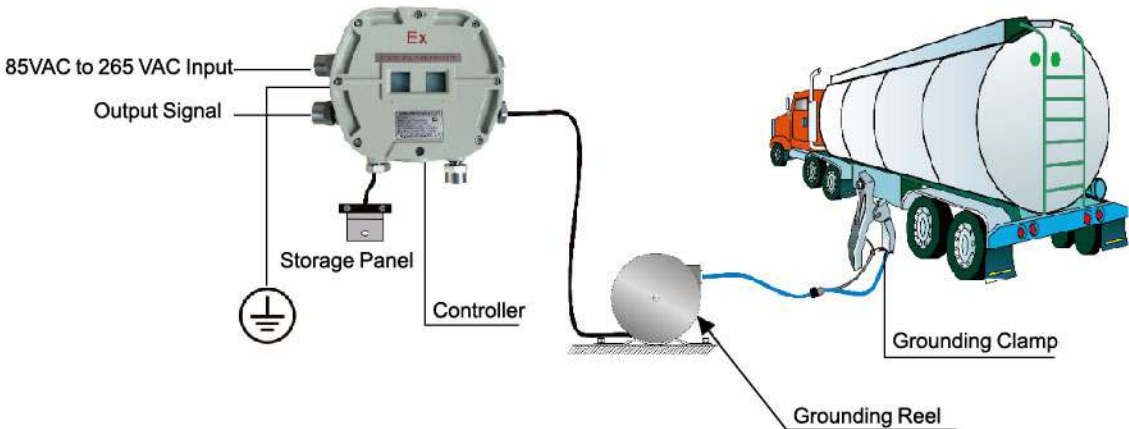
Model: SLA-S-Y

During fuelling, loading and unloading operations, the vehicles should always be grounded. The “Static Grounding Monitoring System” will automatically shut off the loading and unloading operations if the grounding is broken at any time during the operation.



➤ Specifications

	Spiral Cable Type	Reel Type
Input Power	220 VAC or 24VDC	85 VAC to 265VAC
Input Current	<60mA	<60mA
Output Signal	On-off signal	On-off signal
Monitoring Set Point	10 ohms	60 ohms
Alarms	Audible and visible alarms	Audible and visible alarms
Cable Length	Extendable to 5.3m (17.4ft.)	7m (23ft.)
Indicator	Lamp (Green=satisfactory ground and red=no ground)	
Ambient Temperature	-40°C to +60°C (-40°F to +140°F)	-20°C to +60°C (-4°F to +140°F)
Alarm Volume	>90dB	>90dB
Certification	ExdiaIIBT6 Ga/Gb	ExdbiaIIBT4 Gb



Static Grounding Clamps

In order to dissipate the electrostatic charge from various equipment, we have a wide range of static grounding clamps with cables that are all ATEX approved, certification: **II 2G Ex h IIC T5 Gb**

Model: SC-01

- Die-cast aluminum construction with 2 stainless steel points.
- Strong spring pressure allows the clamp to penetrate multiple layers of paint or corrosion build-up to ensure proper bonding.
- Suitable for grounding and bonding for a wide range of containers, drums and machinery.

Opening: 20 mm Size: 112mm X 80mm Weight: 140g



Model: SC-02

- Die-cast aluminum construction with 2 stainless steel points.
- The sensing clamp can be connected to an electronic apparatus via a two-core cable.
- Suitable for grounding and bonding for a wide range of tanker trucks and railcars.

Opening: 28 mm Size: 160mm X 86mm Weight: 295g



Model: SC-03

- Die-cast aluminum construction with 3 stainless steel points.
- The sensing clamp can be connected to an electronic apparatus via a two-core cable.
- Suitable for grounding and bonding for a wide range of tanker trucks and railcars.

Opening: 30 mm Size: 160mm X 86mm Weight: 300g



Model: SC-04

- Die-cast aluminum construction with brass jaws.
- Brass jaws are designed to allow proper contact onto unpainted surfaces, posts or thin materials.
- Suitable for grounding and bonding of refueling vehicles and aircraft.

Opening: 18 mm Size: 112mm X 80mm Weight: 160g



Model: SC-05

- 316L stainless steel construction with 3 stainless steel points.
- Ideal for use in the areas where high corrosion resistance is required.

Opening: 18mm Size: 160mm X 82mm Weight: 300g



Model: SC-06

- 316L stainless steel construction with 3 stainless steel points.
- Ideal for use in the areas where high corrosion resistance is required.

Opening: 28mm Size: 236mm X 93mm Weight: 510g



C Clamps

We make a series of stainless steel C clamps with the sizes from 3/4" to 1 1/2".

- Provide semi-permanent connections on flat materials.
- Can be produced to specific sizes.

Model	Size	Range	Weight
CC-01	3/4"	1mm to 15mm	114 g
CC-02	1 1/2"	1mm to 33mm	173 g



Pipe Clamps







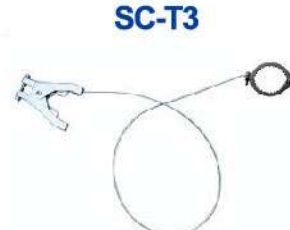

We make a series of bronze pipe clamps which can be adjusted from 1" to 3".

- The rugged design provides a positive connection to penetrate paint and rust.
- Equipotential connection for loading arms and pipes.
- Can be produced to specific sizes.

Model	Size	Pipe Range	Weight
PC-02	1"	33mm to 35mm	50 g
PC-03	1 1/2"	47mm to 50mm	150 g
PC-04	2"	59mm to 62mm	200 g
PC-05	2 1/2"	75mm to 78mm	260 g
PC-06	3"	88mm to 92mm	280 g



Grounding Assemblies

SC-L1  1 SC-01 clamp with 4m of spiral cable & lug	SC-L2  2 SC-01 clamps with 4m of spiral cable	SC-L3  1 SC-01 clamp with 4m of spiral cable & 1" pipe clamp	SC-L4  1 SC-01 clamp with 4m of spiral cable & 3/4" C clamp
SC-T1  1 SC-01 clamp with 1m of stainless steel wire & lug	SC-T2  2 SC-01 clamps with 1m of stainless steel wire	SC-T3  1 SC-01 clamp with 1m of stainless steel wire & 1" pipe clamp	SC-T4  1 SC-01 clamp with 1m of stainless steel wire & 3/4" C clamp

Static Grounding Clamp with Alarms

Battery Operated

The accumulation of static charges during the fuelling transfer process can lead to costly explosions, fire and personnel injury. The "Self-testing Grounding Clamp" with visible & audible alarms is designed to dissipate static charge accumulation and verify proper grounding. It is intrinsically safe and designed for use in hazardous locations.



Model: SA-YP (Aluminum Clamp)

Cable Length	5m (16.4ft.) spiral cable
Clamp 1	SA- Y (visible and audible alarms)
Clamp 2	SC-02

Model: SA-YF (Aluminum Clamp)

Cable Length	5m (16.4ft.) straight cable
Clamp	SA- Y (visible and audible alarms)
Lug	60A (SC35-10, Φ10MM)



Model: SA-YA (304SS Clamp)

Cable Length	5m (16.4ft.) spiral cable
Clamp 1	SA- YA (visible and audible alarms)
Clamp 2	SA-08



Model: SA-YD (304SS Clamp)

Cable Length	5m (16.4ft.) spiral cable
Clamp	SA- YD (special for drum)
Lug	60A (SC35-10, Φ10MM)

Features & Benefits

- Low energy consumption design makes battery replacement unnecessary during normal operation. Digitron resistance display.
- After 60 seconds of continuous alarm it will go to rest status and will return to normal in a closed circuit.
- The electrical circuitry is totally covered by epoxy resin, making it damp-proof, rust-proof, corrosion-proof and shock-proof.



Static Grounding Reels

Model: S-RL

The ATEX approved "Static Grounding Reels" have a self-retracting cable drum and an instant locking mechanism to prevent the cable from becoming tangled.

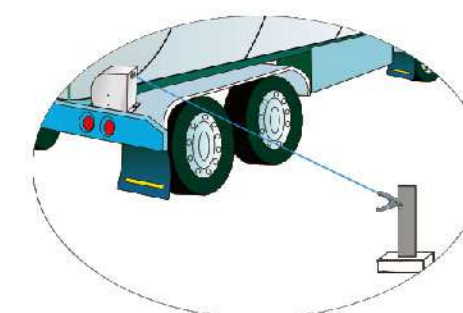
The Standard S-RL model includes a 7m (23ft.) polyurethane jacketed stainless steel cable. An ATEX approved, heavy duty grounding clamp (with replaceable stainless steel tips) is connected to the cable for a solid connection to the grounding surface. S-RL Reels are also available with 15m (49ft.) and 20m (65ft.) cable lengths.



CE Ex II 2G Ex h IIC T6 Gb

Features & Benefits

- Stainless steel housing and base plate.
- The sealed housing prevents the cable from being exposed to corrosive and harsh environments.
- The self-storing cable design prevents personnel from being exposed to trip hazards. The self-retracting cable mechanism keeps the cable stored in a safe, organized manner.
- An instant locking mechanism holds the cable at the desired extended length.
- Applicable Directive: 2014/34/EU



Static Grounding Reel with Alarms Battery Operated

Model: SA-YL

The model SA-YL includes all of the features included in our S-RL models with the following **special features**:

Alarm	Visible and audible alarms
Alarm Volume	>90dB (at 30cm)
Monitoring Set Point	60 ohms
Battery	Lithium battery (3.6V)
Clamp Cable Length	7m (23ft.)
Certification	ExiaICT4 Ga



Personal Electrostatic Eliminating Alarm

Red for Stop and Green for Go

Under certain conditions, a person's body can be electrostatically charged by friction and natural environmental conditions. The "Personal Electrostatic Eliminating Alarm" device is designed to prevent the accumulation and accidental discharge of static electricity from a person's body while providing audible and visible alarms.



Model: PS-Y

➤ Specifications

Monitoring Electrostatic Voltage	-15KV to +15KV
Alarm Voltage	>150V
Height	1.1m (3.6ft.)
Certification	ExibIICT4 Gb

➤ Features & Benefits

- Handle: Constructed of electrostatic conductive material.
- Static electricity from a person's body will be continuously discharged without any spark or discomfort.
- Provides constant monitoring with audible and visible alarms.



Model: PS-A2

The model PS-A2 includes all of the features included in our PS-Y model with the additional **special features**:

- Audible voice warning when people approaching.
- OLED Display indicates static voltage of a person's body.



Model: SD-Y

The model SD-Y includes all of the features included in our PS-Y model with the additional **special features**:

➤ Features & Benefits

- Height 1.5m (4.9ft)
- Real-time monitoring of static electricity within a 2m radius of the sensor.
- Active voice reminder to eliminate static electricity.
- Non-contact monitoring, convenient and efficient.

Overfill Protection Solutions ➤

ATEX & IECEx Approved High Level Alarm Battery Operated

Model: UZK-A  

The "High Level Alarm" provides audible and visible alarms for monitoring levels of liquids. It can be directly mounted on a fuel tank to provide a warning of a full tank high level. Optionally the alarm panel may be remote mounted from the sensor. The powerful audible alarm can be heard over background sound, for example, pumping equipment. The "High Level Alarm" is weather proof and can be mounted in wet environments.



CE 2460

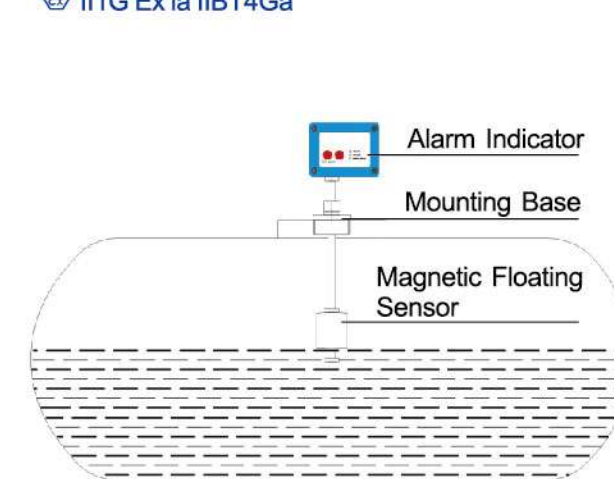
 II1G Ex ia IIBT4Ga

➤ Specifications

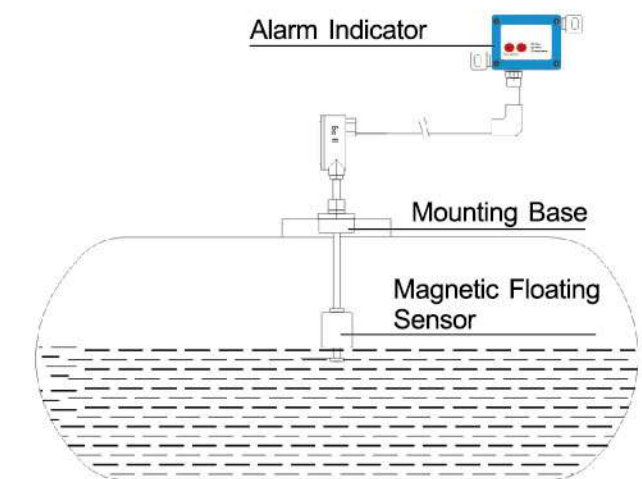
Battery	6VDC (4XAAA)
Alarms	Audible and visible alarms
Alarm Volume	≥110dB
Ambient Temperature	-40°C to +60°C (-40°F to +140°F)
Sensor	Float sensor
EU-Type Examination Certificate No.	Presafe 18 ATEX 13423X
IEC Certificate No.	IECEx PRE 18.0084X
Applicable Directive	2014/34/EU

➤ Features & Benefits

- Low battery alarm.
- Adjustable sensor level.
- A standard 2 inch BSP fitting provided for mounting. Optional mounting fittings are available upon request.



Integral Configuration



Remote Configuration

Overfill Protection System

Model: SLA-S-Y For Top Loading

The “Overfill Protection Systems” are designed to detect a liquid point level signal from an overfill sensor. The system provides an automatic signal to the rack automation equipment to shut-off the flow of liquid, and warn of an impending overflow condition of a tank truck.

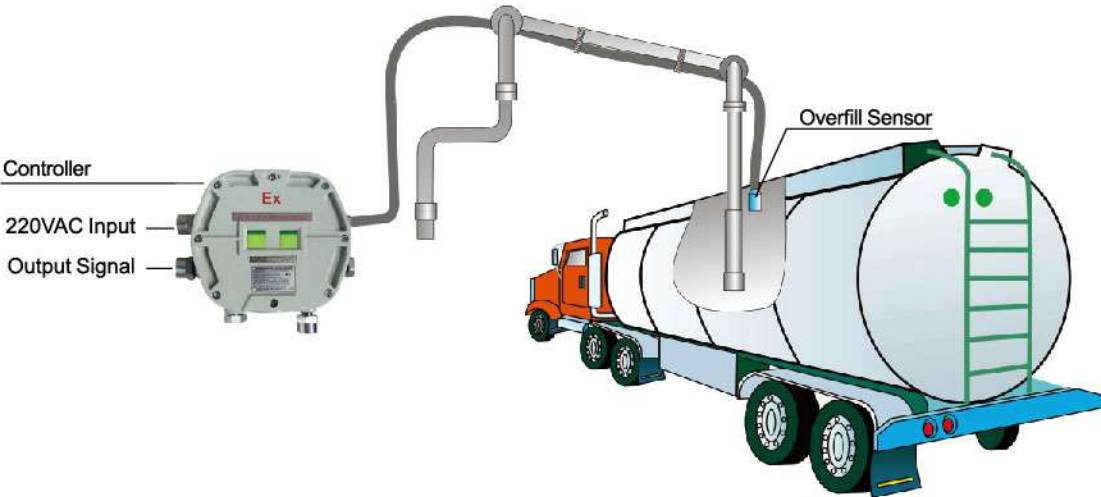


Specifications

Input Power	220VAC±10%
Input Current	<15mA
Output Signal	On-off signal
Sensor Cable Length	8m (26ft.)
Ambient Temperature	-40°C to +60°C (-40°F to +140°F)
Alarm Volume	>90dB
Certification	ExdialIBT6 Ga/Gb

Features & Benefits

- Audible and visible alarms.
- The overfill sensor has a continuous self-check and alert feature to ensure the system is working properly.



Overfill Protection & Grounding Systems

The “Overfill Protection and Grounding Systems” are designed for top loading of road tankers, rail cars, etc. In the event of an overfill condition, the overfill sensors will send a signal through the output relay to the terminal automated loading system to shut down the loading operation. The systems provide overfill protection as well as grounding verification.

Model: SLA-S-Y For Top Loading

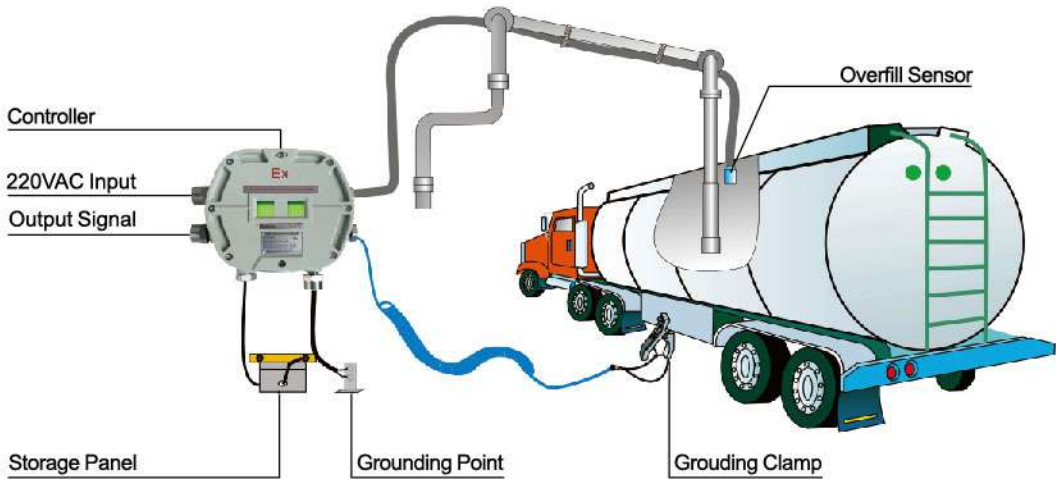


Specifications

Input Power	220VAC±10%	Spiral Cable	Extendable to 5.3 m (17.4ft.)
Input Current	<15mA	Sensor Cable Length	6m (20ft.)
Monitoring Set Point	10 ohms	Ambient Temperature	-40 °C to +60 °C (-40°F to +140°F)
Output Signal	30V DC, 10A /250V AC, 10A	Alarm Volume	>90dB
Ingress Protection	IP66	Certification	ExdialIBT6 Ga/Gb

Features & Benefits

- Audible and visible alarms.
- Upon the loss of a ground connection or an overfill condition, the system will send a signal to immediately shut off the loading operation.
- The overfill sensor has a continuous self-check and alert feature to ensure the system is working properly.



The ATEX approved “Overfill Protection and Earthing Systems” are designed for bottom loading of road tankers, rail cars, etc. In the event of an overfill condition, the overfill sensor will send a signal through the output relay to the terminal automated loading system to shut down the loading operation. The systems provide overfill protection as well as grounding verification.

Model: SLA-S-Y *For Bottom Loading*



CE 2460

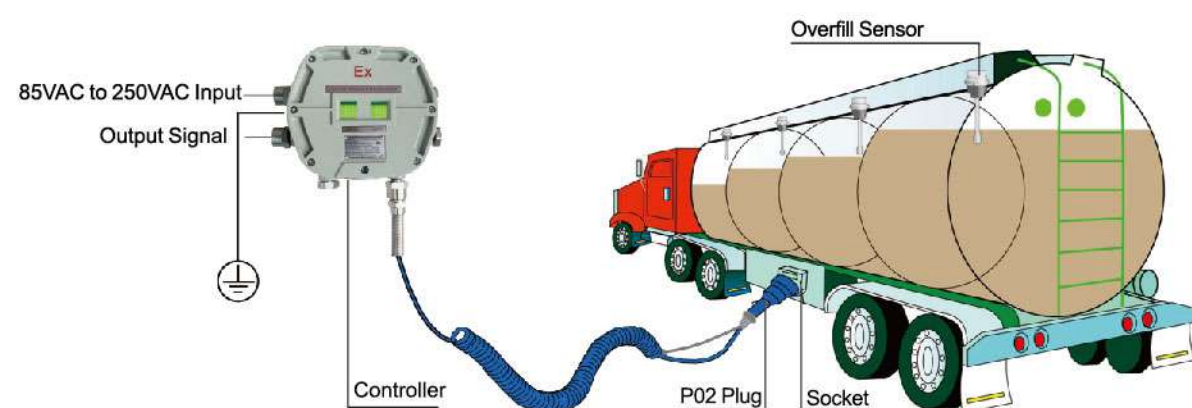
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➤ Specifications

Input Power	85VAC to 250VAC 50Hz
Input Current	<60mA
Alarm Type	Visible alarm
Spiral Cable	Extendable to 8m (26ft.)
Output Safety Parameters	Um:250VAC,Uo:21.42VDC,Io:149mA,Po:798mW,Co:1.19μF, Lo:6.4mH (for overfill sensor) Um:250VAC,Uo:14.28VDC,Io:96.2mA,Po:343mW,Co:4.28μF, Lo:15.4mH (for earthing sensor)
Ambient Temperature	-20°C to +55°C (-4°F to +131°F)
Eu-Type Examination Certificate No.	Presafe 16 ATEX 8909X
QAN Certificate No.	Presafe 16 ATEX 7744Q
Applicable Directive	2014/34/EU

➤ Features & Benefits

- Designed and manufactured according to API standards.
- Compatible with overfill sensors and sockets that meet API standards.
- Monitors up to 6 overfill sensors.



Overfill Sensors

Overfill sensors are designed to prevent overfill of liquid petroleum products.

Model: UZK-DM

➤ Features & Benefits

- Meets API Recommended Practice.
- Interchangeable with optical sensors that meet API standards.
- Easy to adjust.
- Optical sensor.



Socket & Grounding Bolt

Socket and grounding bolt are designed to connect the Overfill Protection & Earthing Systems to the tank truck.

Model: S03L(Self-testing)

➤ Features & Benefits

- Checks the function of the overfill sensors and the earthing of the ground bolt. Performs the self-test of the overfill and electrostatic function without the connection of the associated apparatus.
- LEDs provide a visual indication of the status of each tank compartment.
- Stainless-steel contact pins.
- Meets API Recommended Practice.
- Audible and visible alarms.
- Connect up to 5 overfill sensors.
- Durable housing.
- Certification: Exia IIB T4 Ga



Model: S02L

➤ Features & Benefits

- Stainless-steel contact pins.
- Connect up to 6 overfill sensors.
- Meets API Recommended Practice.
- Durable housing.



Batch Controller ➤

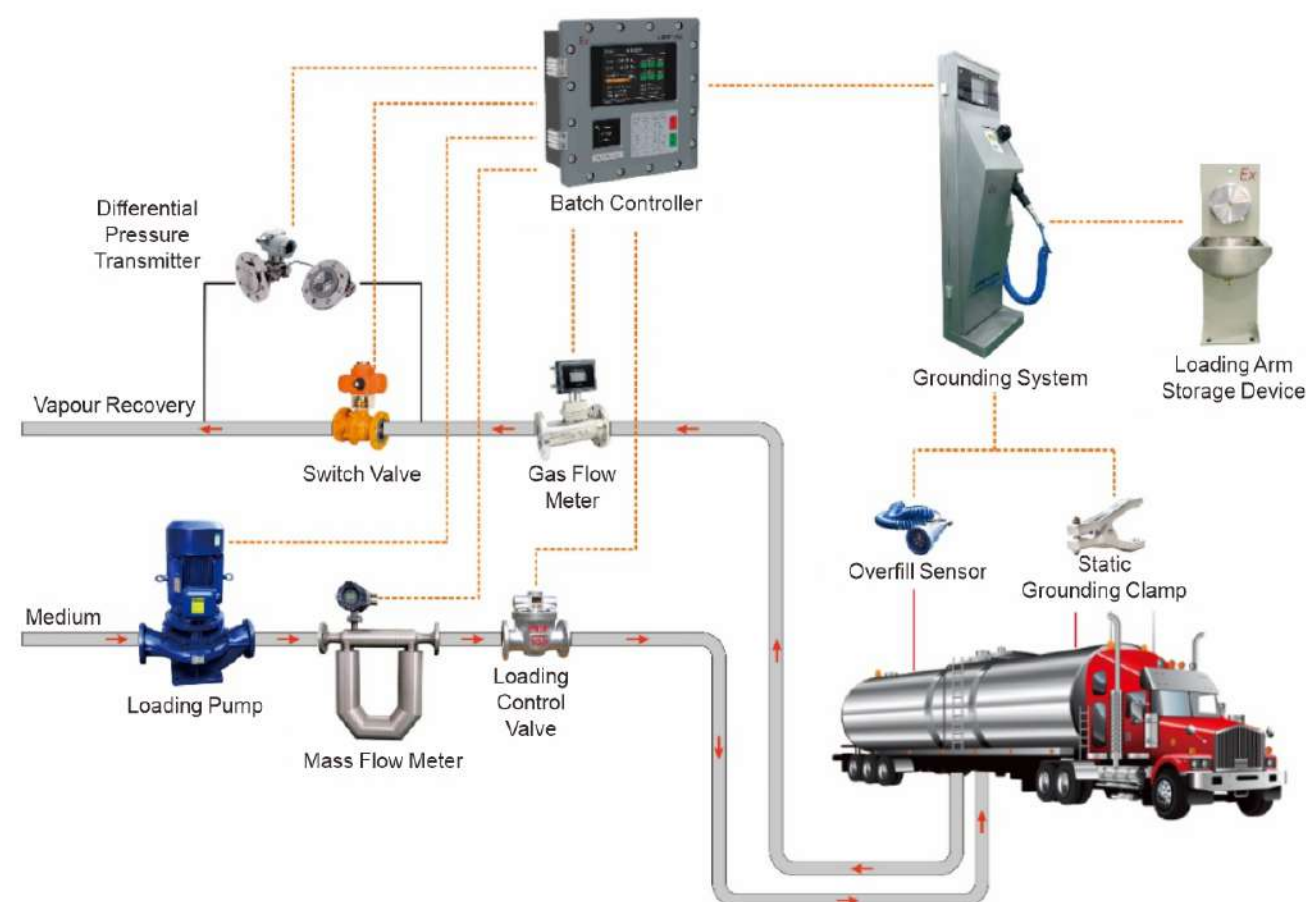
Model: ALTRON-3000

As the control core in the quantitative loading system, the Batch Controller is matched with the Mass Flow Meter, Safety Interlock Process Control System, Control Valve, Loading & Unloading Pump, Host Computer, etc. at the loading and unloading site. When the loading or unloading reaches the set value, it automatically stop loading.



➤ Specifications

Input Power	220VAC±10%	Working Mode	Stand-Alone/Network Optional
Setting Range	0-999999Kg/L	Operation Humidity	≤85%RH(No Condensation)
Function Keys	21 Keys	Ambient Temperature	-40°C to +60°C(-40°F to +140°F)
Size	350*350*200(mm)	Electrical Interface	G3/4(6 groups)
Ingress Protection	IP65	Certification	ExdbIBT6 Gb



Coriolis Mass Flow Meter ➤

Model: K-Series

K-Series Coriolis Mass Flow Meters provide unmatched flow and density measurement performance to deliver the ultimate control and confidence in your most complex and challenging liquid, gas, and slurry applications. Available with the broadest range of communication and connectivity options, there are two types: Triangle type and U-type. Widest selection of safety, country, and custody transfer approvals ensure high precision and accurate measurement.



➤ Specification

Power supply (AC / DC compatible)	AC Power supply	(85~265) VAC, 50/60 Hz
	DC Power supply	(18~100) VDC
Pressure resistance and sealing	Perform compressive strength test on the pressure part of the flow meter, the test medium is water. The test pressure is 1.5 times the nominal pressure, which lasts 5 minutes, and there is no penetration or leakage at each connection.	
Analog communication (Two optional output channels)	It can be set according to site requirements: two-way current communication, two-way pulse communication or one-way current communication and one-way pulse communication.	
Pulse output	Output range	(0 ~ 10) kHz
	Basic error	± 0.01%
Current output	Temperature effect	± 0.001% F.S / °C
	Output range	(4 ~ 20) mA
Digital communication	Basic error	± 0.05%
	Temperature effect	± 0.005% F.S / °C
Power consumption	RS485 interface, Modbus communication protocol, Baud rate can be selected: 9600, 19200, 38400, etc. Multi-machine communication and bus connection are available.	
	BPM transmitter maximum power ≤11W	

➤ Features & Benefits

- High quality accuracy, measurement error is less than ± 0.1%.
- High density accuracy, measurement error is less than ± 0.0005g / cm³.
- High temperature accuracy, measurement error is less than ± 0.2°C.
- Good zero stability to ensure long-term stable operation.
- Fast response time, suitable for small batch and short time filling.
- Wide range ratio up to 20: 1.
- The designed service life is 10 years.

Positive Displacement Meter ➤

Model: ECH series

The ECH series screw flowmeter is a very accurate double-shell liquid flow measurement device. The main body consists of a pair of spiral rotors and three chambers between the shells. It generates a high-resolution output signal proportional to the liquid flow rate through the flowmeter via a sensor that is not in contact with the liquid. The signal is shaped and transmitted to auxiliary equipment by an internal preset amplifier, and the data can be indicated locally or remotely transmitted to the secondary meter through a transmitter.



➤ Specification

Model		Linear Accuracy	Repeatability	Viscosity Range	Operation Temperature	Flow m³/h		Nominal K-coefficient P/m³	Pulse Equivalent L/p
						Min.	Max.		
ECH3	Standard	±0.1%	0.02%	0.2~1000cSt	-40°C~75°C	10	100	42000	0.1
	Extend	±0.15%				7	115		
ECH4	Standard	±0.075%				16	160	25000	
	Extend	±0.15%				10	205		
ECH6	Standard	±0.15%				23	230	11000	

➤ Features & Benefits

- High precision.
The unique double-shell structure design can reduce the adverse effects of the external environment. The maximum linear accuracy is ±0.05% and the maximum repeatability is 0.01%.
- Designed life is 10 years.
Using unique screw principle, no slip inside moving, vibrating or reciprocating parts, high stability and long life, almost maintenance free.
- High range ratio.
With a range ratio of up to 1:10, under low flow conditions, the metering performance is also excellent.
- High pulse resolution.
It output the signal via a high resolution proportional generated via a sensor that is not in contact with the liquid that are proportional to the liquid flow rate through the flow meter.
- High flexibility.
Minimal pressure loss, can be installed vertically or horizontally, and the metering performance is not affected.
- Rich display of the transmitter.
The meter head adopts electronic display, which is easy to read. It can display cumulative flow, single-day flow, single flow, and instantaneous flow. Signal output : pulse + RS485.

Storage Tank Protection Solutions ➤

Tuning Fork Level Switch

Model: UZK-Y

Tuning Fork Level Switch is a high-reliability control switch dedicated to liquid level measurement. The length of the fork body is only 40mm, which is suitable for liquid level measurement in narrow spaces of pipes. The fork body is precisely tuned, and the measurable density is as low as 0.5g/cm³.



Model: UZK-Y-01

Applicable Liquids	Density	Larger than 0.5g/cm³
	Viscosity	0.1~10000mPa.s
	Flow Rate	Up to 6m/s
Probe Parameters	Vibration Frequency	1000Hz
	Fork Body Length	40mm
Precision	Measurement Deviation	±1mm
	Delay	2mm
	Repeatability	0.1mm
Switching Delay	Contact with Materials	0.5s
	No Materials	1s
Power Input	Relay Type	20~250V AC/20~72V DC
	Power Consumption	AC, 1~8VA; DC, 1.5W
Signal Output	Relay	DPDT, 5A/253V AC/24V DC
	Three-wire	PNP Signal
Environmental Conditions	Process Pressure	-1~100bar
	Process Temperature	-50~+300°C
	Environmental Temperature	-40~+70°C
Safety Certification	Protection Class	IP66/IP67/IP68
	Explosion-proof Grade	Flameproof Type: Ex db IIC T6 Gb Intrinsic Safety: Ex ia IIC T6 Ga
Material	Flange	316L, 316L Coating Enamel, 316
	Fork Body	Coating ECTFE, 316L Coating PFA



Model: UZK-Y-02

Based on the UZK-Y-01 Tuning Fork Level Switch, external magnet debugging and frequency display are added.

- External magnet debugging: No need to operate the meter with opening the cover. The meter tests can be finished simply, safely, and quickly in daily operation activities.
- Frequency display: It helps to judge the working state or fault state more conveniently and intuitively, and save you plenty of time in identifying the hazards. In addition, it comes with a three-color light display and makes it easy to judge the working status of the meter from a distance.

Retractable Grounding Reel for Floating Roof Tanks

Model: RGR  **IECEX**

The “Retractable Grounding Reel” (RGR for short) is designed to reduce the risk of lightning damage and fire by creating a low-impedance bond between the floating roof and tank shell. The lightning current and bound charge will be effectively and rapidly dissipated to earth upon a lightning strike. Compared with the conventional bypass conductor, it will effectively decrease the possibility of a lightning-induced fire, and make it more reliable and safe.



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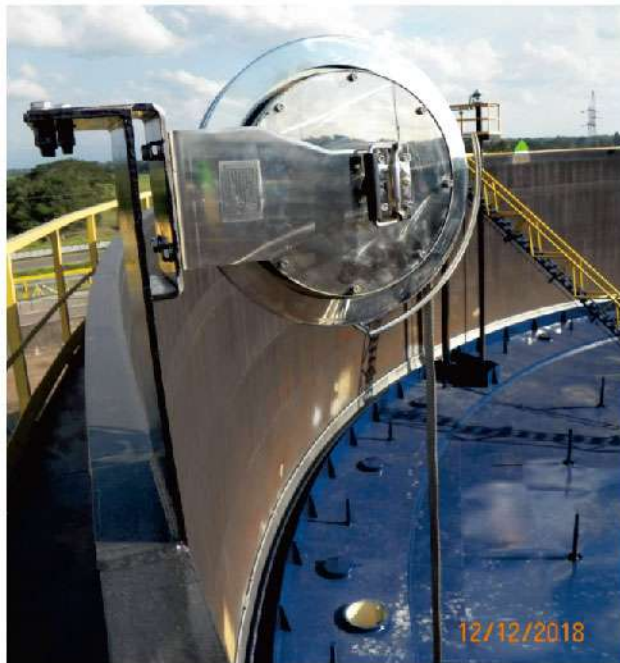
Features & Benefits

- Waterproof.
- 316L stainless steel housing for corrosion resistance.
- Pre-Tensioned: The RGR is pretensioned at the factory, so no on-site tensioning is required.
- Double braided cable. The inside copper cable is protected by the SS cable outside, durable and corrosion resistance.
- China Patent No.: ZL 2016 2 1012793.X
- Applicable Directive: 2014/34/EU and IECEx

Materials	
Housing	316L stainless steel
Spring	301 stainless steel
Cable	Double braided cable 2880/34
	Tinned braided copper cable (Inside layer)
	Braided 304 SS cable (Outside layer)
	Cross-sectional area 50²mm
Cable Length	18m (24.4m is available)
Total Resistance	<0.03Ω

Weight & Dimensions	
Net Weight	37.0 kg
Shipping Plywood Case	8.0 kg
Total Weight	45.0 kg
Overall Dimensions	58*55*40 cm

Tank Circumference, meters	Tank Diameter, meters	Quantity of Required RGR's
≤60	≤19.10	2
≤90	≤28.65	3
≤120	≤38.20	4
≤150	≤47.75	5
≤180	≤57.30	6
≤210	≤66.84	7
≤240	≤76.39	8
≤270	≤85.94	9
≤300	≤95.49	10
≤330	≤105.04	11
≤360	≤114.59	12
≤390	≤124.14	13
≤420	≤133.69	14
≤450	≤143.24	15
≤480	≤152.79	16
≤510	≤162.34	17
≤540	≤171.89	18
≤570	≤181.44	19
≤600	≤190.99	20



Reference

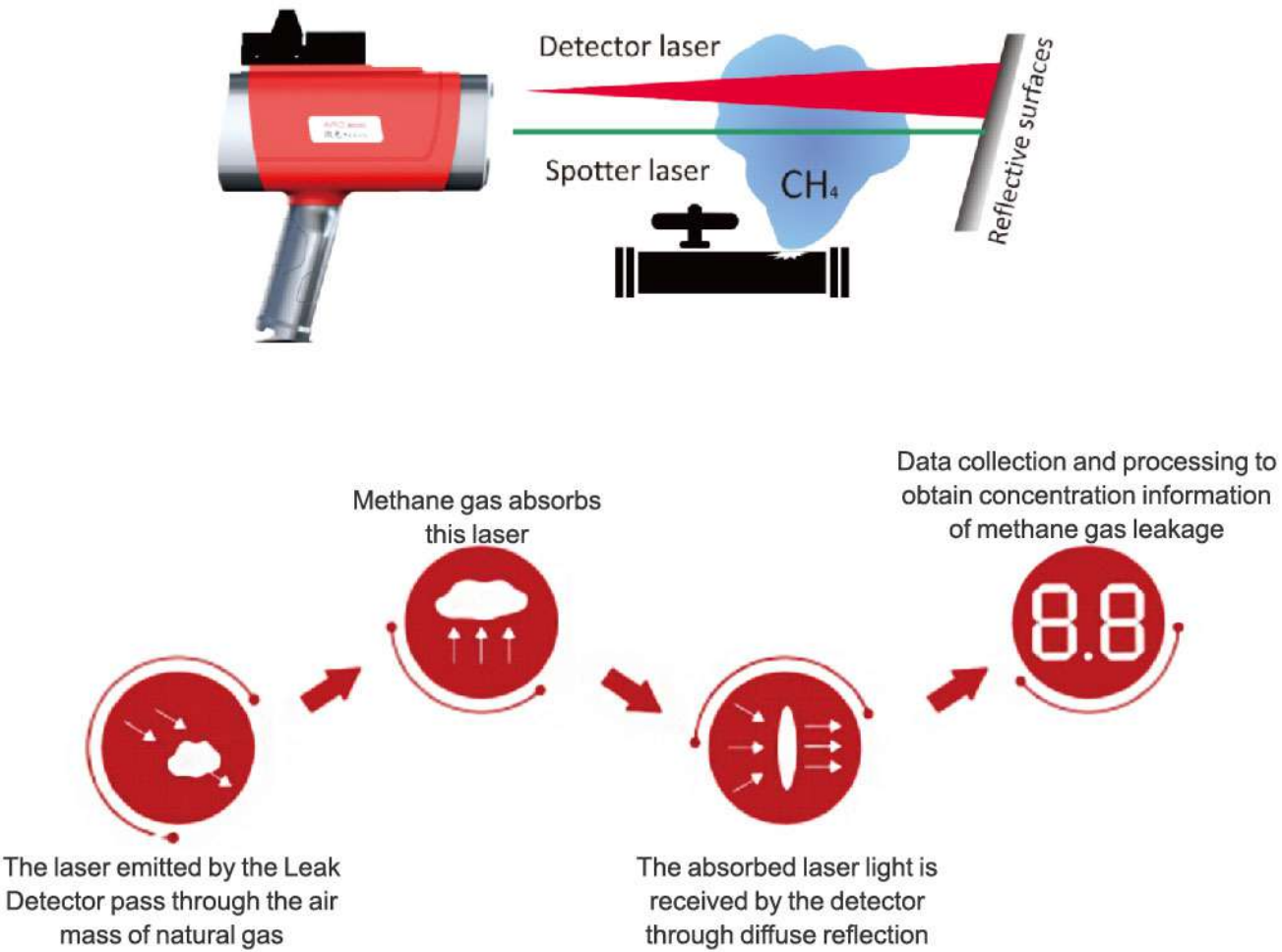
API Recommended Practice 545 First Edition, October 2009
 Item 4.2.1.2.2 Number, Length and Electrical Resistance
 The tank floating roof shall be bonded to the tank shell by direct electrical connection through an appropriate number of bypass conductors. Each conductor, including connections, shall have a maximum end-to-end electrical resistance of 0.03Ω. The bypass conductors shall be of the minimum length necessary to permit full movement of the floating roof. Bypass conductors should be evenly spaced not more than every 30 m (100 ft) around the tank circumference with a minimum of two.

Remote Methane Leak Detector ➤

Model: ARD3000

ARD series Remote Methane Leak Detector uses advanced TDLAS technology to make use of diffuse reflection of irradiated laser light on the surface of the object and absorption of specific wavelength laser light by methane gas, which can quickly achieve remote detection of methane gas, especially suitable for various leak detection occasions where people cannot access.

➤ Principle



➤ Features

- Higher detection sensitivity, so that tiny leaks can be detected.
- Faster response speed, more suitable for capturing fleeting tiny methane air masses during mobile inspections.
- Built-in self-calibration air chamber, no manual calibration required.
- Longer detection distance, adapt to high-rise urban gas environment.

➤ Specifications

Model	ARD 3000	ARD 4000	ARD 4100
Picture			
Measurement Range	0 ppm·m to 100000 ppm·m		
Sensitivity	2.5 ppm·m	3 ppm·m	5 ppm·m
Response Time	0.05s		
Detection Distance	≥200 m	200 m	150 m
Detector Laser	Class I		
Spotter Laser	Class III R		
Aiming Method	Green spotter laser and sight(Internal power supply, no need to replace the battery)		
Ingress Protection	IP66		
Explosion Proof Classification	Exib II A T4 Gb	Exib II C T4 Gb	Exib II C T4 Gb
Operating Temperature	-20° to 50° C		
Battery Operating Life	12hours		
Distance Measurement Mode	Laser real-time distance measurement	No	No
Power	Replaceable Lithium battery		
Size	201mmx76mmx248mm	198mmx131mmx58mm	198mmx131mmx58mm
Instrument Weight	0.75 kg	0.55 kg	0.55 kg
Display Screen	2.3 inch high brightness LCD	1.8 inch high brightness LCD	1.8 inch high brightness LCD
Inspection Software	IOS and Android, PC client end		

Density Meter ➤

Model: DSM-PN

The Portable Density Meter is designed for density and temperature measurements of any pure liquids directly in tanks, without sampling, at the depth up to 30 meters.

➤ Advantages

- Density accuracy: $\pm 0.0003 \text{g/cm}^3$
- Temperature accuracy: 0.1°C
- No sampling required
- Direct density measurement
- Automatic temperature compensation
- Local results storage and wireless data transfer
- At any depths up to 30 meters



Model: DSM-HM

Hand Held Digital Density Meter is a precision instrument for measuring liquid density and temperature. It quickly measures the density and temperature and convert the standard density at the same time with only 1L sample.

- Measuring density range: $0.65 \text{g/cm}^3 \sim 1.0 \text{g/cm}^3$
- Measuring temperature range: $-40^\circ\text{C} \sim 85^\circ\text{C}$
- Density accuracy: $\pm 0.0003 \text{g/cm}^3$ or 0.0005g/cm^3
- Temperature accuracy: $\pm 0.1^\circ\text{C}$
- Sample size: 1L
- Internal storage: 5000 measurement results



Model: DSM-G

Portable Density Meter (U-shaped Vibrating Tube) is a precision instrument for measuring liquid density, temperature, concentration and specific gravity. The density and temperature can be quickly measured in a few seconds with 2ml sample, and converted into standard density, concentration and specific gravity at the same time.

- Measuring density range: $0 \text{g/cm}^3 \sim 2.0 \text{g/cm}^3$
- Measuring temperature range: $0^\circ\text{C} \sim 55^\circ\text{C}$
- Density accuracy: $\pm 0.001 \text{g/cm}^3$
- Temperature accuracy: $\pm 0.1^\circ\text{C}$
- Sample size: 2ml
- Internal storage: 5000 measurement results



Sister Companies ➤

Qingdao Autodisplay Co., Ltd.

Price sign for gas station
www.pricessigns.com

Qingdao AOBO-environment Technology Co.,Ltd.

Filter for fuel dispenser
www.aobo-e.com

Qingdao Aubon Instrument Co., Ltd.

Level gauge for tanks
www.aubon.net

Qingdao Add Value Flow Metering Co., Ltd.

Mass flow meter
www.addvalueflow.com

Qingdao Aotons Technology Co.,Ltd.

Flexible bollard& guard rail
www.aotons.com

Qingdao Allred Electronics Co.,Ltd.

Laser methane leak detector
www.allredgd.com

Qingdao Aopack On Demand Packaging Co., Ltd.

Box making machine
www.aopackmachine.com

Qingdao Kingon Medical Science and Technology Co., Ltd.

Portable oxygen concentrator
www.kingonmed.com

Qingdao Youmeng Home Furnishing Technology Co.,Ltd.

No-pressure pillow
www.ueesleepy.com