

THE LEVEL BEST

Discover the market leaders in portable gauging and sampling for marine applications



Honeywell



With more than 30 years' experience in the industry, Honeywell Tanksystem has a deep understanding of the challenges faced by seafarers, marine inspectors and vessel operators.

Markets are volatile, there's pressure on charter prices and safety, environmental regulations continue to get stringent. Long work hours and unpredictable schedules are a daily reality. To meet these demands and operate effectively, professionals need tools they can trust.

Honeywell Tanksystem is the world's leading supplier of portable level gauging and sampling equipment in the marine environment. You can find our equipment being used on 60% of the global tanker fleet.

KEEPING YOU IN COMPLIANCE

Honeywell Tanksystem instruments are compliant with a wide range of national and international regulations and standards, as well as best practices in major oil companies for meeting all common requirements:

Use in the presence of explosive gas, hazardous areas and zone 0 explosive atmosphere, compliant with FM in U.S.A, ATEX and IECEx in the rest of the world

Gauging points on tanks, meeting requirements under U.S.A. 33CFR157.128 and API MPMS2-8B, IMO MARPOL 73/78 Annex to Resolution 15

Open, restricted and closed sampling, in accordance with IMO IBC Code, U.S. 46 CFR 155.15.10, API MPMS 17-2, API MPMS 3.1A / 8.1 / 17-2 / 17-11, ISO 4512 and 3170

Preventing electrostatic discharges from connection valves and with the Onecal grounding clamp to comply with ISGOTT (International Safety Guide for Oil Tankers and Terminals).

Providing ullage measurement accuracy, according to API MPMS (American Petroleum Institute, Manual of Petroleum Measurement Standards) 3-1A

Temperature measurement accuracy, as set out in API MPMS Chapter 7

Interface Measurement accuracy, complying with MARPOL 73/78, Annex 1, Chapter 2, Regulation 15, Sub-section (3) (b) and IMCO resolution MEPC.5 (XIII)

Dipping to test tank bottoms after crude oil washing, meeting MARPOL 73/78 Annex to Resolution 15 – Subsection 4.4 requirements.

Oxygen check before crude oil washing under MARPOL 73/78 Annex to Resolution 15 – Subsection 6.6

Direct verification of tank pressure, as in MARPOL 73/78 Annex to Resolution A.446 (XI) – Subsection 4.4.4

Oil sampling under API MPMS Chapter 8.1



HERMetric portable sampling equipment is used with liquid tanks, including oil in cargo tanks and water from ballast tanks, to capture samples representative of the whole content



HERMetric deck valves support all portable equipment with the HERMetric quick connector and ensure decades of safe and reliable operation in the worst environment conditions



HERMetric accessories provide the necessary tools for compliance with IMO requirements on Tanker Safety and Pollution Prevention, 1978 - resolution A.446(XI).



HERMetric Onecal is an intrinsically safe portable digital thermometer for taking open measurements in hazardous environment

Professionals across the world rely on the safe, easy to use, reliable and precise tools in our broad portfolio

HANDS ON: ACCURATE READINGS FOR A SMOOTHER PROCESS

Honeywell helps avoid disputes while measuring final values during custody transfer with the Weights & Measures approved manual gauges.

Unlike other level measurement methods, our portable gauges have no dead zones, offer the same accuracy over the whole range, and are not influenced by foam or vapor. In applications where small errors

have a big impact, they offer highly accurate readings. Quick to calibrate, the gauges are highly resistant to drift, providing long-term reliability.

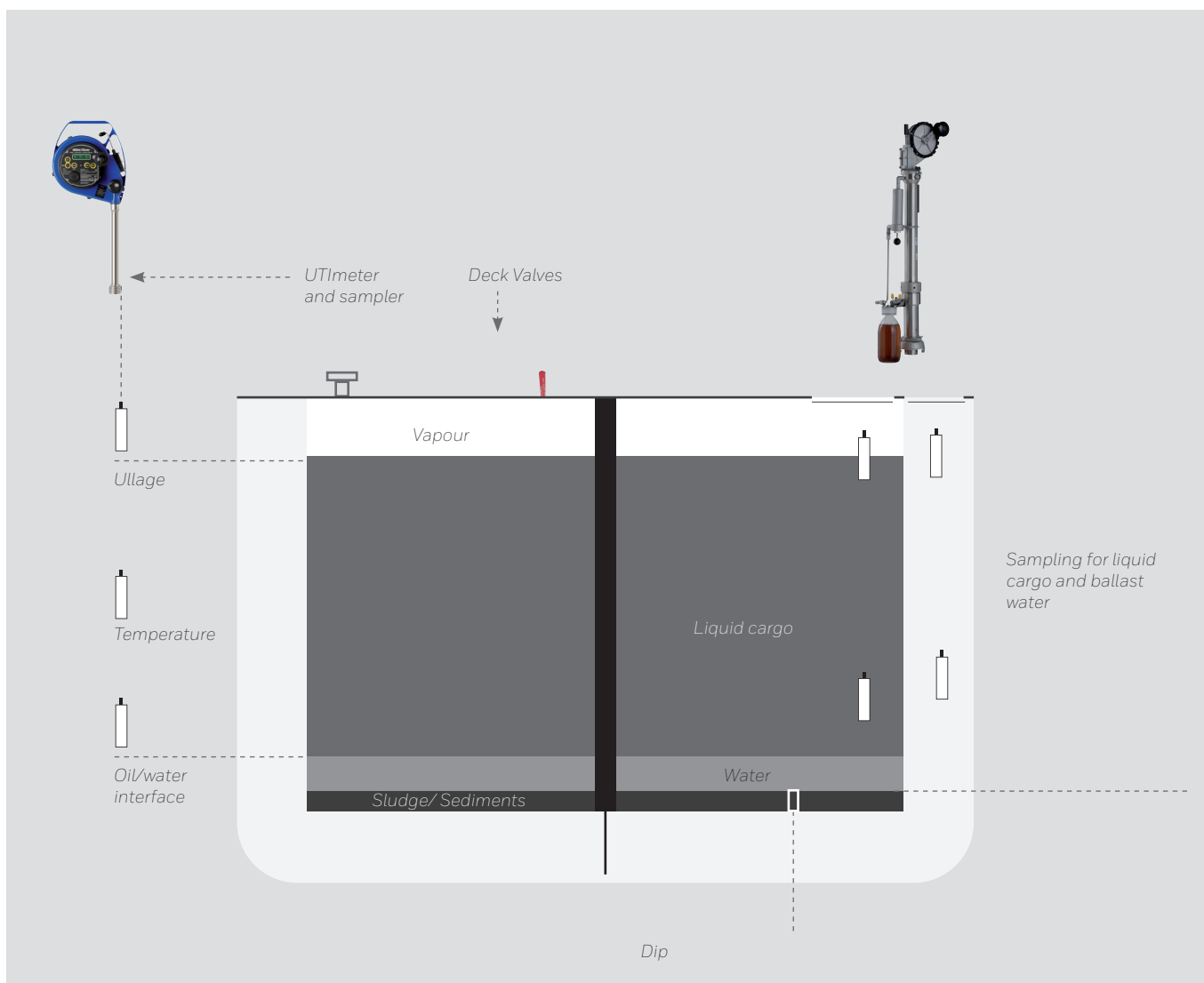
With built in temperature and interface measurement, Honeywell gauges are used in a variety of applications, including topping-off monitoring and calibration of automatic level gauging systems.

Our portable gauging products are used on a wide range of marine vessels, some of which are chartered for carrying very expensive chemical cargo.

The popular user vessels are:

- Tankers
- Barges
- Floating Production and Storage Offshore ((FSPOs)
- Offshore supply vessels
- Other ships which need to gauge and sample bunker oils, tanks, service tanks and ballast water tanks

Apart from marine vessels, our portable gauges are also used on non-moving oil related marine infrastructure like jack up rigs and storage terminals.



THE COMPLETE PACKAGE

Honeywell combines three measurements in one easy-to-use package providing a powerful, flexible solution for manual gauging with confidence:

Ullage measures the distance between the liquid level and the measurement point to give the height of the free space above the liquid – the foundation of accurate measurement of the product.

Interface measures level of water at the bottom of the tank to ensure accurate interface detection with oil or chemical; for discharging the contents of slop tanks safely without any release of hydrocarbons; and to comply with IMO regulations.

Temperature measurement has a profound impact on levels. A 1°C change will vary the hydrocarbon volume by 0.1%. Our proprietary design sensors are accurate to 0.1°C, totally stable in time, and extremely quick to stabilize, saving up to 30% of the time for a full cargo inspection, compared to competitive solutions. The efficiency of most ballast water treatment processes is also dependent on water temperature.

SAMPLING: IT'S WHAT'S INSIDE THAT COUNTS

Honeywell Tankssystem is the leading provider of portable tank sampling solutions which is a standard requirement in custody transfer operations for cargo tanks worldwide. Our HERMetric Samplers offer an exhaustive range of accessories for wide range of sampling applications.

Whether it's testing cargo contents, verifying sulphur content purity for bunker fuel, or to test salinity or for the presence of micro-organisms in ballast water, sampling bottles are the only way to take representative samples of the liquid at chosen levels in the tank.



SAFETY FIRST

We provide safe solutions for all manual gauging requirements:

- Open gauging where there is no danger of releasing dangerous gases
- Restricted "simply safe" gauging, limiting gas release to safe levels
- "Totally safe" closed gauging for blocking vapour release completely.

Our solutions help you ensure a safe working environment and meet increasingly strict environmental regulations around Volatile Organic Compounds (VOCs).

Honeywell Tankssystem equipment is safe to operate, minimizing risks of dangerous gases released from liquid cargo and potential for chlorine or even gaseous oxygen in ballast water. Electronics are built to be intrinsically safe; samplers keep liquid from release in the open air; and valves and instruments keep your tanks gas-tight.

PRODUCT OVERVIEW

The Honeywell Tanksystem portfolio offers a wide range of equipments, instruments and options for meeting the precise requirements of your operations and applications.

HERMETIC UTIMETER

A portable level gauge designed for all kinds of liquids, the HERMetric UTImeter is used for custody transfer, inventory control measurement and free water detection on marine vessels and shore tanks. It can connect to a HERMetric vapor control valve of 1 and 2 inches, or other types, and provides four measurements in one operation: Ullage, temperature, oil-water interface level, and innage (reference height).

The UTImeter can be equipped with tapes of 15m, 25m, 35m and 50m in length and is available in various declinations, according to the type of ship, cargo and regulations:

UTImeter GTEX is designed for closed operations, with minimal release of dangerous gases. 1" sensor fitting on 1" or 2" valves with FKM gaskets.

GTEX Visc features an additional load, recommended for operations involving highly viscous products or for innage measurement. It fits on 2" valves and allows manual detection of the tank bottom.

GTEX Chem is recommended for use with dangerous chemicals such as sulfuric acids. It features a special protected sensor, FFKM gaskets and tape connector, and carries IIC ATEX approval.

GTEX Chem "reflon" for especially corrosive materials has the same features as the GTEX Chem plus an anti-corrosive coating on the body of the instrument

GTEX High Pressure withstands up to 0.7 bar gauge overpressure in the tank. It is designed for use on shuttle tankers loading oil from offshore platforms and parcel tankers using higher pressure as a means to reduce the release of VOCs

The UTImeter RTEX is designed for restricted operations with low probability of release of gases.

KEY FEATURES

All UTImeter devices come with intelligent features to ensure ease of use and safety, protecting the process, people and environment:

- Sound and light signals, particularly useful in noisy environments
- A "keep alive" beep and light while the unit is switched on and working, indispensable during topping-off operations
- Mechanical cleaning/locking tape device
- A special mechanical tape protection safety device to prevent inadvertent cuts by valves closing while the sensor is inside the tank – preventing damage to the tape and reducing repair costs
- An integral sensor probe (temperature RTD, ultrasonic level sensor and conductivity sensor), calibrated just once at the factory. No further subsequent calibration is required, even if exchanged in the field
- Fast temperature stabilization digital sensors, saving up to half the time during measurement and calibration compared to other analog sensors.

Technical data (Common)

Ullage-interface detection accuracy:	± 2 mm (± 0.08" approx.)
Ullage, interface indication:	Audible and visible selectable
Tape graduation:	Metric/Imperial
Tape resolution:	1 mm / 1/16"
Tape accuracy:	± 1.5 mm/30 m (±1/16"/100 ft. approx.)

MEETS API MPMS CHAP 3.1A AND ISO 4512 REQUIREMENTS

Temperature accuracy:	± 0.1°C (0°C to 70°C);
Meets API MPMS Chap 7 request	± 0.2°F (32°F to 158°F)

MEETS ISO 4268 , IP PMM PART IV

Ambient temperature range:	-20°C to 50°C / (-4°F to 122°F)
Temperature sensor measurement range:	-40°C to 90°C / (-40°F to 194°F)
Temperature measurement resolution:	0.01° or 0.1° selectable
Temperature reading:	°C or °F selectable
LCD Display:	8 characters with backlight
Power:	Approved 9V batteries
Weight with 15 m/50 ft tape:	4.4 kg / 9.7 Lbs.

Technical data (Specific)

Tape length:	15 m/50 ft., 25 m/75 ft., 35 m/115 ft., 50 m/150 ft.
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MAXIMUM TANK OVERPRESSURE:

GTEX	0,3 bar (4,4 psi)
GTEX High Pressure	0.7 bar (10.15psi)
RTEX	None

HAZARDOUS ENVIRONMENTS APPROVALS

GTEX, RTEX	ATEX	II 1 G EEx ia IIB T4 / Tamb 50°C
	FM Approvals	CL I, DIV 1, C&D, T4 Tamb 50°C and CL I, ZN O, AEx ia IIB T4 Tamb 50°C
	IECEX	Zone O, Ex ia IIB T4
GTEX High Pressure	ATEX	II 1 G EEx ia IIB T4 / Tamb 50°C
GTEX Chem, "reflon"	ATEX	II 1 G EEx ia IIC T4 / Tamb 50°C
	IECEX	Zone O, Ex ia IIC T4

Quick guide on model number building. (Due to the large number of combinations, not all can be made readily available from the factory. Contact us and we will define the best instrument characteristics to meet your needs.)

HERMETIC SAMAPLERS

We provide solutions for all sampling needs, from simple 1" bottles to large size sampling, including chemical versions ensuring that dangerous products are never in contact with the open air. A set of four different bottles allows samples at a chosen height or retrieval of a representative sample of the whole tank contents. All HERMetric samplers are equipped with graduated tape showing the precise height where the sample is taken.

HERMetric samplers comply with API MPMS Chapter 8.1 for sampling hydrocarbons. They are also the best solution to obtain representative samples of ballast water before discharge.

HERMetric Samplers connect to HERMetric valves with 1", 2" or 4" connections:

The HERMetric Sampler GT1 connects to 1" HERMetric vapor control valves with a quick connect coupling. It is fitted with a gas tight housing designed for closed sampling of liquids presenting a fire, health or air pollution hazard. It protects from vapor emission and avoids a pressure release in the tank during sampling.

HERMetric Samplers A-2, GTX Chem and GTN Chem connect to 2" HERMetric vapor control valves:

A-2 liquid transfer from the sampling bottle to the laboratory bottle occurs under open conditions after closing the vapor control valve.

GTX Chem provides for transfer of the liquid from the sampling bottle to a laboratory bottle by over pressuring the upper chamber of the sampler with a pump. The remaining product is sent back into the tank at the end of the operation.

GTN Chem allows the sample to be transferred under closed conditions. This guarantees the integrity of the sample, since the liquid is never in contact with the atmosphere. A closed vapor recovery system dispatches the vapors back into the tank during the transfer of the liquid into the laboratory bottle. The sampler can be purged with inert gas before and/or after sampling.

Large volume samplers connect to the HERMetric 4" deck valve, and are used where more than 0.5 liters of liquid is needed:

HERMetric Sampler A-4 allows up to 1.8 l to be sampled under restricted conditions.

GT4 supports up to 1.8 l of sample under closed conditions. Its gas tight construction prevents pressure release from the tank and exposure to fumes during operation.



HERMetric Sampler GT1 & HERMetric Sampler A-2



Technical data

SPECIFICATION	GT1	A2	GTX CHEM	GTN CHEM	A-4	GT4
Valve diameter	1"	2"	2"	2"	4"	4"
Capacity of sampling bottle (zone sampling):	~0.3 l	~0.5 l	~0.4 l	~0.4 l (1)	1.8 l	1.8 l
Tape length	30m/ 100ft	30m/ 100ft	30m/ 100ft	30m/ 100ft	30m/ 100ft (2)	30m/ 100ft (3)
Maximum tank overpressure	TbD	zero	0.3 bar	0.3 bar	0.3 bar	0.3 bar
Unit height	1260 mm	802 mm	800 mm	801 mm	770 mm	770 mm
Weight	4.2 kg	6.2 kg	5.3 kg	7.5 kg	7.4 kg	8.1 kg
Gaskets material	FKM	FKM	FFKM	FFKM		
Material	Stainless steel AISI 316, PTFE, PVDF	AISI 316, Rilsan coated aluminum (4)				
Hazardous environments approvals	TbD	TbD	ATEX II 1 G c IIB T6			

Notes

(1) The sample bottle capacity is 0.5 l and the laboratory bottle capacity is 0.47l (16 oz.)

(2) 40m tape available on request

(3) 50m tape available on request

(4) Stainless steel construction available on request

BOTTLES

All HERMetric samplers are delivered with a zone (open on top) sampling bottle. Additional spot, bottom or running sampling bottles are available for 2" and 4" HERMetric samplers.

The four bottles types are designed to fulfill the difficult requirements of liquid gauging, in which some inspections are based on a representative sample of the liquid column, while others and scientific sampling activities require collection from the top surface, tank bottom, or at a precise height. A set of 2", reduced-size bottles (130 ml) have also been developed to pass both ways in the curved sounding pipes (up to 10° angle) often seen in convoluted ballast water tanks.

Users can pick the most appropriate sampling bottle for their needs:

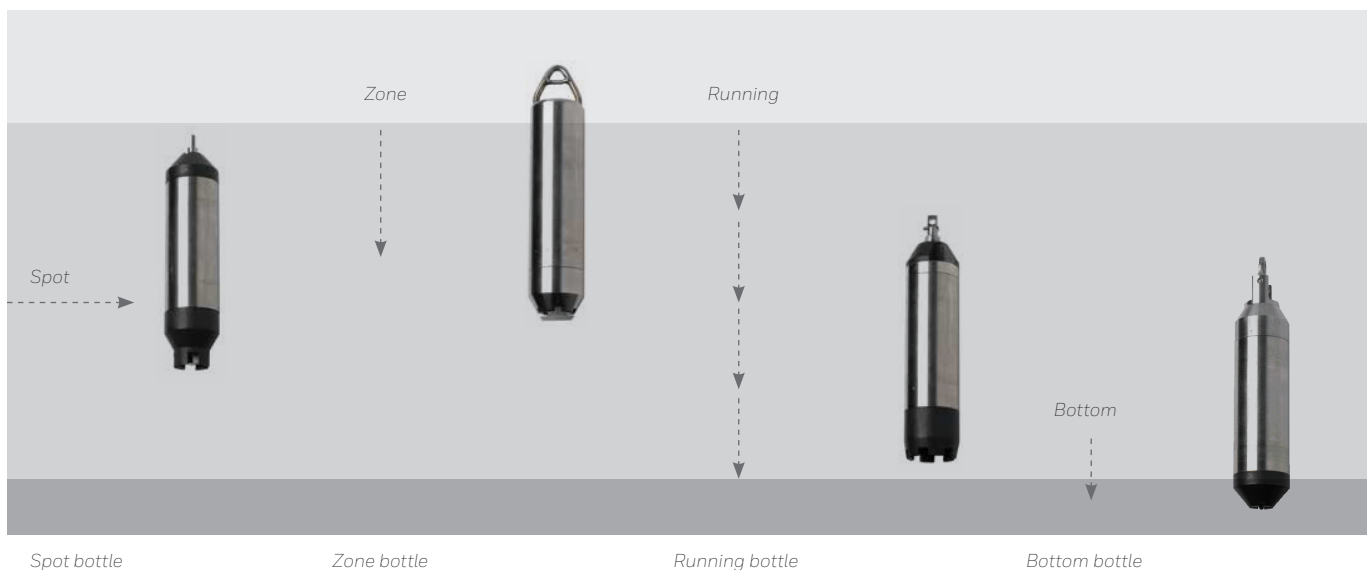
The standard zone bottle is open at its top and takes liquid from the surface when lowered with caution. It can be used to verify the particularities of the surface of the liquid, like foam, oxidized products or concentration of aerobic micro-organisms.

The bottom bottle has a small valve to let the liquid in only when it is touching the bottom surface. It can be used to check the lowest part of the liquid, including water bottom, residual chemicals and sediments.

The spot bottle has a small valve opened by the operator by "kicking" the

handle rapidly. The bottle will then fill at the exact height desired.

The running bottle takes a representative sample of the whole tank while being lowered and pulled. The diameter of the water incoming hole can be selected, so that the bottle will not be completely filled by return. This ensures that liquid from all parts of the tank has been sampled equally. The running bottle is the best choice for a quick assessment of compliance with the D-2 standard.



VAPOR LOCK VALVES

HERMetric Compact valves are specially designed to fit all portable HERMetric equipment with a HERMetric quick connector. Ensuring meters are set at the right height, they help keep measurements safe, accurate and reliable for all portable HERMetric units certified for use in hazardous areas.

The valves are made of stainless steel having a high molybdenum content with PTFE seals, and are designed to last longer than the ship on which they are installed. They are available in three sizes: 1", 2" and 4":

The C1-SS-W valve is a 1" full bore ball valve with 1" male BSP pipe thread designed to support all portable HERMetric equipment with HERMetric 1" quick connector. Model C1-SS-P has a special pressure cap cover designed for use with hazardous chemicals to protect against inadvertent opening.

The 2" valves feature two different adaptations and three types of caps. The adaptation may be female 2" thread or DUJ flange. Our proprietary DUJ flange fits standards like DIN PN 10 DN 50, DIN PN 16 DN 50, DIN PN 25 DN 50, 40 DN 50 JIS 5K 50,10K 50; and ANSI 150 lbs. 2". Cap choices are a simple 2" quick connector; doubly locked security cover to prevent water ingress and protect against inadvertent opening, the cover is secured to the valve with a stainless steel cable; and a 2" quick connector fitted with a 1" quick-connect nipple identical to the one supplied on the smaller 1" valves. This nipple matches with all HERMetric units and accessories with 1" connection.

The 4" heavy-duty compact ball valve deck flange satisfies the ANSI 150 lbs. standard. Three wing nuts are used to secure the cover or, alternatively, the sampler chamber. It is a good choice for high-volume sampling (1.8 l) or to lower an aspiration pipe connected to a pump to pump out large amounts of liquid (for

example, when filtering ballast water). Cap choices are a swing away 4" cover fitted with a 1" quick-connect nipple identical to that supplied on the smaller

1" valves; or a swing away 4" cover fitted with 2" and 1" connections. This multiple connection is able to accommodate all types of HERMetric instruments.



HERMetric Compact valve C1-SS-W - 1 Inch connection



HERMetric Compact valve C2-SS-BL- 2 Inch connection



A grounding cable has to be installed if HERMetric gauges are used with competitor valves



TS 55000 - Used to connect all HERMetric units with 1Inch quick connect coupling to valves with UNF 2 1/2 Inch connection.



TS 55115 - Used to connect all HERMetric units with 2 Inch quick connector to valves with UNF 2 1/2 Inch connection.

Weights table

DESCRIPTION	2" VALVE, QUICK CONNECTOR	2" VALVE, SECURITY COVER	2" VALVE, 2" AND 1" CONNECTORS	4" VALVE, 4" AND 1" CONNECTORS	4" VALVE, 4", 2", 1" CONNECTORS
Model	C2-SS-BL	C2-SS-SEC	C2-SS-W	A-4 SS	A-4-2-1 SS
Weight	4.8 kg	5.4 kg	5.1 kg	24 kg	25 kg

ACCESSORIES

Honeywell Tanksystem's portfolio includes accessories for a wide range of marine applications to provide a complete solution for your needs.

DIP is the standard device used for checking presence of sediment or sludge at the bottom of dry tanks:

DIP2 is a 500 mm long DIP rod, designed for easy penetration of sediments on the tank bottom. It is attached to a 30 m long stainless steel tape, coiled on a reel graduated in combined metric and Imperial units. The storage tube is fitted with a quick connect coupling for fast and easy installation on all 1" quick connect nipples. Weight: 3.3 kg.

DIP 2 Gas Tight avoids a pressure release from the tank and exposure to toxic fumes during operation.



HERMetric Dip2 & HERMetric Dip2 GT

HERMetric OXY enables users to meet IMO requirements on Tanker Safety and Pollution Prevention, by determining oxygen level before the start of crude oil washing. It samples inert gas (or any other gas) over the full tank height without allowing it to escape to the atmosphere. A hollow brass plug is fitted to a rubber hose of up to 30 m length. A valve is located before the gas analyzer for air purging of the hose (analyzer not supplied). HERMetric OXY adapts to all 1" quick connect nipples. Weight: 3.8 kg.



HERMetric OXY

HERMetric PRESS enables tanker operations to meet requirements for verification of tank pressure without potential for error due to signal conversion or remote transmission. This rugged, high precision gauge provides reliable reading within the range of 1500 mm vacuum and 2500 mm pressure. The gauge is protected by a thick rubber rim and mounted on top of a vapor tight adaptor for closed tank operation. A quick connect coupling at the lower end enables use with all 1" quick connect nipples. Weight: 1.5 kg.



HERMetric Press

Adapters and Grounding Cable

Storage tubes and adapters for HERMetric equipment (gauges and samplers) are designed for connection to existing non-Tanksystem valves on board. Honeywell can deliver most of its gauges and samplers with the suitable adaptor to fit on existing valves.

Common use adapters include the TS 55000 to connect all HERMetric units with 1" quick connect couplings to valves with UNF 2 1/2" connections; and TS 55115 to connect all HERMetric units with 2" quick connect to valves with the UNF 2 1/2" connection.

Please consult us for special requirements.

ONECAL TEMPERATURE MEASUREMENT

The HERMetic Onecal electronic thermometer is designed for field inspection of bulk liquids custody transfer, meeting all relevant industry standards. Temperature measurement is essential in tank gauging since the density of many petroleum products changes by approximately 0.1% per degree Celsius.

Extremely stable in time and unaffected by outside temperature, the Onecal thermometer is the simple, reliable way to ensure accuracy of the transaction and avoid costly letters of protests:

Quick calibration is done with just a single measurement point at 0°C (ice bath) at the touch of a button. Unlike many electronic thermometers, which drift with the external temperature, the Onecal uses the proprietary "Surrounding Compensation System" and does not need recalibration with variations of outside temperature

Quick exchange for cables or sensors, which can be exchanged independently with only one single-point calibration, avoiding lengthy multiple point calibration.

Quick response times, among the fastest of all the instruments on the market, accelerating inspections and calibration.

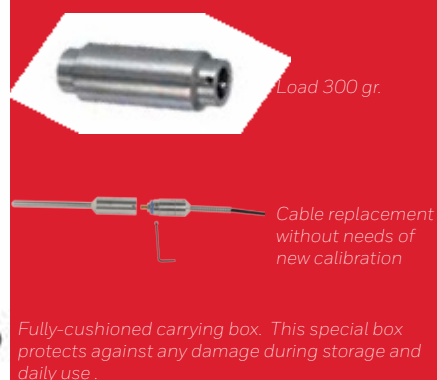
Up to nine temperature values can be stored in the unit's internal memory, with an averaging function available on demand, increasing the speed of the inspection and reducing the risk of human error. With a case loop of 2 ft. or 2/3 m, the measurement can be set quickly without the use of a graduated tape by simply counting the loops, with the longest length of cable 55 loops, or 110 ft. (33.5 m).

An optional 300 g load set on the sensor eases the lowering of the sensor in high density or high viscosity products. It also comes with a fully cushioned carry box to protect against any damage during storage and daily use.



HERMetic Onecal electronic thermometer

OPTIONS



Technical characteristics

Measurement range	-40°C to 163°C / -40°F to 325°F
Sensor temperature range	-40°C to 200°C / -40°F to 392°F
Ambient temperature range	-20°C to 40°C / -4°F to 104°F
Resolution	0.1° or 0.01° selectable
Temperature scale	°C or °F selectable
Temperature accuracy	
-40°C to -30°C / -40°F to -22°F	± 0.25°C / ± 0.4°F
-30°C to 100°C / -22°F to 212°F	± 0.1 °C / ± 0.2°F
100°C to 163°C / 212°F to 325°F	± 0.25°C / ± 0.4°F
Repeatability	exceeds API MPMS Chapter 7
-40°C to 163°C / -40°F to 325°F	+/- 0.1°C / +/- 0.2°F
Calibration	Digital, one point only 0°C / 32°F
Memory	up to 9 values
Display	LCD 8 digits, 10 mm character height
Power	Approved 9 Volt battery
Battery saving	Auto. shut off /10 minutes after last action
Battery life	Approximately 100 hours
Low battery indication	On LCD display
Overall dim. length x width x depth	336 x 202 x 94 mm/13.2" x 8" x 3.7"
Weight with 22.8 m / 75 ft. cable	< 1.4 kg / < 3 lbs.
Probe size	diam. 16 mm , 150 mm long / 5/8 "diam., 6" long
Probe material	Stainless steel 1.4435
Cable length	7.6 m/25 ft., 22.8 m/75 ft., 33.5 m/110 ft.
Cable material	FEP Teflon jacket
Instrument protection	IP 54
Frame material	Antistatic Polyamide base
Electronic box material	Coated aluminum
Temperature sensor	PT 1000 element
Hazardous environment Approvals	
ATEX	II 1 G EEx ia IIB T4
FM Approvals	CL I, DIV 1, C&D, T4 and CL I, ZN O, AEx ia IIB T4
China	CQST ExialIBT4
Metrology approval	
Germany	PTB, portable electronic thermometer
China	Pattern approval
Complies with	
EMC	EC directive 89/336/EEC
ATEX	EC directive 94/9/EC



SERVICE AND SUPPORT

Honeywell Tanksystem is the world's leading supplier of portable level gauging and sampling equipment. We have supplied equipment for more than 2,000 crude oil tankers, 3,000 chemical tankers, 8,000 river barges and hundreds of tankfarms. Worldwide, HERMetric Tanksystem sets the standard for quality, accuracy, ruggedness and flawless support.

Our instruments are vital to the professionals using them, who need a fast effective response when maintenance or servicing is required. Honeywell Tanksystem's network of more than 30 service stations across the globe ensures we can deliver. Regularly audited, these stations carry a large stock of genuine spare parts to ensure rapid repair and to retain safety approvals.

Please contact us to find the nearest service station for your requirements.

For more information

To learn more about Honeywell's
marine solutions, email
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or contact your local
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