

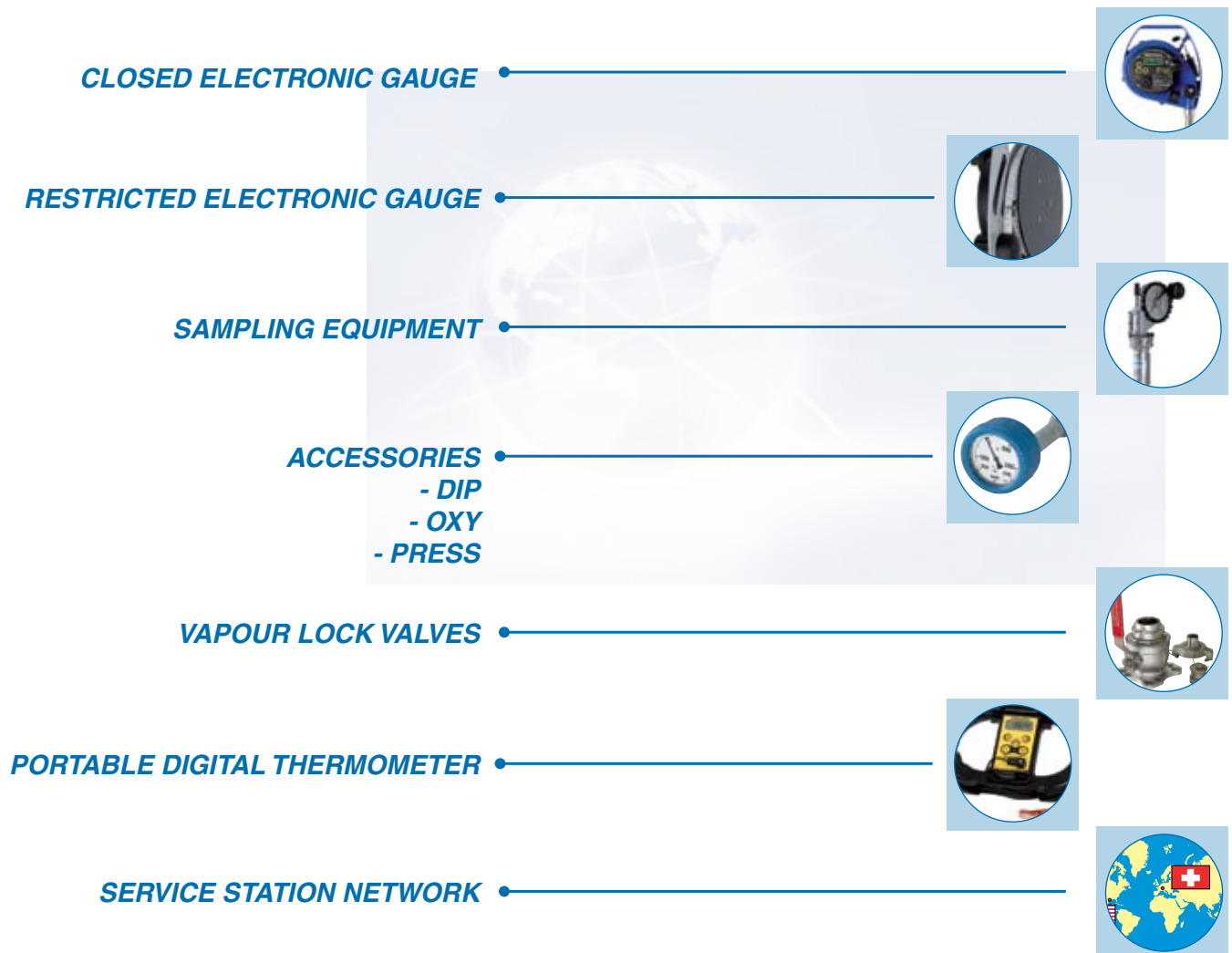


**Product Overview
For marine application**



Honeywell
ENRAF TANKSYSTEM SA

HERMetric portable level gauging and sampling equipment for marine application





COMPANY PRESENTATION

Enraf Tanksystem is the world's leading supplier of portable Level Gauging and Sampling Equipment for Marine applications as well as for the Oil and Petro-Chemical industry.

Enraf Tanksystem, a subsidiary of Honeywell Process Solutions, has supplied equipment for more than 7500 tankers, barges and tank farms. With headquarters in Switzerland since 1985, Tanksystem has a network of 60 agents and 16 service stations WORLDWIDE.

Our goal is to build up a long-term relationship with our customers and to put their needs in the centre of all our activities.

All our equipment is intrinsically safe and manufactured for use in classified hazardous environments (Zone 0) onboard vessels or in storage tank farms.

As an ISO 9001 certified company, we are dedicated to fulfil all needs of our demanding customers who operate in classified areas according to high standards regarding safety, reliability and accuracy.

We help you to protect the operator and the environment.

EN ISO
9001 : 2000



DNV

Certified
Company

Our main product lines are:

- HERMetric portable level gauging equipment, an important tool for inventory control, cargo inspection during custody transfer and verification or calibration of automatic gauging systems.
- HERMetric portable sampling equipment, an important tool designed to sample liquids from tanks under closed or restricted conditions.
- HERMetric Onecal intrinsically safe portable digital thermometer for use in hazardous environment.

FOREWORD

Measurement accuracy is essential for the sale, purchase and handling of petroleum products. It reduces the likelihood of disputes between buyer and seller and facilitates control of losses. Accurate measurement demands the use of standard equipment and procedures.

Although automatic level gauging systems are in widespread use in the petroleum industry for the measurement of petroleum liquids in storage tanks, manual tank gauging is still widely applied as the normal technique for level measurement in non-pressurized and vapour tight tanks. It is highly accurate provided the correct procedures are carefully observed.

Manual tank gauging is the method that shall be applied for the calibration (setting) and periodic verification of automatic level gauging (ALG) systems. It is also normally selected as the reference method for the measurement of the level of liquid in a tank, should a dispute arise between the parties in a commercial transaction.

PORTABLE ELECTRONIC GAUGING DEVICES (PEGDs)

Portable electronic gauging devices are multi-functional in that they may measure other functions such as the level of any oil/water interface, temperature, in addition to measuring ullage.

Portable electronic gauging devices are available for either open, restricted, or closed gauging applications. Closed and restricted gauging operations will generally require the portable electronic gauging device to be used in conjunction with a compatible vapour lock valve. Alternatively, a suitable adapter will be required when it is necessary to use a PEGD (that is designed to be used with one particular type of valve fitting) with a different vapour lock valve fitting.

Representative measurements of the temperature of the tank contents are also required to convert the observed volume to a standard

volume measurement. When the tank contains free water in addition to the petroleum liquid, it will generally be necessary to measure the level of the oil/water interface. If the oil also contains suspended water and/or sediment, representative samples and analysis will normally be required to enable the calculation of the net standard volume of the oil.

OPEN, CLOSED AND RESTRICTED GAUGING

Safety and environmental regulations may restrict tank gauging operations which can result in the release of hydrocarbons or other volatile organic compounds (VOCs) into the atmosphere. In these circumstances, it will not normally be feasible to use traditional open gauging procedures via an open gauge hatch or gauging access point.

When the tank ullage space is pressurised, and/or the tank forms part of a vapour balancing/recovery system, it will normally be necessary to use closed or restricted gauging procedures to avoid de-pressurising the tank and minimise the consequent loss of VOCs. If the vapour from the tank contents is hazardous, it will also normally be necessary to use closed or restricted gauging procedures to minimise the risk of environmental impact.

Closed gauging is the process of taking measurements within a tank using closed gauging devices under closed system conditions. A closed system exists when the operations do not permit the direct exposure and/or release of any tank contents to atmosphere. Manual closed gauging measurements are therefore normally made via a vapour lock valve, using a closed measurement device that provides a gas-tight seal when in use. Restricted gauging is the process of taking measurements within a tank using a restricted gauging device that is operated via a vapour lock valve. Restricted equipment is designed to substantially reduce or minimise the vapour losses that would occur during open gauging, but may still allow some small quantity of vapour to escape because the equipment is not completely gas tight.

IMO REQUIREMENTS.

Annex I of MARPOL 73/78 Chapter II, Reg. 15(3)(b)

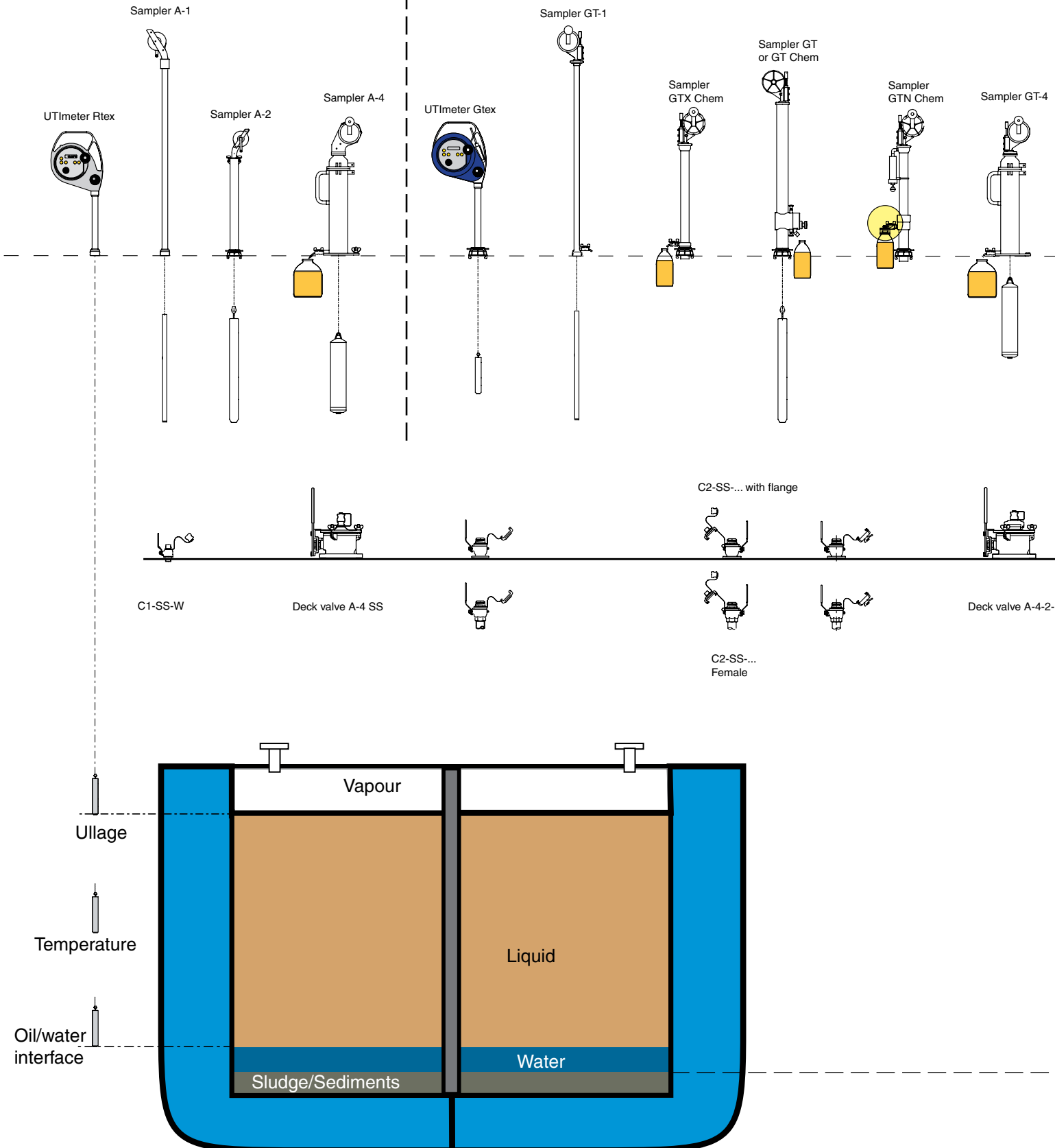
The International Convention for the Prevention of Pollution from Ships, 1973 specifies that oil tankers shall be provided with effective oil/water interface detectors approved by the Administration for a rapid and accurate determination of the oil/water interface in slop tanks and shall be available for use in other tanks where the separation of oil and water is effected and from which it is intended to discharge effluent direct to the sea.



HERMetric portable tank measuring system for marine application

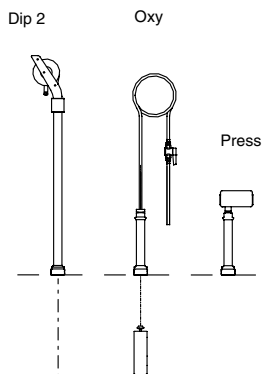
RESTRICTED OPERATIONS

CLOSED / GAS TIGHT OPERATIONS



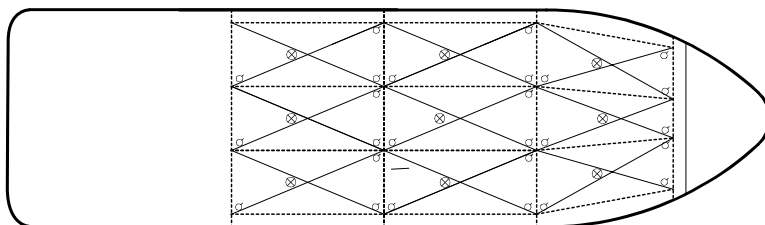
COMPLIANCE RULES

Equipment type	Function	Complies with
Closed type portable oil/water interface detector (UTI)	Ullage level Temperature gauging Oil - water interface level	SOLAS 1974, REGULATION 60 PARAGRAPH 7 IMO MARPOL 73/78 ANNEX I-CHAP II - REGULATION 15,(3)(b) IMO RESOLUTION MEPC.5 (XIII).
Cargo liquid sampling device	Liquid sampling	OCIMF, API STANDARD RESTRICTED WITH CLOSED SAMPLING OF LIQUID SAMPLING
Inert gas sampling hose & adaptor	Oxygen and flammable gas concentration measuring	IMO REQUIREMENT ON TANKER SAFETY AND POLLUTION PREVENTION, 1978-RESOLUTION A.446(XI), 6.6 (a)
Pressure gauge	Tank bottom dryness & sediment checking	IMO REQUIREMENT ON TANKER SAFETY AND POLLUTION PREVENTION, 1978-RESOLUTION A.446(XI), 6.6 (b)
Tank bottom liquid and sediments checking device	Vapour lock installation of portable tank measuring system	IMO REQUIREMENT ON TANKER SAFETY AND POLLUTION PREVENTION, 1978-RESOLUTION A.446(XI), 4.4.4
Shut on/off valve		IMO MARPOL 1973/78 ANNEX I, REGULATION 13b (3) SOLAS 1974, CHAPTER II-2, REGULATION 60 PARAGRAPH 7 (REQUIREMENT OF CLOSED ULLAGE SYSTEM) IMO MARPOL 73/78 ANNEX I - CHAP II - REGULATION 15,(3)(b) SOLAS 1974, CHAP II-2, REGULATION 62, PARAGRAPH 17



TYPICAL ARRANGEMENT OF VALVES

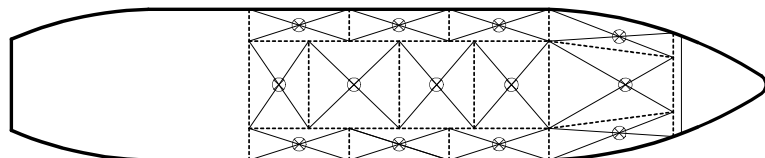
VLCC, crude oil or oil/chemical tanker



○ 1 Inch ball valves for dipping

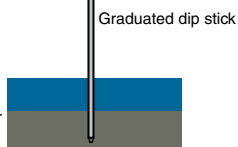
⊗ 2 Inch ball valves for gauging and sampling access

Product or chemical tanker



⊗ 2 Inch ball valves for gauging and sampling access

- IMO
 - Solas 74
 - MARPOL 73/78
- ISO
 - 4512
 - 3170
 - 4268
- API
 - MPMS Chap 3.1A
 - MPMS Chap 7
 - MPMS Chap 8.1
- IP
 - PMM Part III-1
 - PMM Part IV"



HERMetric UTImeter Gtex

The HERMetric UTImeter Gtex is a portable gas tight liquid level gauge designed for closed gauging of hydrocarbons and chemicals. The unit is used for custody transfer, inventory control measurement and free water detection on marine vessels and shore tanks. Connected to a HERMetric vapour control valve fixed on the tank, the HERMetric UTImeter Gtex avoids any gas release during operation.

The unit enables 3, optionally 4 measurements in one single operation:

- Ullage
- Temperature
- Oil-Water interface level
- Innage, Reference height (Visc version)

A GAUGE IN DIFFERENT VERSION DEDICATED TO YOUR APPLICATION:

HERMetric UTImeter Gtex

- with 1" sensing probe, FKM gaskets for the main applications in hydrocarbons.

HERMetric UTImeter Gtex Chem

- with 1" sensing probe, FFKM gaskets and tape connector for use in corrosive liquids.

HERMetric UTImeter Gtex Visc and HERMetric UTImeter Gtex Chem Visc

- with 2 Inch load on the sensing probe, recommended for operation in high viscous products or for innage measurements in hydrocarbons or in corrosive liquids.
- Manual detection of tank bottom.



Installation, connection and references for the new UTImeter family are fully compatible with previous HERMetric UTI/ GT3 type of equipment.

- ◉ IMO
 - ◉ Solas 74
 - ◉ MARPOL 73/78
- ◉ ISO, API, IP
- ◉ EC Directive 89/336/EEC
- ◉ EC Directive 94/9/EC
- ◉ EC Directive 96/98/EC
- ◉ ATEX, Factory Mutual, IECEx
- ◉ National authorities, (USCG, MSA, ..)
- ◉ All major classification societies

"A closed system exists when a marine tank vessel does not permit the direct exposure and/or release of the tank content into the atmosphere under normal operating conditions." (API MPMS 17.2 A.4.1.)

ULTRA SENSING PROBE

Benefits:

- 100 % repeatability of measures.
- Continuous temperature reading.
- High accuracy and stability.
- Chemically resistant to corrosive liquids (Chem version).
- Easy access for battery exchange.
- **Sensor exchange without need of new calibration.**
- Low weight for easy operation and carry around
- No temperature drift. No degradation of the sensitivity due to sensor ageing.
- Interchangeable adapters for connection to different vapour control valves.
- Tape cleaning devices, window wiper and tape protection on all units as standard.



Low maintenance cost:

Fully modular unit. Change tape, storage tube, sensor or instrument unit yourself. Easy and detailed instructions in Operation and Service Manual.

Storage tube SS1-Q2



Storage tube SS1-Q1



Visc version
Storage tube SS2-Q2



Interchangeable adapters for connection to different vapour control valves (page 13)



Type: C2-SS-SEC



Type: C1-SS-W

Mechanical tape cleaning device as standard on all UTImeter



Sensor fitted with additional load, recommended for operation in high viscous products or for innage measurements





TECHNICAL SPECIFICATIONS:

Accuracy of ullage-interface detection:

Ullage, interface indication:

Maximum tank overpressure:

Tape length:

Tape graduation:

Tape resolution:

Tape accuracy:

Meets API MPMS Chap 3.1A and ISO 4512 requirements

Temperature accuracy:

Meets API MPMS Chap 7 request

Meets ISO 4268 , IP PMM Part IV

Ambient temperature range:

Temperature sensor measurement range:

Temperature measurement resolution:

Temperature reading:

LCD Display:

Power:

Weight with 15 meter / 50ft tape:

Hazardous environments approvals

ATEX

Factory Mutual

IECEX

± 2 mm (± 0.08" approx.)

Audible and Visible selectable

0,3 bar (4,4 psi)

15 m/50 ft, 30 m/100 ft, 35 m/115 ft

Metric/English

1 mm / 1/16"

± 1.5 mm/30 m (±1/16"/100 ft approx.)

± 0.1°C (0°C to 70°C);

± 0.2°F (32°F to 158°F)

-20°C to 50°C / (-4°F to 122°F)

-40°C to 90°C / (-40°F to 194°F)

0.01° or 0.1° selectable

°C or °F selectable

8 characters with backlight

Approved 9V batteries

4.4 kg / 9.7 Lbs.

II 1 G EEx ia IIB T4 / Tamb 50°C

CL I, DIV 1, C&D, T4 Tamb 50°C and

CL I, ZN 0, AEx ia IIB T4 Tamb 50°C

Zone 0, Ex ia IIB T4

All HERMetric UTImeter's are now equipped with the sensor " **ULTRA** " for use in low and high viscous liquids. The ULTRA sensing probe consists of a stainless steel tube terminated by a PEEK head. The sensing probe includes an ultrasonic liquid level sensor, a temperature sensor and a conductivity electrode. The sensitivity for ullage and interface measurement does not require any adjustment. The sensor is calibrated once at the factory and does not require subsequent calibration. The temperature transducer is a RTD element. The characteristics of the RTD element are stored inside the sensor. The sensor is sending true temperature values to the electronic box and display.

Benefits

- 100% repeatability.
- No adjustment of the sensitivity required.
- Small diameter for use on 1" HERMetric valves.
- Chemically resistant to corrosive liquids (Chem version).
- High mechanical stability.
- No degradation of the sensitivity due to ageing of the sensor.



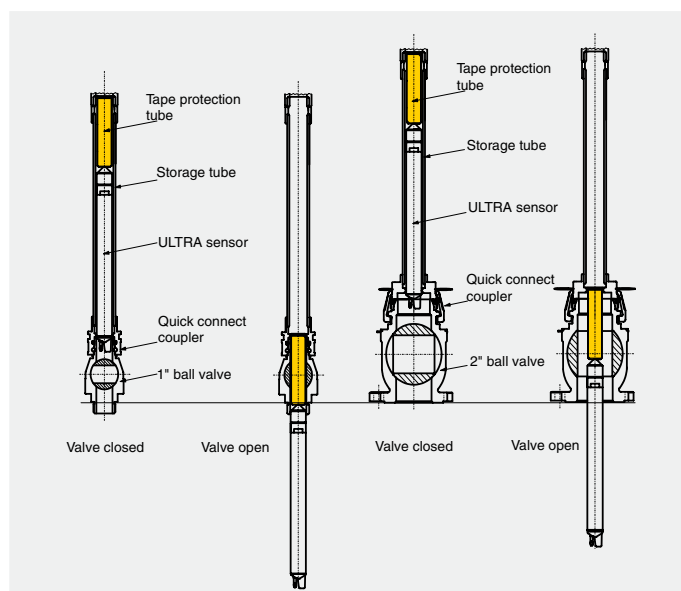
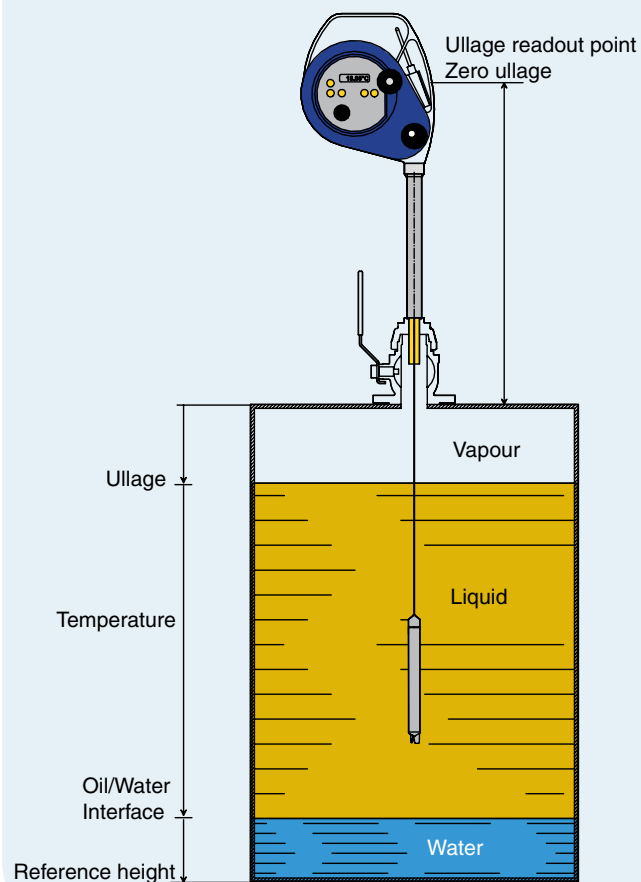
All HERMetric portable level gauges and 2 Inch samplers are delivered with a **taylor made plywood carrying case as a standard**. This special box avoids any damage during transport and storage.



Special tape protection to protect the tape from inadvertent cut by closing the valve while the sensor is inside the tank. This mechanical safety device prevents damages on tape and reduce repair costs.



Principle of installation



HERMetric UTImeter Rtex

The HERMetric UTImeter Rtex is a portable liquid level gauge designed for restricted gauging of petroleum products. The unit is used for custody transfer, inventory control measurement and free water detection on marine vessels and shore tanks. The HERMetric UTImeter Rtex has to be connected to a HERMetric vapour control valve fixed on the tank.

The unit enables 3, optionally 4 measurements in one single operation:

- Ullage
- Temperature
- Oil-Water interface level
- Innage, Reference height (Visc version)



Storage tube SS1-Q2



Storage tube SS1-Q1



A GAUGE DEDICATED TO YOUR APPLICATION:

HERMetric UTImeter Rtex

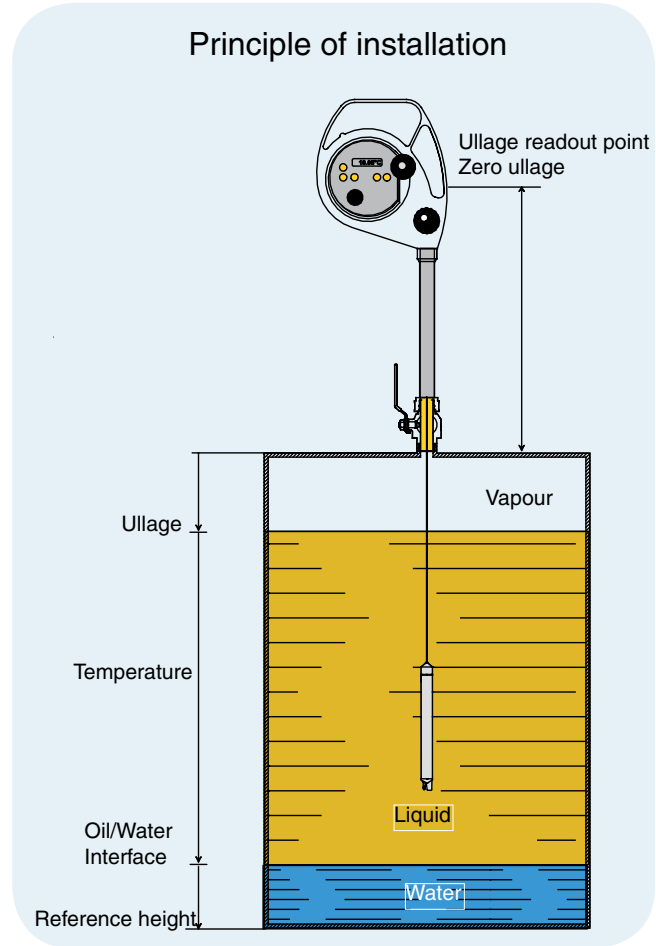
- with 1" sensing probe, FKM gaskets for the main applications in hydrocarbons.

HERMetric UTImeter Rtex Visc

- with 2 Inch load on the sensing probe, recommended for operation in high viscous products or for innage measurements in hydrocarbons.
- Manual detection of tank bottom.

- ◉ IMO
 - ◉ Solas 74
 - ◉ MARPOL 73/78
- ◉ ISO, API, IP
- ◉ EC Directive 89/336/EEC
- ◉ EC Directive 94/9/EC
- ◉ EC Directive 96/98/EC
- ◉ ATEX, Factory Mutual, IECEx
- ◉ National authorities, (USCG, MSA, ..)
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All HERMetric UTImeter's are now equipped with the sensor "ULTRA" for use in low and high viscous liquids. The ULTRA sensing probe consists of a stainless steel tube terminated by a PEEK head. The sensing probe includes an ultrasonic liquid level sensor, a temperature sensor and a conductivity electrode. The sensitivity for ullage and interface measurement does not require any adjustment. The sensor is calibrated once at the factory and does not require subsequent calibration. The temperature transducer is a RTD element. The characteristics of the RTD element are stored inside the sensor. The sensor is sending true temperature values to the electronic box and display.



TECHNICAL SPECIFICATIONS:

Accuracy of ullage-interface detection: ± 2 mm (± 0.08" approx.)
 Ullage, interface indication: Audible and Visible selectable
 Maximum tank overpressure: 0,3 bar (4,4 psi)
 Tape length: 15 m/50 ft, 30 m/100 ft, 35 m/115 ft
 Tape graduation: Metric/English
 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);
 ± 0.2°F (32°F to 158°F)
Meets API MPMS Chap 7 request
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 meter / 50ft tape: 3.7 kg / 8.1 Lbs.

Hazardous environments approvals

ATEX
 Factory Mutual
 IECEx
 II 1 G EEx ia IIB T4 / Tamb 50°C
 CL I, DIV 1, C&D, T4 Tamb 50°C and
 CL I, ZN 0, AEx ia IIB T4 Tamb 50°C
 Zone 0, Ex ia IIB T4

HERMetric Sampler GTX Chem or Sampler GTN Chem

The **HERMetric Sampler GTX Chem** and **HERMetric Sampler GTN Chem** are designed for closed sampling of liquids or chemicals, which present a Fire-, Health- or Airpollution Hazard. The gas tight construction of these units avoids a pressure release from the tank and exposure to fumes during operation.

For the **HERMetric Sampler GTX Chem** the transfer of the liquid from the sampling bottle to a laboratory bottle occurs by overpressuring the upper chamber of the sampler with a pump.

- After sampling, the liquid can be transferred into a laboratory bottle by opening the transfer valve and actuating the pressure pump.
- The graduated tape permits checking of sampling bottle height.
- The HERMetric Sampler GTX Chem is very easy to clean and fully compatible with all kind of non corrosive and corrosive liquids.

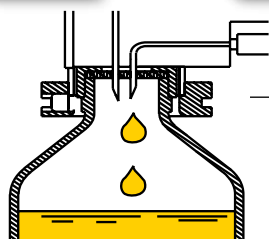
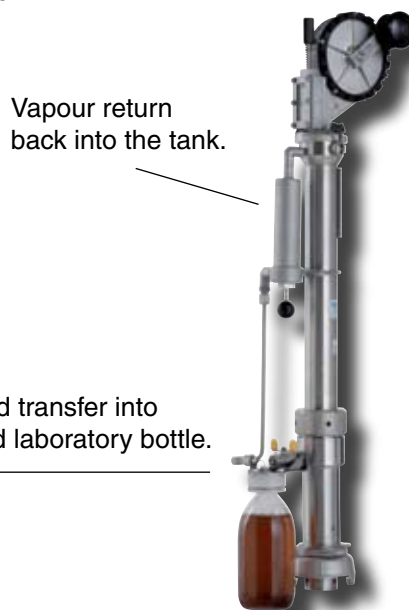
For the **HERMetric Sampler GTN Chem**, the sample can be transferred under closed condition. This transfer guarantees the integrity of the sample, since the liquid is never in contact with the atmosphere. A closed vapour recovery system dispatches the vapours back into the tank during transfer of the liquid into the laboratory bottle.

- The HERMetric Sampler GTN Chem can be purged with inert gas before and/or after sampling.
- The sampled liquid is never in contact with the atmosphere.
- The sampling height can be measured on the graduated tape.

HERMetric Sampler GTX Chem



HERMetric Sampler GTN Chem



- ISO 3170
- API MPMS Chap 8.1

TECHNICAL SPECIFICATIONS:

	HERMetric GTX Chem	HERMetric GTN Chem
Maximum tank overpressure :	0,3 bar	0,3 bar
Unit height:	800 mm	801 mm
Weight :	5.3 kg	7.5 kg
Tape length :	30m / 100 ft	30m / 100 ft
Capacity of sampling bottle :	Approx. 0.5 l	Approx. 0.5 l
Capacity of laboratory bottle :		0.47 l, 16 oz
Type of gaskets:	FFKM	FFKM
Materials:	Stainless steel AISI 316, PTFE, PVDF	
Hazardous environments approvals		
ATEX	II 1 G c IIB T6	II 1 G c IIB T6

HERMetric Large Volume Samplers with 4 Inch Valves

The **HERMetric Sampler A-4** is designed for restricted sampling and the **HERMetric Sampler GT4** for closed, gas tight sampling of liquids which present a Fire-, Health- or Air-pollution Hazard.

The sampler housing is mounted on top of the HERMetric 4 Inch deck valve. The sample is taken by a vertical move of the bottle inside the liquid. The bottle is linked with a graduated tape. A reading window allows monitoring the bottle location. The opening of the bottle valve is realized by lowering the sampling bottle until its sitting on the ball of the valve. The transfer of the liquid from the sampling bottle to a laboratory bottle occurs by opening the transfer valve at the bottom of the sampler. A pump can be connected to the winder to accelerate and complete the transfer of the sample.

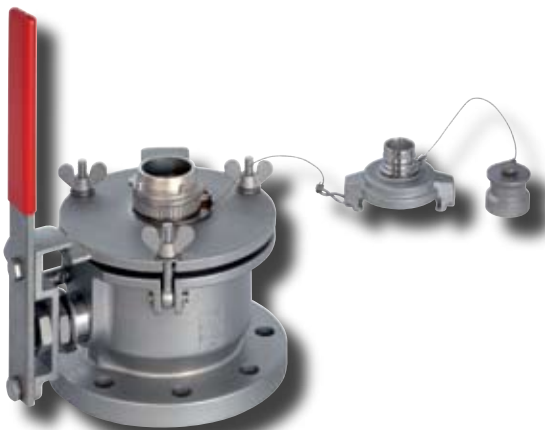
The **HERMetric Sampler A-4** is dedicated for applications where restricted sampling is accepted and more than 0.5 litre of liquid is needed.

The **HERMetric Sampler GT4** is dedicated for closed sampling of liquids and where more than 0.5 litre of liquid is needed. Its gas tight construction avoids a pressure release from the tank and exposure to fumes during operation.

* Stainless steel construction on request



HERMetric Deck Valve A-4-2-1 SS



HERMetric Deck Valve A-4 SS

TECHNICAL SPECIFICATIONS:

	HERMetric Sampler A-4	HERMetric Sampler GT4
Maximum tank overpressure :	0,3 bar	0,3 bar
Unit height::	770 mm	770 mm
Weight :	7.4 kg	8.1 kg
Tape length:	30 m / 100 ft	30 m / 100 ft
On request:	40 m tape length	50 m tape length
Capacity of sampling bottle:	Approx. 1.8 l.	Approx. 1.8 l.
Materials:	AISI 316, Rilsan coated Aluminium	
Hazardous environments approvals		
ATEX	II 1 G c IIB T6	II 1 G c IIB T6

Other HERMetric Samplers

The **HERMetric Sampler A-1** and **HERMetric Sampler A-2** are dedicated to applications where restricted sampling is accepted. The sampler A-1 is for connection to 1" valves and the A-2 for connection on 2" HERMetric vapour control valves. The liquid transfer from the sampling bottle to the laboratory bottle occurs under open conditions after closing the vapour control valve.

The **HERMetric Sampler GT1** is fitted with a gas tight housing designed for closed sampling of liquids, which present a Fire-, Health- or Airpollution Hazard. It protects the storage facility from vapour emission and avoids a pressure release in the tank during sampling. The sampling height can be measured on the graduated tape.

HERMetric Sampler A-1 and GT1

- Easy installation on 1 Inch HERMetric vapour control valves with a quick connect coupling.
- The sampling bottle can be easily removed.

HERMetric Sampler A-2



HERMetric Sampler GT1



HERMetric Sampler A-1



1 Inch connection



HERMetric Compact valve C1-SS-W

2 Inch connection



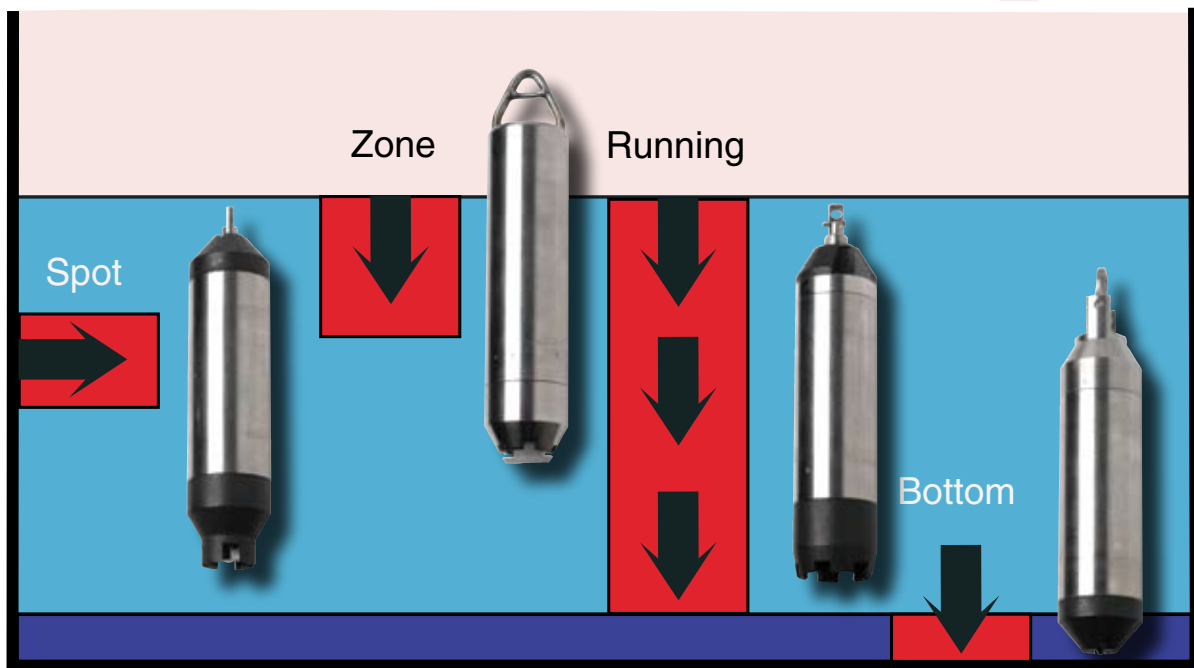
HERMetric Compact valve C2-SS-BL

TECHNICAL SPECIFICATIONS:

	Sampler GT1	Sampler A-2	Sampler A-1
Unit height:	1260 mm	802 mm	1142 mm
Weight:	4.2 kg	6.2 kg	3.2 kg
Tape length:	30 m, 100 ft	30 m, 100 ft	30 m, 100 ft
Capacity of zone sampling bottles:~	0.3 l	~ 0.5 l	~ 0.3 l
Type of gaskets:	FKM	FKM	FKM
Materials:	Stainless steel AISI 316, Brass, PTFE, PVDF		

Sampling bottles

All HERMetic samplers are delivered with a zone sampling bottle. Additional spot, bottom or running sampling bottles are available for 2 Inch and 4 Inch type of HERMetic samplers.



Spot bottle

Zone bottle

Running bottle

Bottom bottle

Special adapters

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



TS 55000

Used to connect all HERMetic units with 1Inch quick connect coupling to valves with UNF 2 1/2 Inch connection.



TS 55115

Used to connect all HERMetic units with 2 Inch quick connector to valves with UNF 2 1/2 Inch connection.

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



*Other special adapters on request

Accessories

HERMetric DIP 1

Standard device for checking bottom of dry tanks under restricted conditions. A 150 mm long graduated DIP weight is attached to a 30 metres long braided cotton line which is wound on a hasp. The storage tube is fitted with a quick connect coupling for fast and easy installation on all 1Inch quick connect nipples.

Weight: 1,5 kg

HERMetric DIP 2

For restricted hand dipping in pressurised tanks or tanks containing toxic fumes.

A 500 mm long graduated DIP rod, designed for easy penetration of sediments on tank bottom, is attached to a 30 m. long stainless steel tape, which is coiled on a reel graduated in combined metric and English unit. The storage tube is fitted with a quick connect coupling for fast and easy installation on all 1Inch quick connect nipples.

Weight: 3,3 kg

HERMetric DIP 2 Gas tight

The HERMetric DIP 2 is also available in closed, gas tight version. The gas tight construction of this unit avoids a pressure release from the tank and exposure to fumes during operation.

HERMetric OXY

As per IMO requirement on Tankers Safety and Pollution Prevention; oxygen level shall be determined before start of crude oil washing.

The HERMetric OXY samples inert gas (or any other gas) over full tank height without escape of gas to the atmosphere. Hollow brass plug fitted to the rubber hose of up to 30 meters length. Valve provided on hose before gas analyser (analyser not supplied) for air purging of hose. HERMetric OXY adapts to all 1 Inch quick connect nipples.

Weight: 3,8 kg

IMO requirements on Tanker Safety and Pollution Prevention, 1978 - resolution 15

Annex 6.6 : Before each tank is crude oil washed, the oxygen level shall be determined at a point 1 meter from the deck and at the middle region of the ullage space and neither of these determinations shall exceed 8 per cent by volume.

HERMetric PRESS

Tanker operation requires 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. Gauge is protected by thick rubber rim and mounted on top of vapour tight adaptor for closed tank operation. Quick connect coupling lower end for use with all 1 Inch quick connect nipples.

Weight: 1,5 kg



HERMetric Dip1



HERMetric Dip2

For connection on HERMetric valves with 2" connector, an additional adaptor can be supplied.



HERMetric OXY



HERMetric Press

The IMO requirements on Tanker Safety and Pollution Prevention, 1978 - resolution A.446(XI), § 4.4.4 : Means such as level gauges, hand dipping, and stripping system performance gauges as referred to in paragraph 4.4.8 shall be provided for checking that the bottoms of cargo tanks are dry after the crude oil washing. Suitable arrangements for hand dipping must be provided at the aftermost portion of a cargo tank and in three other suitable locations.

Vapour lock valves

HERMetic Compact Valves for connection of portable HERMetic equipment, specially approved & certified for marine application.

The **HERMetic Compact valves** are specially designed to fit all portable HERMetic equipment with a HERMetic quick connector and represent the base for the zero-ullage reference when installed at the appropriate height. They ensure a safe and reliable operation of all portable HERMetic units certified for use in classified areas. The valves are available in three different size 1 Inch, 2 Inch and 4 Inch. HERMetic valves are approved by all major classification societies.

HERMetic Compact valves C1-SS-W

1Inch full bore ball valve with 1Inch male BSP pipethread designed to support all portable HERMetic equipment with HERMetic 1Inch quick connector.

HERMetic Compact valves C1-SS-P

1Inch valve fitted with a special pressure cap cover. This cover is specially designed for use with hazardous chemicals and protect against inadvertent opening.

HERMetic Compact valves C2-SS-BL

2 Inch full bore ball valve made of corrosion resistant stainless steel with high Molybdenum content. The top part is designed to support HERMetic equipment with 2 Inch quick connector.

*Option: Special handle for pad lock.

Weight: 4,8 kg



C1-SS-W
TS 10055



C1-SS-P
TS 10080



C2-SS-BL
TS 10081



C2-SS-BL Female
TS 10085

All HERMetic 2 Inch ball valve are available with 2 Inch female thread or with DUJ multistandard flange.

DUJ multistandard flange fits following standards:

DIN PN 10 DN 50
DIN PN 16 DN 50
DIN PN 25 DN 50
DIN PN 40 DN 50
JIS 5K 50
JIS 10K 50
ANSI 150 lbs 2 Inch

Materials:

Stainless steel AISI 316 with minimal Mo content 2.7%, PTFE seats

Vapour lock valves

HERMetic Compact valves C2-SS-W

Same valve as HERMetic Compact valve C2-SS-BL except the cover, which is fitted with a 1 Inch quick-connect nipple identical to the one supplied on the smaller C1-SS-W Compact valve. This nipple matches with all HERMetic Units and Accessories with 1 Inch connection. The complete cover can be removed for connection of equipment with 2 Inch connector.

*Option: Special handle for pad lock.

Weight: 5,1 kg

Materials: Stainless steel AISI 316, PTFE seats



HERMetic Compact valves C2-SS-SEC

Same valve as HERMetic Compact valve C2-SS-BL except a doubly locked security cover which prevents any water ingress and protects against inadvertent opening. The cover is secured to the valve with a stainless steel cable. Specially designed for hazardous chemicals.

*Option: Special handle for pad lock.

Weight: 5,4 kg

Materials: Stainless steel AISI 316, PTFE seats



HERMetic Deck Valve A-4 SS

Specially designed heavy-duty compact ball valve totally made of stainless steel 316 and with Teflon gaskets. The deck flange is according to ANSI 150 lbs. standard.

This 4 Inch deck valve is provided with a swing away cover fitted with a 1 Inch quick-connect male coupling. This coupling takes all HERMetic equipment fitted with a 1 Inch female quick connector. For sampling, open the cover and install the HERMetic Sampler A-4 or Sampler GT4 on top of the valve. Three wing nuts are used to secure the cover or alternatively the sampler chamber.

Weight: 24 kg

Materials: Stainless steel AISI 316, PTFE seats

A-4 SS
TS 10053



New

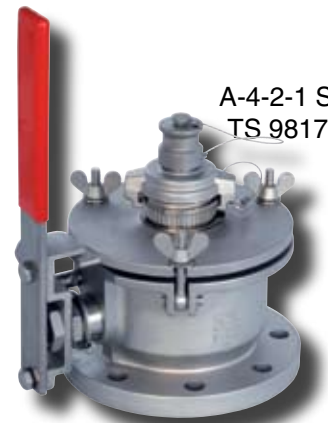
HERMetic Deck Valve A-4-2-1 SS

This valve has been specifically designed so that all the HERMetic equipment, with either 1", 2", or 4" connections, will be compatible. Organisations such as the American Petroleum Institute and the Energy Institute, recommend the size of the vapour valve to be 4" (100mm). The 4" valve will allow access to a larger number of gauging and sampling equipment than ever before, depending on the product and sample type required. Vapour valves smaller than 100mm in diameter are suitable for gauging but can severely limit the type of sampling equipment that can be used and, ultimately, the quality of the sample. The size and location of the vapour valve for closed system measurement and sampling is critical to the process. A valve of the proper size, located correctly, will allow more accurate measurements to be taken than one that is improperly located and of insufficient size. The new multi-purpose valve from Enraf Tanksystem gives the flexibility to gauge products from crude to chemicals. Most importantly, it will allow the use of sampling equipment with the capabilities of retrieving sample quantities from 0.33 litres to 1.8 litres in one single operation.

Weight: 25 kg

Materials: Stainless steel AISI 316, PTFE seats

A-4-2-1 SS
TS 98172



Intrinsically safe portable digital thermometer HERMetric Onecal

The **HERMetric Onecal** has been designed for use in hazardous environment with outstanding characteristics regarding safety, easiness of operation, accuracy, reliability and cost efficient maintenance. Onecal stands for: One reference point only for calibration. The reference point is the ice point which can easily be reproduced. The calibration is done by simply pushing a button. The characteristics of the RTD sensor are stored in the memory of the instrument and are the same for any individual sensor. Therefore a change of a sensor requires only an offset calibration. Replacing the cable only does not require a new calibration because of the built-in automatic cable compensation routine. Up to 9 individual values can be stored in the memory. An automatic average of the stored values can be achieved by entering the calculation menu. The ergonomic and rugged design of the housing allows for an easy and safe cable storage. The cable guides keeps the cable secured at all times. By counting the number of cable loops the fed cable length can be determined.

- **1 cable loop = 2 feet, 3 cable loops = 2 metres.**

- **Application**

Temperature measurement represents an important part in tank gauging since the density of petroleum products changes approximately by 0.1 % per degree Celsius. An error in the observed temperature will result in an error of the correction factor, which is used to calculate the standard volume. This electronic thermometer has been designed for field inspection of custody transfer of bulk liquids and meets all relevant standards in the industry.

- **Ambient temperature drift**
“SCS Surroundings Compensation System”

In most cases, a PET will be checked or calibrated at room temperature ambient conditions, i.e. around +20°C/+68°F, although they can work in a wide range of operational ambient temperatures. From areas such as Alaska to equatorial climates, these conditions can vary over a range of around +100°C/+180°F. This difference can result in another form of drift error. The new concept named “SCS Surroundings Compensation System”(Registered) of the Onecal incorporates an internal reference that is constant and does not depend on the ambient temperature over a wide operational range, i.e. from -20°C / -4°F to +60°C / +96°F. This means, the accuracy of the measurements made with the Onecal is unaffected by the ambient temperature, and this error is avoided.

- **Re-calibration when exchanging the PET cable**
“CRC Cable Resistance Compensation”

A traditional PET needs to be re-calibrated each time the cable is renewed, as the intrinsic resistance of the cable is incorporated in the temperature measurement sequence and any change in its value can affect the accuracy of reading, unless the unit is properly re-calibrated. The new concept named “CRC Cable Resistance Compensation”(Registered) of the Onecal measures the actual resistance of the cable every time the PET is used, and compensates for any change to eliminate this source of error. Changing the cable, whatever length it has, will not affect the accuracy of the thermometer and therefore does not require a re-calibration in a laboratory.



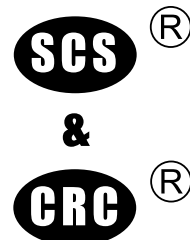
* Option Load 300 gr.



* Option
Fully-cushioned carrying box
This special box protects against any damage during storage and daily use .



With:



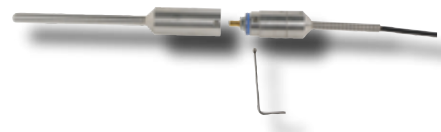
• **Response time**

This thermometer has a response time (time to achieve 90% of the final temperature) of 15 seconds in water and 35 seconds in lubrication oil under dynamic conditions.

• **Maintenance**

This instrument has been designed for users which require a high precision thermometer that is always ready to operate. Users can change the cable, the sensor or the display unit, and recalibrate it without the need of special tools or training. The unit cannot be calibrated incorrectly.

Cable replacement without needs of new calibration



The modular design of the HERMetric makes the exchange of components extremely easy and cost efficient as no special training or tools are required.

TECHNICAL SPECIFICATIONS:

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	± 0.15°C / ± 0.3°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 /	± 0.15°C / ± 0.3°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 individuals
Display :	LCD 8 digits, 10 mm character height
Power :	Approved 9 Volt battery
Battery saving:	aut. 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 / diam.5/8 " , 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 aluminium
Temperature sensor:	PT 1000 element



Hazardous environment Approvals:

ATEX	II 1 G EEx ia IIB T4
Factory Mutual	CL I, DIV 1, C&D, T4 and CL I, ZN 0, 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



Worldwide customer support

Enraf Tanksystem has service stations placed strategically around the globe to provide the broadest possible service stations network. Please contact the nearest service station, for fast servicing or repairs on HERMetric products. Our broad network will save you transport costs and precious time.

Please contact us for more information or feel free to visit our website at:

www.tanksystem.com

for the exact locations and addresses of our different service centers.

Enraf Tanksystem has the most complete WORLDWIDE network of agents in our industry. This allow us to be as close as possible to the customers and fulfil their needs and demands. With over 60 agents in this network, we can quickly address all your gauging and sampling requirements.



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