



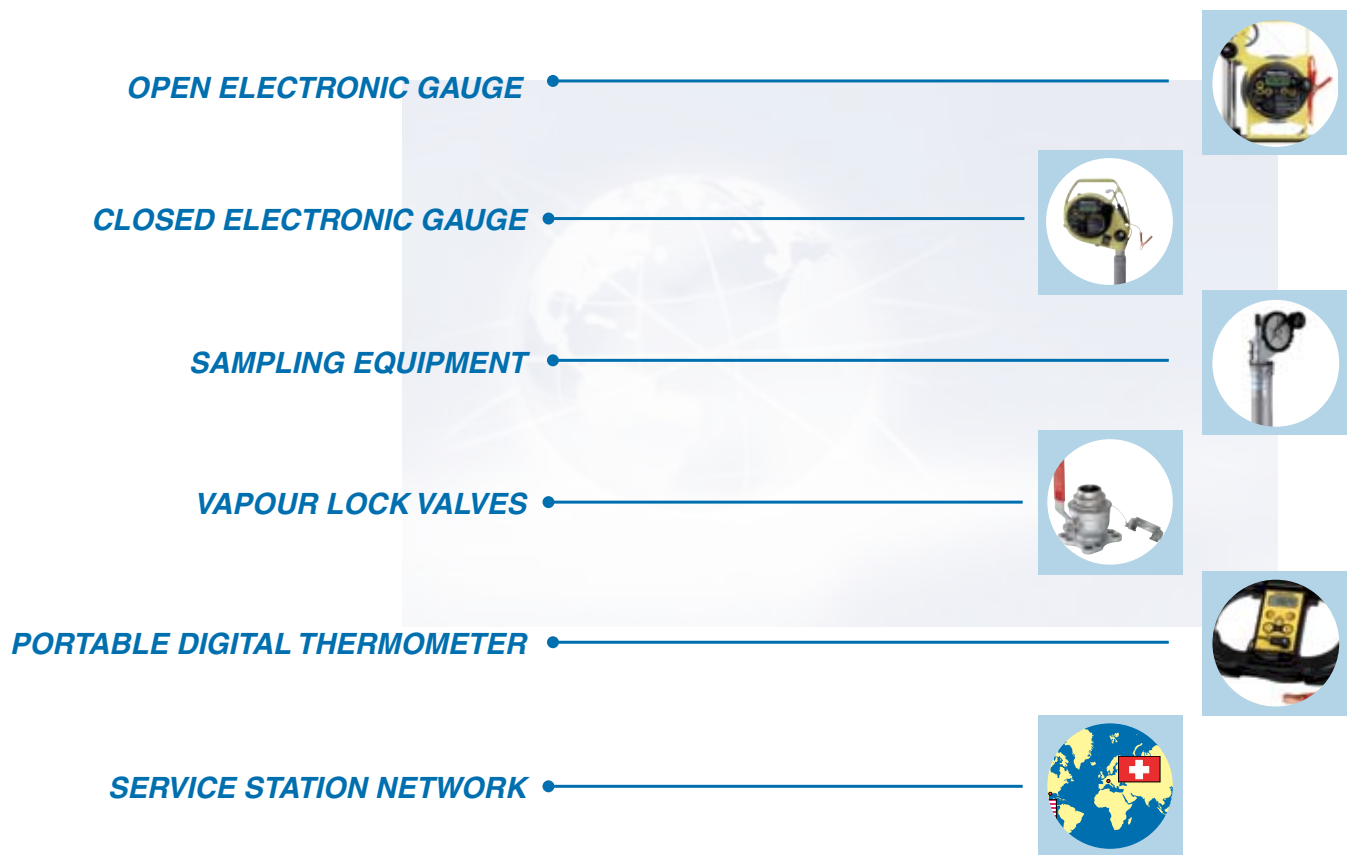
## **Product Overview**

### **For land based application**



**Honeywell**  
ENRAF TANKSYSTEM SA

# HERMetric portable level gauging and sampling equipment for land based 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. Enraf Tanksystem has also a subsidiary in the USA.

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.



# HERMetic portable tank measuring solutions for land based application

## CLOSED / GAS TIGHT OPERATIONS

HERMetic UTImeter Gtex 2000



HERMetic sampler GT & GT Chem



HERMetic sampler GTN Chem



HERMetic sampler GTX Chem



HERMetic Valve LC2

HERMetic Valve LC2 Female



HERMetic Compact Valve C2-SS-BL



HERMetic Compact Valve C2-SS-BL Female

\*2 Inch ball valves for gauging and sampling access

TANK TOP

## COMPLIANCE RULES

Equipment type	Function	Complies with
PEGD Portable electronic gauging device	Ullage level Temperature gauging Oil - water interface level	Length: ISO 4512, API Standard, IP Standard, GB/T 13236 Temperature: ISO 4268, API Standard, IP Standard, GB/T 8927
Portable liquid sampling device	Liquid sampling	ISO 3170, API STANDARD
PET Portable electronic thermometer	Temperature measurement	Temperature: ISO 4268, API Standard, IP Standard, GB/T 8927

## OPEN OPERATIONS



DIP HATCH WITH COVER

TANK TOP

# HERMetric UTImeter Otex

The HERMetric UTImeter Otex is a portable liquid level gauge designed to be operated under open conditions on petroleum and chemical storage tanks where open gauging is permitted. The unit is used for custody transfer, inventory control measurement and free water detection on shore tanks. The HERMetric UTImeter Otex is set on the open gauging hatch.

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

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

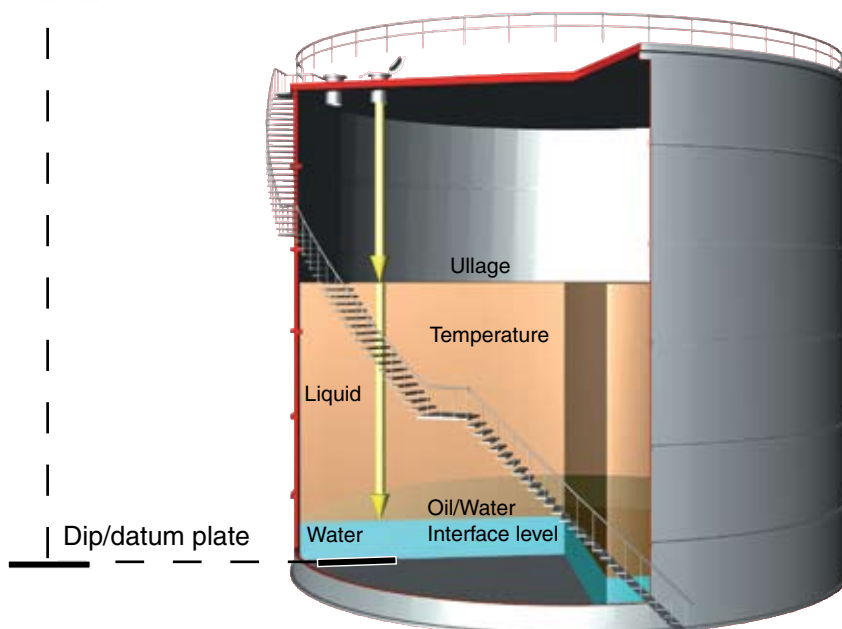
## Visc version:

With load 500 gr. for high viscous products or manual detection of dip/datum plate. Reference height measurement



## Complies with:

- ISO, API, IP
- EC Directive 89/336/EEC
- EC Directive 94/9/EC
- ATEX, Factory Mutual, CQST
- GB/T 13236, 8927



- ISO
  - 4512
  - 3170
  - 4268
- API
  - MPMS Chap 3.1A
  - MPMS Chap 7
  - MPMS Chap 8.1
- IP
  - PMM Part III-1
  - PMM Part IV"



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.



#### Low maintenance costs:

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

#### Benefits

- 100% repeatability of measures.
- No adjustment of the sensitivity required.
- Small diameter.
- Chemically resistant to corrosive liquids (Chem version).
- High mechanical stability.
- No degradation of the sensitivity due to ageing of the sensor.

## A GAUGE DEDICATED TO YOUR APPLICATION

### HERMetric UTImeter Otex

with 1 Inch sensing probe and FKM tape connector for the main applications in hydrocarbons.

### HERMetric UTImeter Otex 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 dip datum plate.

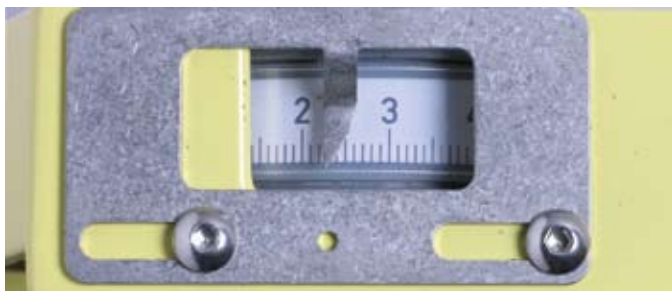


### HERMetric UTImeter Otex \*option French plate

with tightening mechanism to secure the units inside gauging pipes or dip hatches up to a diameter of 6 Inch. Special sensor protection to avoid damages of sensor head when touching the bottom of the tank.



Gauging pipe up to 6 Inch



Level reading on high accurate graduated tape  
+/- 1.5 mm over 30 meter

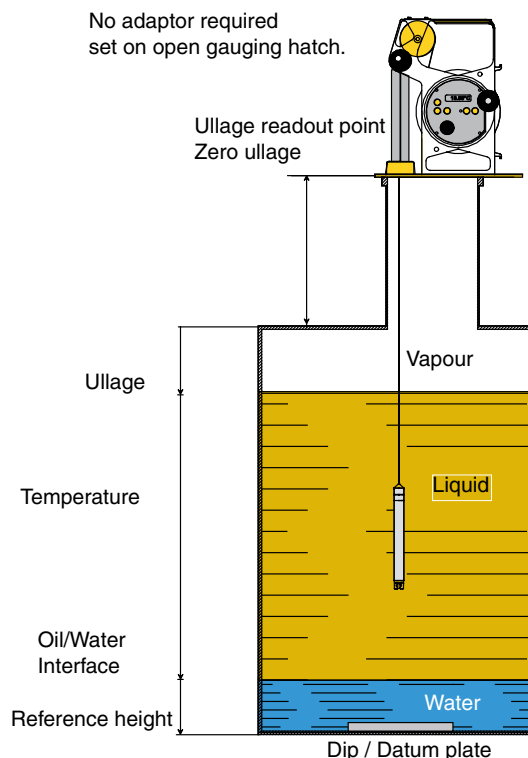
Mechanical tape cleaning device as  
standard on all UTImeter



Protection tube to avoid spills and keep  
working space clean

## Principle of installation

No adaptor required  
set on open gauging hatch.



## TECHNICAL SPECIFICATIONS:

Accuracy of ullage-interface detection:

± 2 mm (± 0.08" approx.)

Ullage, interface indication:

Audible and Visible selectable

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);

**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 meter / 50ft tape:

3.5 kg / 7.7 Lbs.

**Hazardous environments approvals**

ATEX

II 1 G EEx ia IIB T4 / Tamb 50°C

Factory Mutual

CL I, DIV 1, C&D, T4 Tamb 50°C and

CL I, ZN 0, AEx ia IIB T4 Tamb 50°C

CQST ExiaIIBT4

Zone 0 Ex ia IIB T4 / Tamb 50°C

China:

IECEX:

# HERMetric UTImeter Gtex 2000

The HERMetric UTImeter Gtex 2000 is a portable gas tight liquid level gauge designed to operate on top of closed petroleum and chemical tanks. The unit is used for custody transfer, inventory control measurement and free water detection on shore tanks. Connected to a HERMetric vapour control valve fixed on the tank, the HERMetric UTImeter Gtex 2000 avoids any gas release during operation.

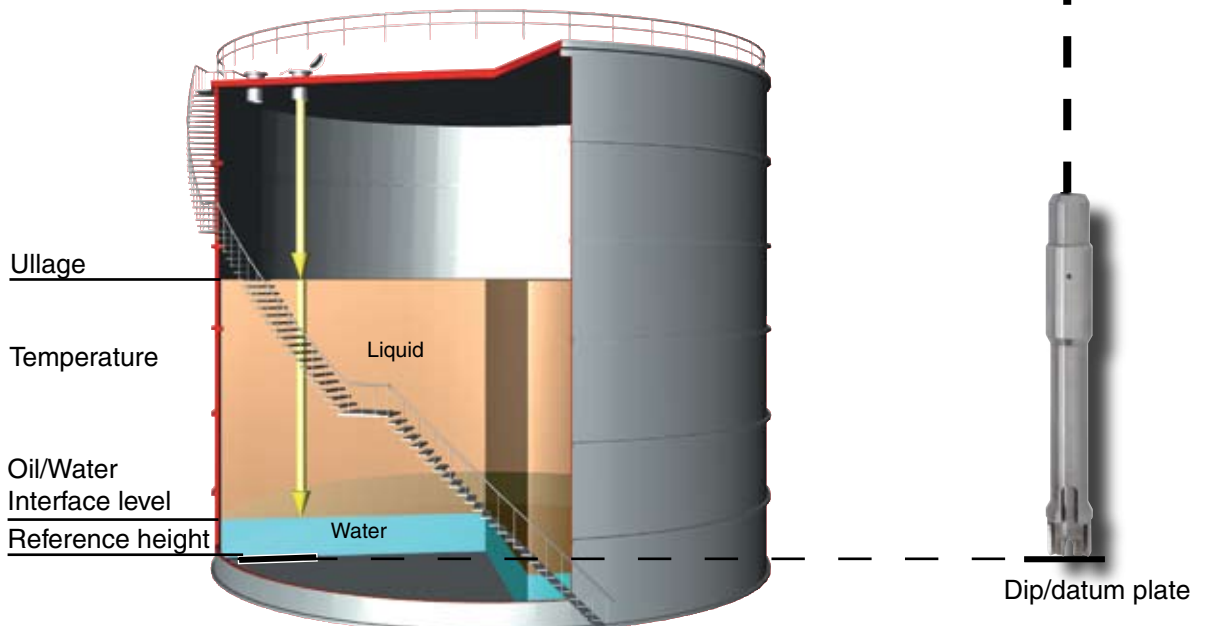
The unit enables 4 measurements in one single operation:

- Ullage
- Temperature
- Oil-Water interface level
- Innage, Reference height (manual detection of dip datum plate)

## A GAUGE DEDICATED TO YOUR APPLICATION:

### HERMetric UTImeter Gtex 2000

- with 2 Inch load on the sensing probe, recommended for operation in any kind of products. The weight of the probe permits a manual detection of the dip datum plate.
- The unit is fitted with FFKM gaskets and tape connector for use in any kind of corrosive liquids.



## ULTRA SENSING PROBE

### Benefits:

- Closed level gauging, no vapour escape
- Continuous temperature reading.
- 100 % repeatability of measures.
- High accuracy and stability.
- Chemically resistant to corrosive liquids.
- Easy access for battery exchange.
- Sensor exchange without need of new calibration.
- No temperature drift. No degradation of the sensitivity due to sensor ageing.
- Tape cleaning devices, window wiper and tape protection on all units as standard.
- Sensor fitted with load 500 gr. for high viscous products
- Heavy sensor permits manual detection of dip/datum plate. Reference height measurement

### Low maintenance cost:

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



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



**Level reading** on graduated tape through window



**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.



### Complies with:

- ISO, API, IP
- EC Directive 89/336/EEC
- EC Directive 94/9/EC
- EC Directive 96/98/EC

### Approved by:

- ATEX, Factory Mutual, CQST
- National authorities, (USCG, MSA, ..)

### ISO

- 4512
- 3170
- 4268

### API

- MPMS Chap 3.1A
- MPMS Chap 7
- MPMS Chap 8.1

### IP

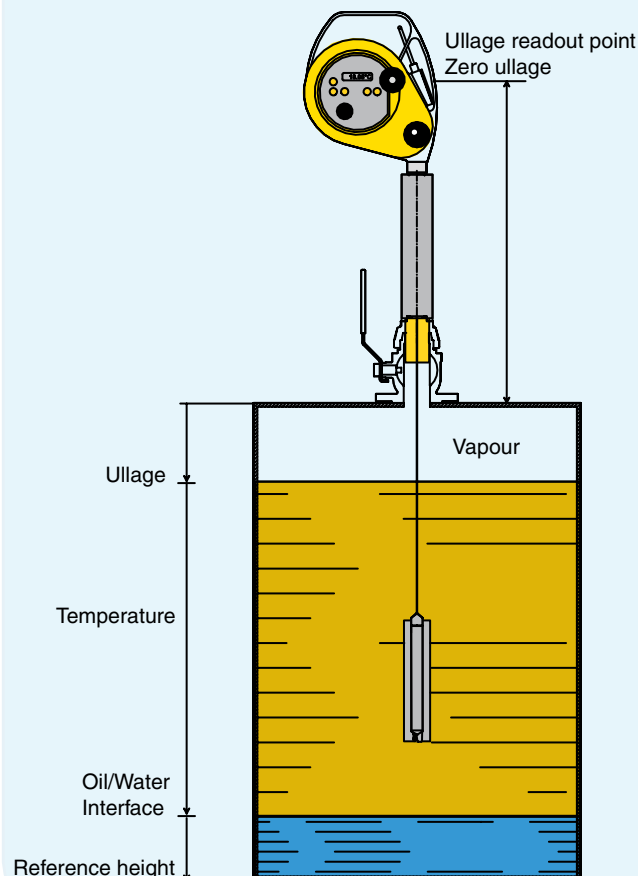
- PMM Part III-1
- PMM Part IV"



## 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:	30 m/100 ft
Tape graduation:	Metric/English
Tape resolution:	1 mm / 1/16"
Tape accuracy:	± 1.5 mm/30 m (±1/16"/100 ft approx.)
<b>Meets API MPMS Chap 3.1A and ISO 4512 requirements</b>	
Temperature accuracy:	± 0.1°C (0°C to 70°C); ± 0.2°F (32°F to 158°F)
<b>Meets API MPMS Chap 7 request</b>	
<b>Meets ISO 4268 , IP PMM Part IV</b>	
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 30 meter / 100ft tape:	6.7 kg / 14.3 Lbs.
<b>Hazardous environments approvals</b>	
ATEX	II 1 G EEx ia IIB T4 / Tamb 50°C
Factory Mutual	CL I, DIV 1, C&D, T4 Tamb 50°C and CL I, ZN 0, AEx ia IIB T4 Tamb 50°C CQST ExiaIIBT4
China:	Zone 0 Ex ia IIB T4 / Tamb 50°C
IECEX:	

### Principle of installation



# HERMetric Sampler GT or Sampler GT Chem

The HERMetric Sampler GT or Sampler GT 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 GT or Sampler GT Chem the transfer of the liquid from the sampling bottle to a laboratory bottle occurs by gravity through a special distribution block. The versions GT and GT Chem can be fitted to any kind of 2 Inch ball valve with special adapters.

## HERMetric Sampler GT

- Available adaptors allowing a connection to any kind of foreign valves.
- With FKM gaskets for the main applications in hydrocarbons.

## HERMetric Sampler GT Chem

- Available adaptors allowing a connection to any kind of foreign valves.
- With FFKM gaskets recommended for operation in corrosive liquids.
- All samplers are fitted with a quick connect coupling allowing easy installation on all 2 Inch HERMetric Compact Valves.
- The sampling height can be measured on the graduated tape.



HERMetric Sampler GT  
or Sampler GT Chem



## TECHNICAL SPECIFICATIONS:

### HERMetric GT

Maximum tank overpressure :	0,3 bar
Unit height:	1016 mm
Weight :	8.8 kg
Tape length :	30m / 100 ft
Capacity of sampling bottle :	Approx. 0.5 l
Type of gaskets:	FKM
Materials:	Stainless steel AISI 316, PTFE, PVDF

### HERMetric GT Chem

0,3 bar
1016 mm
8.8 kg
30m / 100 ft
Approx. 0.5 l
FFKM

**Hazardous environments approvals**  
ATEX

II 1 G c IIB T6

II 1 G c IIB T6

# 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.

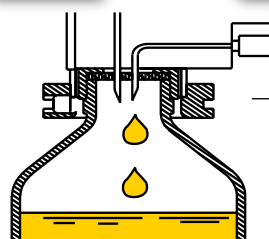
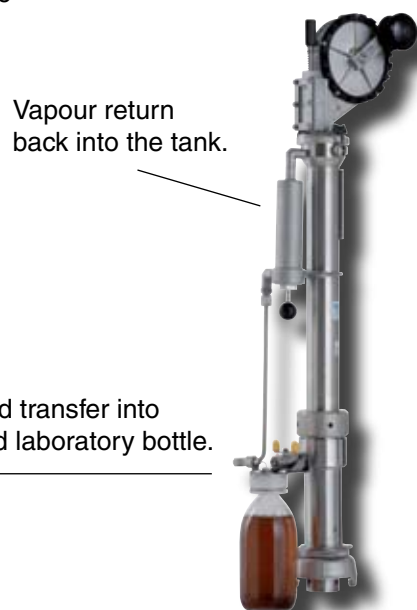
For the **HERMetric Sampler GTN Chem**, the sample can be transferred under closed condition. This transfer guarantees the integrity of the sample, since the liquid is never in contact with the atmosphere. A closed vapour recovery system dispatches the vapours back into the tank during transfer of the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



Closed transfer into sealed laboratory bottle.

ISO  
3170

API  
MPMS Chap 8.1

## TECHNICAL SPECIFICATIONS:

### HERMetric GTX Chem

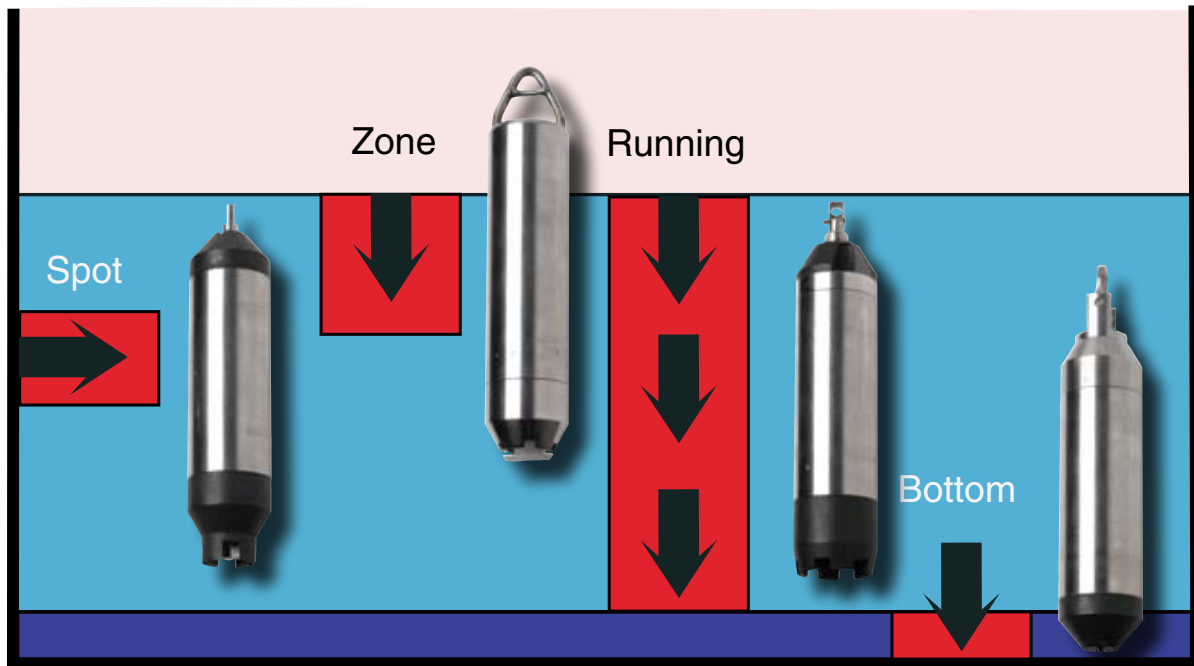
Maximum tank overpressure :	0,3 bar
Unit height:	800 mm
Weight :	5.3 kg
Tape length :	30m / 100 ft
Capacity of sampling bottle :	Approx. 0.5 l
Capacity of laboratory bottle :	
Type of gaskets:	FFKM
Materials:	Stainless steel AISI 316, PTFE, PVDF
<b>Hazardous environments approvals</b>	
ATEX	II 1 G c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

### HERMetric GTN Chem

Maximum tank overpressure :	0,3 bar
Unit height:	801 mm
Weight :	7.5 kg
Tape length :	30m / 100 ft
Capacity of sampling bottle :	Approx. 0.5 l
Capacity of laboratory bottle :	0.47 l, 16 oz
Type of gaskets:	FFKM
Materials:	
<b>Hazardous environments approvals</b>	
ATEX	II 1 G c IIB T6

# Sampling bottles

All HERMetric samplers are available with different sampling bottles. A selection of zone, spot, bottom or running sampling bottles is available for 2 Inch and 4 Inch type of HERMetric samplers. Each sampler can be ordered with any type of available bottle.



Spot bottle

Zone bottle

Running bottle

Bottom bottle

# Special adapters

Storage tubes and adapters for HERMetric equipment (gauges and samplers) designed for connection on some existing non-Tanksystem valves already fixed installed. 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 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.

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



Other special adapters on request



# Vapour lock valves

## HERMetric Compact Valves for connection of portable HERMetric equipment.

The HERMetric Compact valves are specially designed to fit all portable HERMetric equipment with a HERMetric 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 HERMetric units certified for use in classified areas. The valves are available in three different size 1 Inch, 2 Inch and 4 Inch.

### Materials:

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

### HERMetric Compact valves C1-SS-W

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



C1-SS-W  
TS 10055

### HERMetric Compact valves C1-SS-P

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



C1-SS-P  
TS 10080

### HERMetric 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 HERMetric equipment with 2 Inch quick connector.

\*Option: Special handle for pad lock.

Weight: 4,8 kg

### HERMetric Compact valves C2-SS-BL Female

This valve is also available with 2 Inch female thread



C2-SS-BL  
TS 10081

All HERMetric 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



C2-SS-BL Female  
TS 10085

### HERMetic valves LC2 with flange

Specially designed 2 Inch bore ball valve for industrial application. The top part of the HERMetic Valve LC2 supports all portable HERMetic equipment fitted with 2 Inch quick connector. This valve is available with 2 Inch female thread or with DIN PN 10/16 DN 50 flange. Equipment connected to this valve have to be fitted with an earth strap to enable proper earthing of the gauge or sampler.

Materials: Brass Chromium plated, Brass Nickel plated, Brass  
Weight: 5.5 kg

The HERMetic Valve LC2 fits on counter flange with following standards:

- DIN PN 10 DN 50 (with screws M16)
- DIN PN 16 DN 50 (with screws M16)
- DIN PN 25 DN 50 (with screws M16)
- DIN PN 40 DN 50 (with screws M16)
- ANSI 300 lbs 2 Inch (with screws M12)
- ANSI 600 lbs 2 Inch (with screws M12)



LC2 with flange  
TS 10178

LC2 Female  
TS 10179

### HERMetic valves LC2 Female

This valve is also available with 2 Inch female thread



# 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 attached sampling 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. Pick the type of sampling bottle fitting your needs. See page 16.

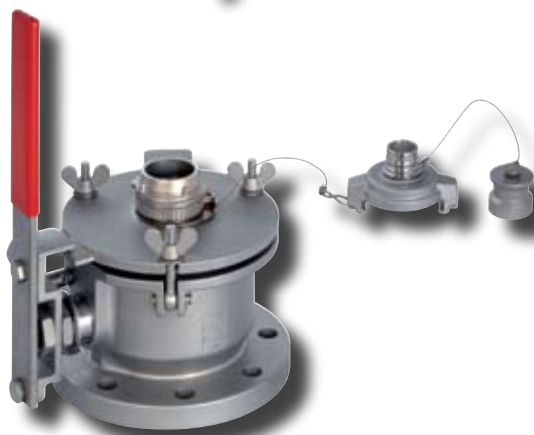
The **HERMetric Sampler A-4** is dedicated for applications where restricted sampling is accepted and more than 0.5 litre of liquid is needed.

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



## 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	
<b>Hazardous environments approvals</b>		
ATEX	II 1 G c IIB T6	II 1 G c IIB T6

### HERMetric 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 HERMetric equipment fitted with a 1 Inch female quick connector. For sampling, open the cover and install the HERMetric 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**

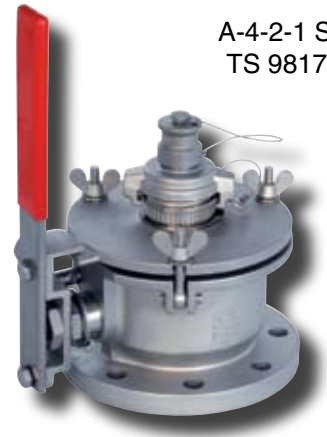
### HERMetric Deck Valve A-4-2-1 SS

This valve has been specifically designed so that all the HERMetric 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 HERMetic Onecal

The **HERMetic 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.

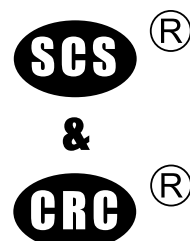


\* Option

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 new calibration



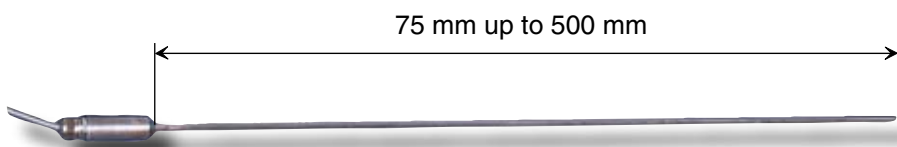
The modular design of the HERMetric makes the exchange of components extremely easy and cost efficient as no special training or tools are required.

## HERMetric Onecal without frame, 2 m / 7 ft cable

The HERMetric Onecal can also be used in laboratories for verification of existing temperature measuring equipment. The high accuracy of this thermometer allows a reliable temperature reading. The HERMetric Onecal can be supplied without frame and with a 2 m / 7 ft cable. This type of unit can very well be used for temperature verification anywhere in a laboratory or on a railtrain tank if the opening is bigger than 16 mm / 5/8" in order to allow the penetration of the sensor.



Alternative to next page specifications  
 Measurement range: - 40°C to 100°C  
 Probe size: up to 500 mm long  
 Tip diameter: 5 mm



## 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 316L
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](http://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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