

Emulsion Profiler *for oil slop-oil gasoline*

OVERVIEW

BAGGI® propose reliable technique to optimize the fluid phase monitoring and interface level measurement for oil, water and emulsion. The product line is provided in the configuration for the specific application in compliance with fluid, process conditions, area classification, environmental conditions, the interface to be measured and its range to guarantee the scope of the measurement (scope of work).

SENSEEVOLUTION® **MOBI**® EMP product is optimized for water/oil/interface measurement and detection in oil and process water in several application to guarantee performance in storage tank, water analysis and save cost in during operation control and maintenance. It is the integration of reliable technology in solution designed to meet the customer/process requirement. A wide range of series through mechanical connections, enclosure, outputs and options are available as per the final configuration designed.



Category	Model	Series
ALD analysis in liquid	EMP	SL09SVEMP

PROCESS and APPLICATION

Applicable in several industry process where there is a particular attention for Solutions to improve the inspection in tank-vessel to monitor the interface level of the medium (oil, water, emulsion, gas) in the production & water treatment process. Using Wave High Frequency Technique is necessary take in consideration the range required and the composition of the fluid where some compound have effect in the performance of the measurement. **SENSEEVOLUTION**® product line is the integration of reliable technology in own Solution designed to meet the customer/process requirement in compliance with scope of work also for critical requirement.

- ❑ Emulsion concentration detection
- ❑ Fluid control at outlets and delivery points
- ❑ Fluid level monitor in navy storage tanks
- ❑ Marine and navy for wash tank operations
- ❑ In-tank blending and mixing control
- ❑ Level gauges/transmitter calibration
- ❑ Floating Roof tank
- ❑ Separator optimization
- ❑ Skimmer
- ❑ Water level detection in storage tanks
- ❑ Track and Rail level fluid control
- ❑ INDUSTRIES oil&gas, power plant generation iron&steel, water industry

BENEFITS and ADVANTAGES

- ❑ direct water in oil concentration measurement
- ❑ rapid and accurate determination of the oil/water interface
- ❑ suitable for slop oil
- ❑ technology provides long term calibration stability even in severe operating conditions
- ❑ completely portable and lightweight
- ❑ safe operation, low maintenance
- ❑ at any depths up to 30 meters
- ❑ no sampling required
- ❑ rugged construction for heavy duty outdoor operation
- ❑ the probe is fully dipped into the liquid and allows measurements of real water concentration in oil at any depth (compatible with cable length) without any sample extraction
- ❑ the probe features a robust design for heavy duty year round indoor or outdoor operation, even in severe climatic conditions
- ❑ the electronic has a backlight LCD for a high visibility even during night time operations
- ❑ choice for wetted part materials: stainless steel for general industrial use, Ni-Span-C for most demanding applications, and Hastelloy for applications where ultimate corrosion resistance is required
- ❑ easy and quickly installation/maintenance without needing any special tools
- ❑ completely reproducible for replacements designed also for hazardous area ATEX FM CSA

TECHNOLOGY

The **MOBI**® EMP portable process oil in medium and process water analyzer are meticulously designed to accurately analyze (or detect) in continuous **oil in water / water in oil**. The units are provided with standard 4-20mA outputs and programmable alarm relay contacts for shut-in valves. In addition, an LCD displays, easy-access push-button switches on the front for easy human interface..

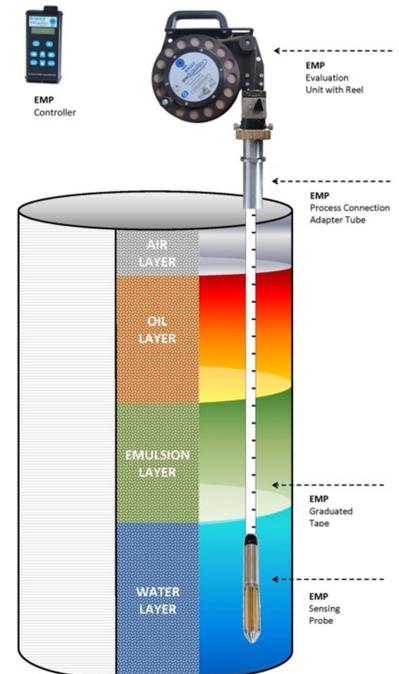
The **Emulsion Profiler Portable Unit** measures directly the water concentration using a technology based on multifrequency energy absorbance. The measurement is based on the liquid *watercut* value (ratio between water volume and total liquid volume).

A typical usage is the determination of emulsion level profile in storage tanks. This technology is minimally affected by density, pressure, temperature and viscosity.

No troublesome, expensive and critical sampling required. The sensor (sensing probe) is submersed at any required level reading the water concentration at the point directly in the liquid. The **device** measures **directly water concentration / emulsion concentration** (0 to 100% water by volume) using a principle based on multifrequency energy absorption technique, which is widely capitalized in Desalter and Dewatering applications.

Easy maintenance and calibration on site are required. The instrument is not sensitive to plant vibrations , high variations in terms of temperature, level, mix or turbulence.

The model philosophy is in the right configuration in compliance with the scope of supply, customer requirement and process compliance: interface [%], cut (water) [%], detection [on/off] and level [mm].



ARCHITECTURE and ACCESSORIES

Depending by configuration, the **MOBI**® EMP is an autonomous stand-alone system with almost unlimited possibilities. The Unit will meet operator requirements in any case.

This instrument is a portable emulsion/level profiler composed by submersible sensor (sensing probe) with own portable handle enclosure connected, 30 meters waterproof cable (standard) and a remote handheld controller. The connection between the two component is easy using Bluetooth protocol without any additional cable. A back-lighted LCD facilitates night-time operation.

EMP is available in one basic article that may be configured as per customer/process requirement getting on-demand models. Each model is configured and tested with the aim of guaranteeing **the best performance in the water interface and emulsion profile detection** following specific user requests or process and fluid application requests. Each article depends on the requested accuracy and the kind of sample where the measure has to be taken (slop-oil, dry oil, petrol, diesel, % of hydrocarbon, % of salt water, chemicals ...) and on the parameters that have to be detected (ullage level, temperature gauging, oil-water interface level, emulsion profile, ..).

EMP may be ordered in several configuration: basic standard, with the software upgrade, as per on-demand design, and/or with specific accessories, for a turn-key Solution. For each Unit delivered, assembled and tested is done at BAGGI warehouse, in compliance with the customer purchase order / requirement. The reference of the Article No. has been kept always the same since it identifies the device.

The specific configuration of the Unit delivered, for example in reference to the software upgrade and/or accessories added, is stored in the **serial number** of the unit to keep the traceability of the Unit delivered. In the standard documentation included with each Unit, there is also BAGGI's Declaration of Conformity that show the configuration of the Unit delivered in reference its serial number.

ARTICLE	MODEL	SERIES	DESCRIPTION	COMPOSED Q.TY/BY
SL09SVEMPF0001	EMP	SL09SVEMP	Emulsion Profiler Portable Unit (basic standard device)	N.1 Controller (with display) N.1 Evaluation Unit with reel N.1 Graduated Tape 30MT N.1 Sensing Probe (SL09SVEMP1003) N.1 Battery
SL09SVEMP1001	\	\	Adapter Tube MMC	N.1 Adapter Tube
SL09SVEMP1002	\	\	Adapter Nipple MMC	N.1 Adapter Nipple
SL09SVEMP1003	\	\	Sensing Probe (standard sensor)	N.1 Sensing Probe
SL09SVEMP1004	\	\	Valve Type "B" MMC	N.1 Valve Type "B"
SL09SVEMP1005	\	\	Ground Cable	N.1 Ground Cable
SL09SVEMP1006	\	\	Wipers maintenance kit MMC	N.1 Wipers maintenance kit
SL09SVEMP1007	\	\	Wipers complete module MMC	N.1 Wipers complete module
SL09SVEMP1008	\	\	Software UpGrade.1 / multi-calibration stored	N.1 Software UpGrade.1
SL09SVEMP1009	\	\	Software UpGrade.2 / customer on-demand	N.1 Software UpGrade.2
SL09SVEMP1010	\	\	Carrying Case	N.1 Carrying Case
SL09SVEMP1011	\	\

Options (ask BAGGI for your application):

- Continuous measurement in process (pipeline or vessel or tank)
- Wetted Material
- SCS® sampling conditioning system (take off sample probe, sample-line, sampling kit)
- Validation Kit
- Stand Alone mounting Skid / Rack / Shelter for indoor and outdoor installation
- Hazardous area compliance (Exd or Exp)

For severe requirement or turnkey solution, available different design through SENTRI® BASE® SYSTI® and SKIDI® product line



SPECIFICATION

SERIES			
SL09SVEMP			
Dimensions	190 x 25 mm (sensor) 400 x 270 x 80 mm (evaluation unit, level block) 180 x 80 x 40 mm (controller)		
Weight (appr.)	0.3 Kg (sensor) 3.0 Kg (evaluation unit, level block) 0.7 Kg (controller)		
Enclosure	IP67 (carrying case)		
Power Supply	NiMH-accumulator 3,6V - 2500 mAh / 5 hours (evaluation unit, reel) NiMH-accumulator 3,6V - 1500 mAh / 10 hours (controller)		
Operating time without charging	12 hours (appr.)		
Ambient Temperature	-30 ... +50 °C (-22 ... +122°F)		
Fluid	Slop Oil, Dry Oil, Process Water ...		
Depth of submersion	Up to 30 meters (up to 100 ft)		
Parameter	Water / Emulsion	Level	Temperature
Measuring Ranges (standard) (other available on request)	0 ... 100% H2O by Vol.	0 ... 30 meters	-40 ... +70°C (-40 ... +158°F)
Accuracy under calibration	+/- 1% Referred to water in oil concentration	+/- 010mm +/- 300mm Depends by total height	+/- 0.2°C (+/- 0.4°F)
Resolution	0.1%	01mm 10mm Depends by total height	+/- 0.1°C (*/- 0.2°F)
Tecnology	Microwave Multi-High Frequency Absorbance		
Fluid Temperature Compensation	Yes, automatic		
Warm-up time	Ready to be used (after calibration checking)		
Data handling	Local memory for 998 results with data/time stamped		
Operator Interface	Backlighted LCD display Bluetooth for data transfer to printer or to PC		
Safety Classification	Intrinsically Safe CERTIFICATE ATEX No. 11ATEX0181X II 2G (1G) Ex ib [ia] IIB T4 (Ga) – Evaluation Unit / Sensor II 2G Ex ib IIB T4 - controller		



(*1) Accuracy values are related to laboratory test.
It is required to calibrate the instrument with the desired emulsion



APPLICATION

**EMP Emulsion Profiler Portable Unit
Application.01**

In-tank blending and mixing control
Water level detection in storage tanks
Emulsion concentration detection



**EMP Emulsion Profiler
Portable Unit Application.02**

Marine and navy for wash tank
operations
Fluid level monitor in navy



**EMP
Application.03
Off-Shore**

