

ROCSOLE TANK SOLUTIONS

- ✓ Avoid Unexpected Shutdowns by Detecting Sand & Solids
- ✓ Locate Emulsions & Interfaces to Reduce Waste
- ✓ Cost Effective Full Tank Mobile Profiling



Common problems inside storage tanks are related to emulsion, water and solids as they cause production stops and may damage equipment if they enter the outlet.

Knowing the tank's level, layers and their interfaces are vital for assuring continuous production and high-quality throughput. Any and all problems regarding storage tanks can rack up the costs to a sky-high number, whether it is from treatment costs, deferred production, unplanned- or even emergency- shutdown.

Rocsole's solutions allows the operator to get the process insights of the tank emulsion layers and level interfaces without any interruption due to complex process fluids. The sensors are virtually unaffected by surface fouling and contamination and works in harsh environments providing rich data allowing for real-time monitoring and predictive analytics. We provide process insights for stable emulsions, rag layers, bitumen, froth layers and solids buildup.

rocsole
SEE BEYOND.

LIQUID IN-TANK INSPECTION SERVICES

KEY FEATURES:

- Full tank profiling (gas, liquids, solids)
- Works contaminated
- Detailed analysis of emulsions
- Rapid analysis (10 cycles per second)
- No re-calibration required
- Signals are always backed up with 3D imaging

We also use Tank Profiler to provide Liquid In-Tank Inspection service, in which we scan the tanks contents on-site and deliver the results soon afterwards.

This is the easiest way to inspect the contents of one or more tanks in one go at a minimal cost in processes where no real-time results are required.

The services can be done on a permanent basis, on a regularity or by-demand. Rocsole is the first company bringing tomographic imaging to the oil & gas industry enabling a new level of process optimization for challenging operations to provide better product quality, higher output, reducing operational costs and improving safety levels.

AVOID H₂S SAFETY RISK WHEN WORKING WITH MANUAL SAMPLES IN TANKS

NON-NUCLEONIC
→SAFE, IMPROVED HSE
→REDUCED ADMIN



OIL FIELD LIFE CYCLE OPTIMIZATION



INCREASED PRODUCTION THROUGHPUT



REDUCED NEED FOR SHUTDOWNS & OPTIMIZED CHEMICAL COSTS



IMPROVED SEPARATION EFFICIENCY BY OPTIMIZING THE EMULSION



REAL-TIME PROCESS OPTIMIZATION



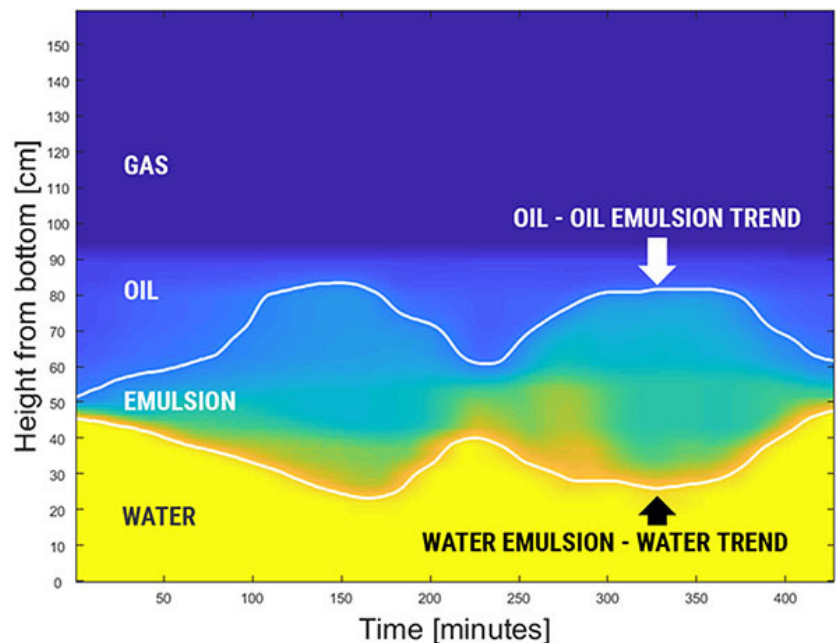
IMPROVES ASSET ENVIRONMENTAL COMPLIANCE



LOW MAINTENANCE



24/7 DATA MONITORING
ALL DATA TO DATABASE



In Liquid In-Tank Inspection (LITI), each of the tanks' contents are scanned and the results delivered later.

TANK PROFILER

PERFORMANCE

Technology	Electrical Tomography	Resolution	50 mm (2")
Level Accuracy	± 50 mm (application specific)		
Max Measurement Length	Cable length 40 meters (profiler measurement length 2880 mm)		
Minimum Nozzle Size ID	100 mm (4")		
Pressure Range	Up to 5 bar (73 PSI)		
Probe Temperature Range	Up to 90 °C (194 °F)		

ELECTRICAL CHARACTERISTICS

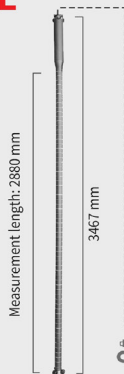
Supply Voltage	24Vdc	Output	- Modbus/TCP
Electronics	24Vdc @ 3A		- Modbus/RTU (RS485 & RS232)
Computer	24Vdc @ 3A		- Analog 4-20mA

MECHANICAL CHARACTERISTICS

	Weight	Material	Zone
Probe	xx kg	Varies	Zone 0
Electronics Cabinet	79.8 kg	Varies	Zone 1
Computing Unit		Varies	Safe Zone

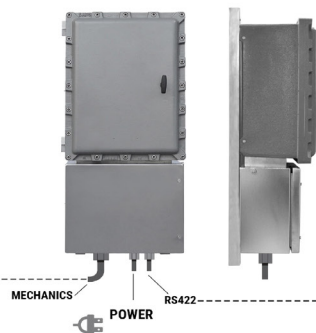
ZONE 0

MECHANICS PROBE

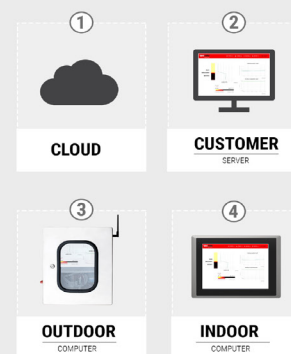


ZONE 1

ELECTRONICS IECEX



SAFE ZONE



TOMOGRAPHIC
IMAGE

INTERFACE
TRENDS

ENVIRONMENTAL

Approvals	IECEX (optional: CSA & ATEX)	Operating Temperature Sensor	-40 .. +90 °C
		Operating Temperature Electronics	-20 .. +50 °C
Installation	To be agreed with customer	Operating Temperature Computing Unit	-40 .. +50 °C
Compliance	EN	System Storage Temperature	-40 .. +50 °C

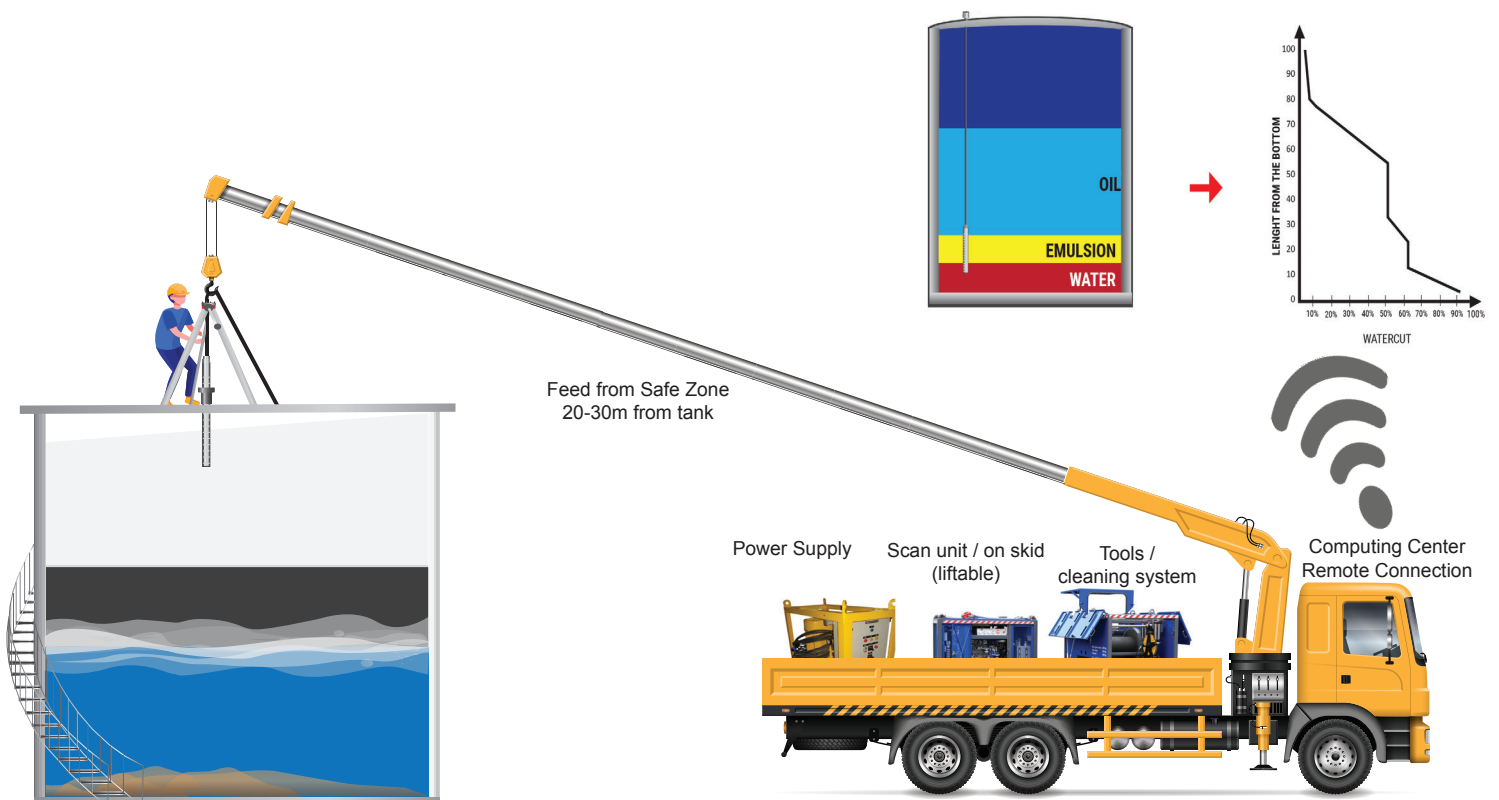
ADDITIONAL INFORMATION

Spares	Please contact Rocsole
Product Code	LITI-64-IECEX-XXXXX-LP-LT
Software	Rocsole Webroc

CUSTOMIZABLE MOBILE UNIT

KEY FEATURES:

- Full tank profiling (gas, liquids, solids)
- Works contaminated
- Detailed analysis of emulsions
- Rapid analysis (10 cycles per second)
- No re-calibration required
- Signals are always backed up with 3D imaging



MOBILE TANK PROFILER

PERFORMANCE

Technology	Electrical Tomography	Resolution	12 mm (0.xx")
Level Accuracy	± 100 mm (application specific)		
Max Measurement Length	Cable length 40 meters (profiler measurement length 360 mm)		
Minimum Nozzle Size ID	50 mm (2")		
Pressure Range	Up to 5 bar (73 PSI)		
Probe Temperature Range	Up to 90 °C (194 °F)		

ELECTRICAL CHARACTERISTICS

Supply Voltage	24Vdc, Can be battery operated from safe zone	Output	- Cloud based service
Electronics	24Vdc @ 3A		
Computer	24Vdc @ 3A		

MECHANICAL CHARACTERISTICS

	Weight	Material	Zone
Probe	2.5 kg (+ optional weight 3.5- 7 kg)	Varies	Zone 0
Electronics Cabinet	44.9 kg	Varies	Zone 1
Computing Unit		Varies	Safe Zone

ZONE 0

ZONE 1

ZONE 2 / SAFE ZONE



ENVIRONMENTAL

Approvals	IECEx (optional: CSA & ATEX)	Operating Temperature Sensor	-40 .. +90 °C
		Operating Temperature Electronics	-20 .. +50 °C
Installation	To be agreed with customer	Operating Temperature Computing Unit	-40 .. +50 °C
Compliance	EN	System Storage Temperature	-40 .. +50 °C

ADDITIONAL INFORMATION

Spares	Please contact Rocsole
Product Code	LITI-16-IECEX-14404-LP-LT
Software	Rocsole Webroc

ROCSOLE is the world's leading provider of tomographic equipment for the process industries. We have invented and innovated the area of robust and reliable in-situ sensors paired with our software using electrical tomography through our own design, development and testing. We have carried out a vast number of trials and pilot project with customers. Our solutions are industrial scale with fast-acting and high-resolution technology capable of determining and monitoring deposits and emulsified liquids in real-time for critical processes.

Our solutions are used in multi-industry. Oil & Gas has challenges with emulsion layers and quick deposit build-ups. The similar challenges are found not only in Pulp & Paper, Food Processing, Detergent production (FMCG), Chemical Industry but also in the Semiconductor Production Process. ROCSOLE™ is commercially active in these sectors, with the focus area being Oil & Gas.

ROCSOLE™ has a broad IP portfolio with worldwide granted patents. We are backed by Shell Ventures, Repsol Energy Ventures, Equinor Energy Ventures as well as the Finnish TESI investment company.

For more information, visit
www.rocsole.com

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