



1.0 solliDetect

Sand Management Solutions

by Award-Winning Finnish Innovator Rocsole





FOUR AREAS MOST OPERATION MANAGERS ARE CONCERNED ABOUT:

Sand accumulation in processes can cause...



Reduced Throughput

Undetected solid buildup in pipelines and process vessels reduces the operating capacity.



Reduced Production Performance

Solids movement can cause damage to infrastructure such as pipeline, pumps, valves, etc.; increase the potentials for corrosion.



Expensive Downtimes

Blockages inside pipelines and process vessels may lead to expensive unplanned shutdowns.



Unnecessary Safety Risks

Corrosion & erosion of pipelines may lead to leakage of process fluids.

Unplanned shutdowns and maintenance can be made a distant memory.

The current solutions lack reliable insights and data; this prevents the operators from relying on the information and thus taking timely actions.

Operation teams need relevant data to improve performance and take corrective measures.

You deserve a better tool that keeps you well-informed 24/7.

Remove your processing uncertainty.

Shape the future of your operation with a reliable and robust patented award-winning solution.



Get your processing to the next level with SeeBeyond

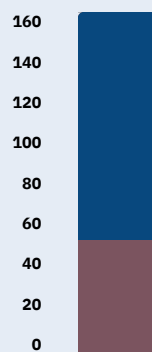
Our electrical tomography-based SeeBeyond technology provides a real-time permittivity /conductivity profile, generating an overall picture of what is happening inside for typically data starved operating environments.

The interpretation is based on actual real-time data. Now you can SeeBeyond the walls of vessels or pipelines and identify when changes happen.

Our Electrical Tomography technology is robust and reliable as it can operate despite contamination (fouling). The technology enables the measurements of interface levels for solids buildup and liquids - 24/7 updated for your information and monitoring.



SEE HOW IT WORKS: <https://rocsole.co/sdworks>



Liquids

Solids



Your Operational Success Unleashed

**Do not accept sand
contamination in your
operations any longer.**

**Our clients' feedback (and even more:
their results) shows repeatedly:**

**Existing customers say
Rocsole SoliDetect 1.0 is
enabling a reliable solids
monitoring system for
improved process control.**



Informed Decisions through Data Integration

Our data intelligence software is designed to integrate with your systems. Rocsole SoliDetect 1.0 collects "real-time" process data and is available in multiple formats upon request using our interactive reporting software.



Effectively Avoid Unnecessary Risks and Cost

Real-time data of solids buildup from within the process vessels prevents unexpected shutdowns or asset deterioration. Relevant data improves overall performance, increases throughput and reduces cost. No more environmental hazards, and it helps you reduce carbon emissions.



Use Reliable Insights for Improved Efficiency

The Rocsole SolidDetect 1.0 provides rapid and reliable data, allowing you to understand and manage solids buildup within your process. Allow you to be proactive rather than reactive.



Maximize Production & Revenues

The detailed, real-time information provided will not only help you with avoiding unnecessary damage but also can help you optimise production. Where this approach has been implemented, our clients were able to make changes to individual wells, increasing oil production and identifying those areas where sand production is not an issue.

Tech Specs



Typical Delivery

DELIVERY Incoterms 2020, EXW Kuopio



User Interface

SOFTWARE Rocsole Webroc 1.0

Performance

TECHNOLOGY	Electrical Tomography	MINIMUM NOZZLE SIZE	60 mm (2.3")
TYPICAL MEASUREMENT RANGE	360-1440 mm (14-56.7")	DESIGN PRESSURE RANGE	Up to 170 bar (2465 PSI)
TYPICAL TOTAL LENGTH	400-5000 mm (16-200")	DESIGN TEMPERATURE RANGE	-40 to +120 °C (-40 to 248 °F)
TYPICAL ACCURACY (ACHIEVED)	22 mm		

Electrical Characteristics

SUPPLY VOLTAGE	24Vdc	OUTPUT	<ul style="list-style-type: none">• Modbus/TCP
ELECTRONICS	24Vdc @ 3A		<ul style="list-style-type: none">• Modbus/RTU
COMPUTER	24Vdc @ 3A		<ul style="list-style-type: none">• Analog 4-20mA• OPC UA

Mechanical Characteristics

	WEIGHT	MATERIAL	ZONE
PROBE	Varies	Varies	Zone 0
ELECTRONICS CABINET	40 - 100 kg	Varies	Zone 1
COMPUTING UNIT	Varies	Varies	Safe Zone / Zone 2

Environmental

APPROVALS	ATEX, IECEx, CSA	OPERATING TEMPERATURE SENSOR	-40 .. +120 °C
INSTALLATION	With online factory support	OPERATING TEMPERATURE ELECTRONICS	-40 .. +50 °C (AI Enclosure)
COMPLIANCE	EN	OPERATING TEMPERATURE COMPUTING UNIT	-40 .. +50 °C

Additional Information

SPARES Part of Subscription agreement

PRODUCT CODE PROB-SA-16 .. 64

Also available:

In most cases, first-time implementors prefer to start with our standard package, which includes equipment supply, installation/ commissioning and data reporting/interpretation. We are well aware that each operation is different, so please know you can always add:

Tailored Packages & Support

- 1.** Custom consulting and implementation assistance
- 2.** Tailored Rocsole SolidDetect 1.0 elements to fit the specs of your operation
- 3.** Training, support and maintenance in the operation of the Rocsole SolidDetect 1.0



liquiDetect ^{2.0}

Multi-Layer Liquid Processes Insights

by Award-Winning Finnish DeepTech Innovator Rocsole



FOUR AREAS MOST OPERATION MANAGERS ARE CONCERNED ABOUT:

Unreliable processing can cause:



Lower Product Quality

- Unable to maintain export oil specifications.
- Lack of control of oil-in-water, environmental impact and significant financial loss.

Prevention is possible through monitoring within the vessels.



Reduced Production Performance

- Shut-in wells.
- Reduced operating capacity/throughput.
- Lack of clarity on the performance of your Enhanced Oil Recovery techniques.

Understanding the separation process can optimise and increase production.



Rising Chemical Expenditure

The uncertainty of what is happening inside vessels can cause redundant or additional chemical injection.



Unnecessary Maintenance Costs

Excess export water causes corrosion in equipment, pipelines and refineries. This can lead to extensive repair or maintenance, and financial penalties. Lack of data and insights cause unplanned shutdowns and run to failures.

Unplanned shutdowns, reduced uptime and bottlenecks should not be accepted - enhance your insights with our help.

The current solutions lack reliable insights and data, this prevents the operators from relying on the information and thus taking timely actions.

Operation teams need relevant data to improve performance and take corrective measures.

You deserve a better tool that keeps you well-informed 24/7.

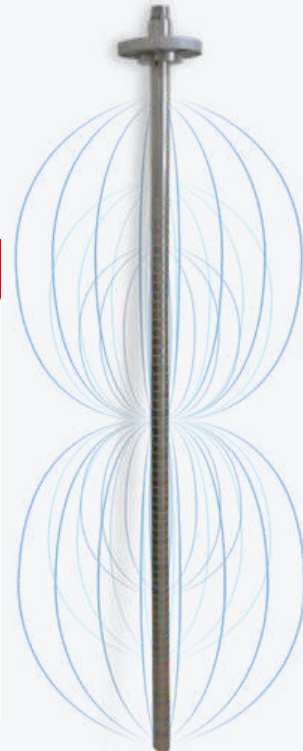
**Don't accept the status-quo.
Get truly reliable insights.**

Data starvation is history. Take the next step with patented deeptech solutions for better product quality and actions for decarbonization.



2.0 **liquiDetect**

Get to the next level with SeeBeyond

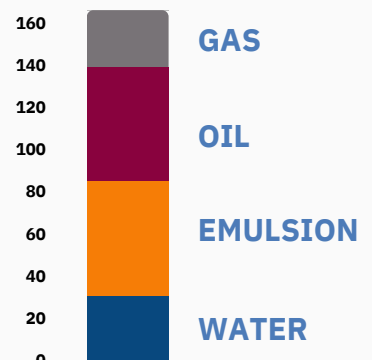


Electrical Tomography provides a real-time permittivity/conductivity profile which generates an overall picture of the actual process levels. With the SeeBeyond you can reliably identify when the changes happen. The interpretation is based on unique actual real-time data.

Our Electrical Tomography technology is proven robust working even with sensor surfaces being contaminated (fouling). The technology enables the measurements of interface levels for Water, Emulsion, Oil, Gas and even Foam - 24/7 updated for your information and monitoring, with more than 1,000 times more data points per day than other incumbent solutions.



SEE HOW IT WORKS: <https://rocsole.co/ldworks>





Your Operational Success Unleashed

Do not accept lack of data in your operations any longer.

Our clients' feedback (and even more: their results) shows repeatedly:

Existing customers say Rocsole LiquiDetect 2.0 provides detailed insights of the oil-water separation and dispersion band height. Resulting in significant operational improvements.



Clever Thought through Data Integration

Our data intelligence software is designed to integrate with your systems. Rocsole LiquiDetect 2.0 collects "real-time" process data and is available in multiple formats upon request using our interactive reporting software.



Effectively Avoid Unnecessary Risks and Cost

Understanding what is happening inside your vessels can prevent the export of excess water, reduce corrosion, and avoid possible environmental hazards due to high oil-in-water.



Use Reliable Insights for Improved Decision-Making

The Rocsole LiquiDetect 2.0 system provides you with rapid and reliable data that allows you to understand and manage your process's water, emulsion, oil and gas interfaces. Now you can be proactive rather than reactive.



Maximize Production & Revenues

Maximise your process capacity by improving the control of separation inside vessels. Improve throughput and product quality. Reduce the frequency of unplanned shutdowns and plant trips. Enable proactive decision makings and planning, ultimately delivering higher overall production performance.

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