Redefining aerosol leak detection with speed, accuracy, and reliability.

Rosemount™ Aerosol Micro Leak Detection Systems

Achieve unmatched quality and compliance with automated, in-line leak detection.

EMERSON™

Optimize Productivity and Increase Confidence

Aerosol manufacturers are looking to improve safety, lower risk, and increase quality while ensuring compliance and profitability of their production lines.

What if you could...

Increase Safety and Reduce Risk

- Perform complete can testing and reduce the risk of faulty cans remaining in production, the warehouse or being released to consumers.
- Implement rapid detection and rejection of a wide variety of aerosol can shapes, sizes, and materials of construction.
- Guarantee accurate, reliable, and instant identification of a wide range of aerosol propellants.

Optimize Production and Reduce Waste

- Provide your operators with easy-to-use software for insight into can rejection rates and patterns to troubleshoot the production line.
- Instantly provide complete visibility of production data and batch quantities.
- Implement remote diagnostics, system integration, and configurable alarms to support your manufacturing needs.

Improve Regulatory and Quality Compliance

- Reduce defect levels due to improved process understanding and real-time detection of defects with 20-millisecond leak detection analysis time for up to 600 cans per minute.
- Avoid product recalls with reliable and automated can rejection and alarm capabilities.

Ensure Regulatory and Quality Compliance

- Meet, or exceed, industry and brand owner regulations and standards with Quantum Cascade Laser Technology.
- Implement a modular system to support easy field upgrades to measure new propellants.
- Implement independently certified leak detection performance.

Quantum Cascade Leak Detection Systems

Instantaneous Aerosol Leak Detection Analysis

Using Quantum Cascade Laser (QCL) technology, with patented laser chirp technique, a leak from any can is detected and rejected instantaneously as it passes through the system.

As cans pass under the sample arch, any leaking propellant is drawn into the sample cell where the QCL pulses at high frequencies (up to 100 KHz) in the mid-infrared to identify any released propellant aerosol gases. Software analyzes the resulting concentration profile to identify leaks in real time. If a leak is indicated, a signal instantly rejects the leaking can from production line. The system is certified to perform leak detection on production lines up to 600 cans per minute.

Testing Sample Arch

Features	Benefits
Quantum Cascade Laser detection technology	Realize true savings from a more powerful device that gives greater process insight and analysis.
Easy-to-use operating software	Reduce waste and optimize operations with clear diagnostic data and insight onto production issues.
Fully-compliant and easily-upgradeable system	Ensure adherence to quality and safety requirements with advanced technology in a modular, rugged design.
Complete service and support	Simple installation, commissioning, upgrades, and required maintenance provided by lifecycle services and support.

Broad Range of Applications

Multi-component detection system helps reduce risk and improve profitability for manufacturers around the world.

Process Industries

- Personal Care
- Automotive and Industrial
- Paints
- Household
- Food
- Medical

Propellants

- Propane
- Butane
- LPG
- N_2O
- CO_2
- DME
- R1234ze, R134a, R227, 152a
- Others on request

Advantages of Cascade Technology

Increase Safety and Reduce Risk

Faulty cans that leave production and are stored, transported or sold to customers are at risk of releasing flammable or explosive gases or liquids.

Rosemount Aerosol Micro Leak Detection Systems offer 100% can testing and accuracy regardless of the shape, size or material of construction.

Testing all can failure points (valves, crimps, triple points and seams), operators can rest assured that any faulty can will be removed from the moving production line. The system can alarm if multiple leaking cans are detected, prompting investigation.

Complete Can Analysis

- ✓ Valves
- ✓ Crimps
- ✓ Triple Points
- ✓ Seams
- ✓ Pinholes

Optimize Production and Reduce Waste

Rosemount Aerosol Micro Leak Detection Systems give valuable insight to allow for continuous improvement and increased operating margins.

- Complete visibility of production data, batch quantities, and cans rejected
- Tiered security settings for operators and engineers
- Reporting capabilities
- Data logging for process trend analysis and discrete measurement data
- Configurable alarm outputs for seamless integration with existing processes
- Easy-Automated system level health diagnostics for immediate fault identification and resolution

Improve Control and Prevent Recalls

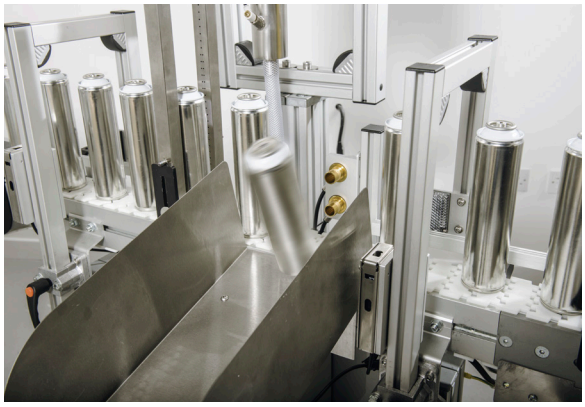
Whether producing own-label products or manufacturing for another brand, high quality output is critical to avoid costly product recalls, prevent brand reputation damage, and ensure profitability.

Water Bath Alternative Solutions

Rosemount Micro Leak Detection System is independently certified for use as part of a water bath alternative solution.

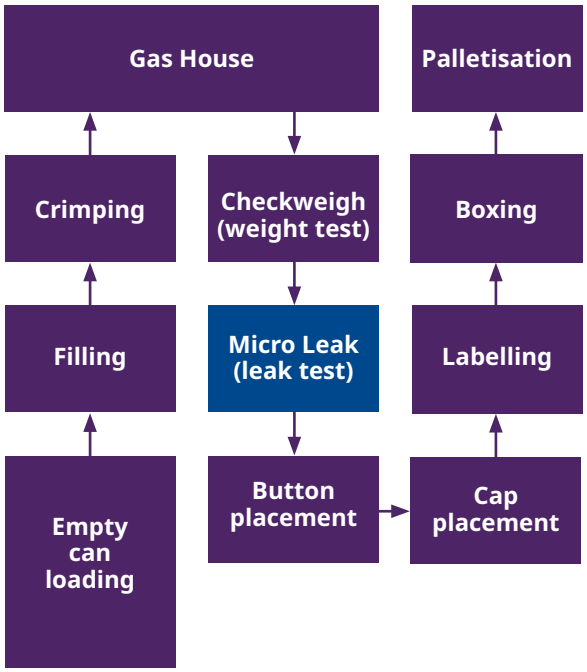
Ensure Regulatory Compliance

Due to the modular design, the leak detection systems support simple upgrades for future propellants and levels of sensitivity.



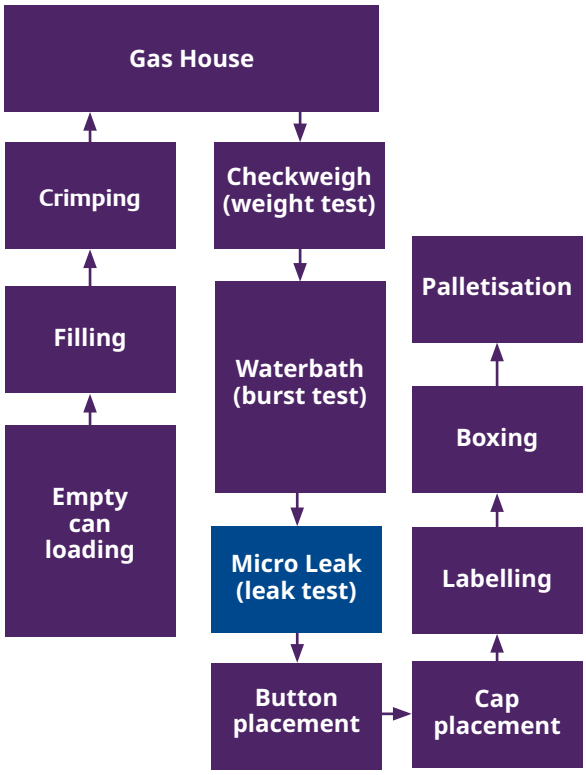
Automated Can Reject Mechanism

Water Bath Alternative Option



Water Bath Alternative Detection Limits	2 x 10^{-3} mbarLs^{-1} 1 bubble / 5 sec at 20 °C (68 °F)

Post Water Bath Option



Post Water Bath Alternative Detection Limits	8 x 10^{-3} mbarLs^{-1} 1 bubble / sec at 50 °C (122 °F)

Flexible Configuration Options

Rosemount Aerosol Micro Leak Detection Systems are offered in different configuration types to ensure alignment to your leak detection requirements.

Configuration	Low Speed	High Speed
Line Speed – cans per minute (CPM)	220	600
Standard Equipment		
ATEX Zone 2 Leak Detection/Class 1 Div II	●	●
Interface to customer PLC / DCS	●	●
Air preparation equioment	●	●
Automated line speed compensation		●
Configurable health system monitoring		●
Programmable alarms		●
Automated mirror cleaning		●
Reject verification		●

Specifications	
IR Source	Quantum Cascade Laser
Performance	
Sensitivity	Standard: 8 x 10^{-3} mbarLs^{-1} Water bath alternative: 2 x 10^{-3} mbarLs^{-1}
Line speed	Up to 600 cans per minute
Can dimensions	Up to Height: 350 mm (14 in.), Diameter: 80 mm (3 in.), Others on request
Response time	20 ms
Environmental	
Ambient temperature range	10 to 40 °C (50 to 104 °F)
Control console size	H x W x D: 1200 x 600 x 560 mm (47 x 24 x 22 in.)
Sensor head size	H x W x D: 590 x 330 x 330 mm (23 x 13 x 13 in.)
Low Speed Console (unmounted)	H x W x D: 38 x 61 x 22 cm (15 x 24 x 9 in.)
Single Propellant Sensor	H x W x D: 182 x 33 x 33 cm (72 x 13 x 13 in.)
Enclosure	H x W x D: 272 x 54 x 182 cm (107 x 21 x 72 in.)
High Speed Console	H x W x D 120 x 60 x 50 cm (47 x 24 x 22 in.)
Multi-Propellant Sensor	H x W x D: 60 x 33 x 33 cm (24 x 13 x 13 in.)
Max factory air consumption	25 L/min approximately on regular usage
Factory compressed air pressure	8–10 bar, clean, dry, and oil free
Line space requirement	1.8 m (71 ft) straight free line (maximum)
Utilities	
Air supply	25 L/min, 8–10 bar
System operating voltage	110/240V 50/60Hz
System power consumption	1.8 m (71 in.) straight free line (maximum)
Certifications	
Laser Certifications	Class 1 BS EN 60825-1: 2007 Safety of Laser products Equipment classification and requirements (Identical to IEC 60825-1: 2007)
Hazardous area classification	Ex II 3G nR II T6 (10 °C ≤ T_{amb} ≤ 40 °C)

Service and Support Partnership

Rosemount Aerosol Micro Leak Detection Systems are designed to keep your operation running smoothly and effectively without interruption. Whether installed on a new or within an existing line, little or no down time is needed to get production moving.

Lifecycle Service & Support

The Emerson team of trained and certified experts provide complete solutions and problem-solving support to ensure continuous, high-performance operation of Rosemount Leak Detection Systems.

Count on Emerson for a full range of services, including:

- Installation
- Start-up and commissioning
- Remote system monitoring
- Scheduled maintenance
- Field retrofits
- System upgrades
- On-site training and support
- On-call support

Other Rosemount Micro Leak Detection Systems

Modified Atmosphere Packaging (MAP) Food Leak Detection System

- 100% online testing for CO_2 leaks from Modified Atmosphere packaging
- Reduce waste, minimize rework, and decrease product recalls

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Lifecycle Service and Support

LOCAL SUPPORT | GLOBAL REACH

150+ Countries Supported

★ Headquarters
■ Regional Offices

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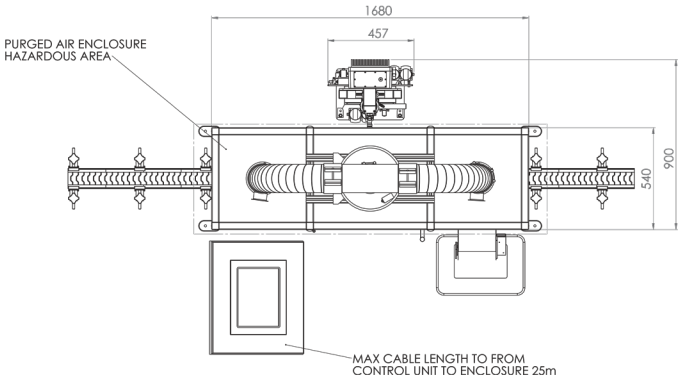

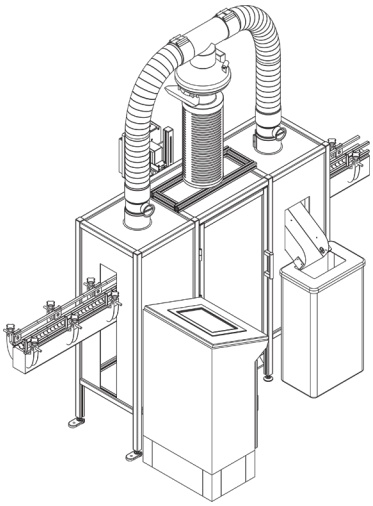

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The drawing above represents the recommended production line layout for a typical aerosol filling line incorporating the Rosemount Aerosol Micro Leak Detection system, in line with UN ADR requirements.

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