2060 **R**aman **I**ntelligent **SE**nsor «**RISE**»

Unveiling insights,
amplifying precision

PUSHING
THE
LIMITS
TOGETHER

Metrohm
Process Analytics

Elevate your process to new heights

Introducing: 2060 RISE, the revolutionary Raman sensor from Metrohm Process Analytics. Designed to simplify your process analysis, 2060 RISE offers unparalleled accuracy and reliability for sample identification, analyte quantification, and process safety assurance.

KEY BENEFITS:

- **Plug-and-Play Simplicity:** Integrate 2060 RISE into your existing operations with minimal setup.
- **Real-Time Insights:** Make informed decisions with instant access to substance information and precise analyte quantification.
- **Enhanced Accuracy:** Benefit from 2060 RISE's advanced Raman technology for superior analytical performance.
- **Simplified Workflow:** Eliminate complex calibration procedures and streamline your process analysis.

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No sample preparation or pre-treatment is required, making solvents and reagents no longer necessary.

5

Seconds – that is how fast 2060 RISE produces results.

16

Sensors can be accommodated across **four** sampling areas, with only one 2060 Human Interface.

200

Square centimeters – Compact design for every area.

IP66

With its robust design, 2060 RISE can be confidently utilized on any production line, free from concerns about spills or dust in the harshest conditions [-10–50 °C].

Raman Intelligent SEnsor

In the world of chemical handling and process management, precision, safety, and compliance are vital. Introducing Metrohm's solution to transform operations and ensure the safe-guarding of personnel and company assets. Raman Intelligent SEnsor, 2060 RISE, is available in four distinct versions, each catered to your specific needs.

Choose the system that suits your specific requirements:

- General Purpose: Ideal for standard applications. (2060 RISE)
- High Temperature: Designed to withstand extreme heat environments. (2060 RISE-HT)
- Explosion proof: Ensures compliance with ATEX and IECEX standards for hazardous areas. (2060 RISE-Ex)
- Explosion proof and High Temperature: Combines explosion proof compliance with high-temperature resilience. (2060 RISE Ex-HT)

Direct Mounting
Seamlessly integrate 2060 RISE with your equipment, whether it is a bioreactor or chemical unloading station. The customizable flanges and pipelines ensure a perfect fit for your specific application, regardless of your industry or operational requirements.

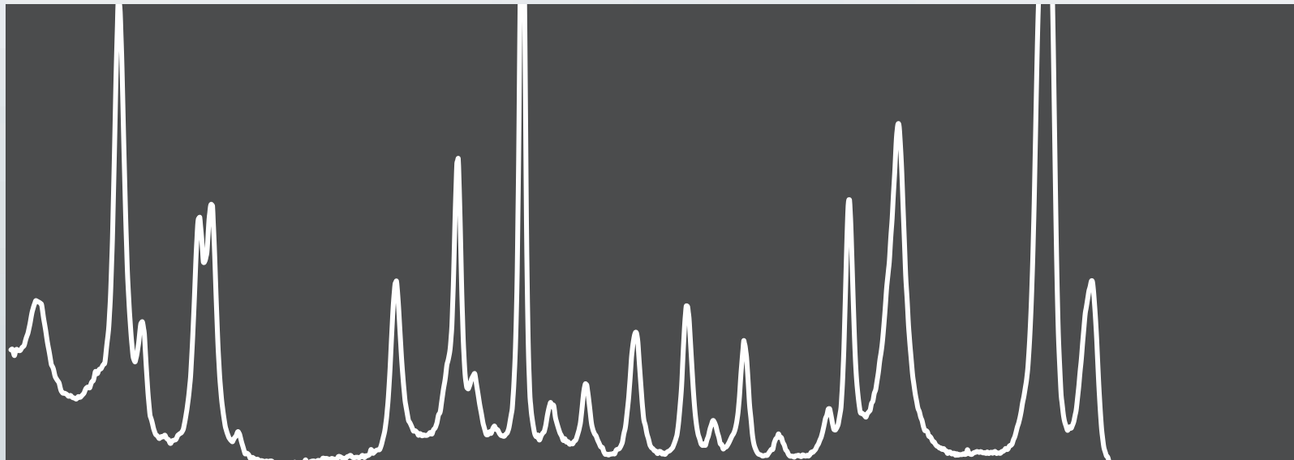
Made for Every Scenario
2060 RISE offers optional features like an ex-proof enclosure purge system and a vortex cooler to operate in temperatures ranging from -10 to 50 °C.

This design can handle samples at temperatures up to 150 °C with ease. Enjoy enhanced safety and reliability with these advanced functionalities.

High Raman Sensitivity
Utilizing cutting-edge technology, the integrated Complementary Metal-Oxide-Semiconductor (CMOS) detector effectively minimizes the noise without having to cool down the detector. This innovation leads to clearer signals and enhanced sensitivity, enabling the detection of even the faintest Raman signals with precision.

Effortless Everyday Use
The 2060 RISE is designed for instant identification and verification. With its user-friendly interface, 2060 RISE is perfect for both professionals and those new to the field, providing straightforward usability for anyone.

On the Fly Calibration
2060 RISE enhances precision, reduces costs, and streamlines workflows by performing all calibrations internally, requiring no instrument downtime. It adapts to changing conditions and delivers reliable results with maximum efficiency.



Precise Raman analysis for any sample

2060 RISE is a cutting-edge Raman spectrometer designed with static optics. This makes 2060 RISE ideal for analyzing a wide range of sample types, including liquids and gases. Unlike traditional spectroscopic techniques, Raman spectroscopy leverages light scattering rather than transmission. This minimizes interference from gas bubbles or particles and ensures precise and reliable results.

2060 RISE is engineered for seamless integration with process units, offering versatile connection options to suit your specific requirements. You can customize the distance between the two tri-clamp flanges (L1, see figure below), adjust the probe length (L2) for optimal sample contact, and define the working distance (WD, L3) to precisely position the laser focal point relative to the probe's end. These options allow 2060 RISE to connect to pipelines of various diameters (D1) and accommodate a broad spectrum of samples.

The 2060 RISE uses static optics for Raman analysis, allowing accurate measurements of liquids, slurries, and emulsions, without interference from particulates.

DURABLE AND CUSTOMIZABLE CONSTRUCTION

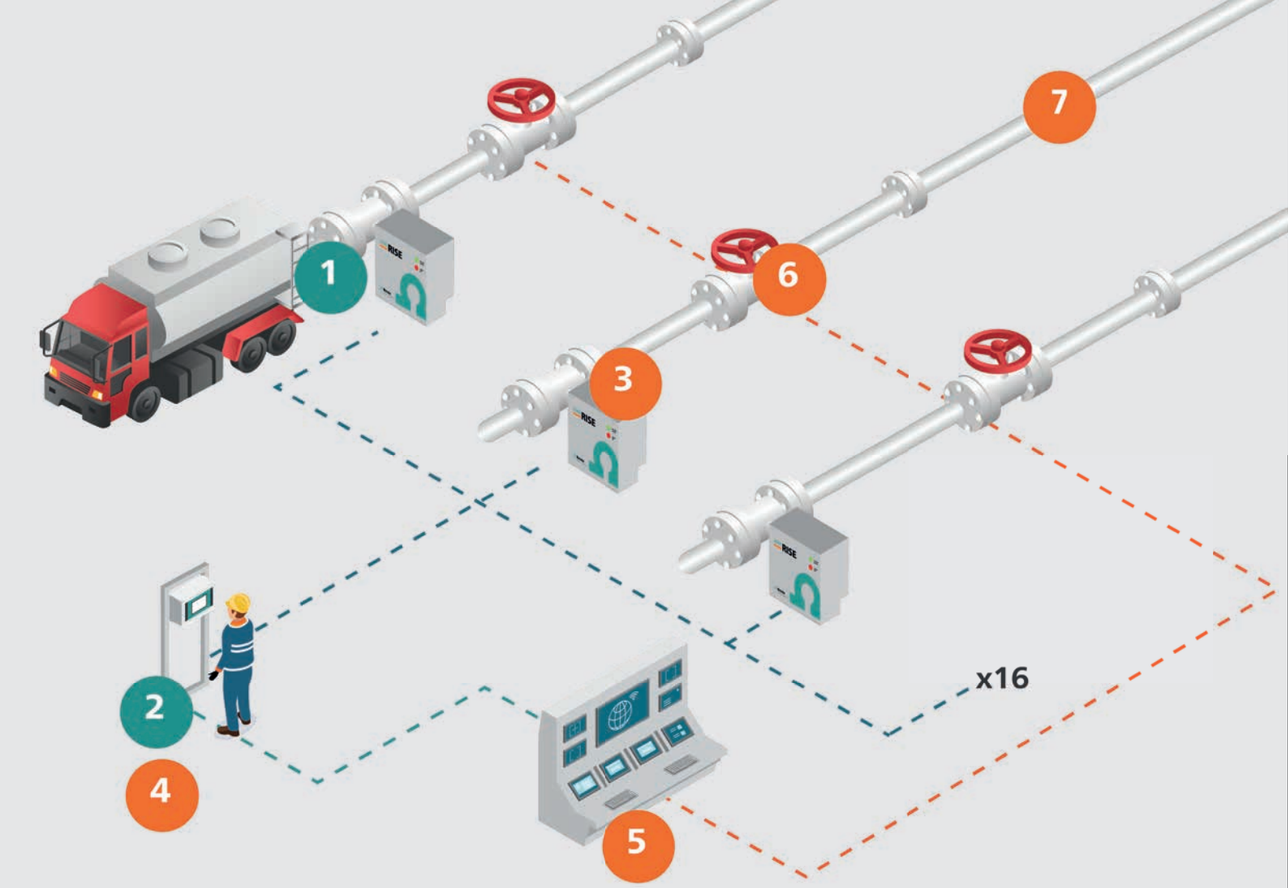
The 2060 RISE components that make contact with the sample are crafted from high-quality metal and sapphire, to ensure durability and performance. Stainless Steel 316 comes standard with any order, but it is possible to customize the sensor with alternatives metals like Hastelloy, Titanium, or other specialized metals to suit the application. The sapphire window is securely installed using a compression fitting, to eliminate the need for seals or O-rings between the metal and sapphire. This innovative design makes the probe exceptionally durable, robust, and virtually maintenance-free.

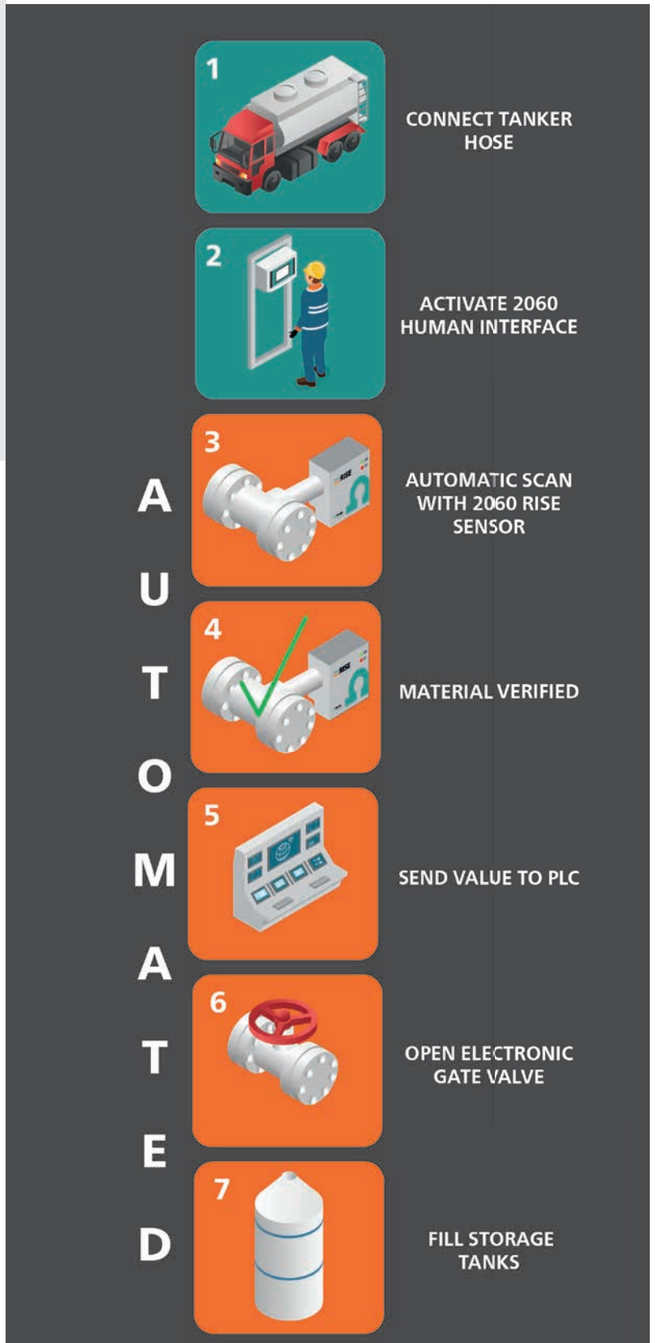
Customize your monitoring

The 2060 RISE is centrally managed via the 2060 Human Interface (HI), a user-friendly control system designed for optimal ease of use with minimal training. Despite the sophisticated algorithms, smart programs, and advanced chemometrics working behind the scenes, the interface is kept intentionally simple. Users interact with the system through basic play/stop buttons and are presented with clear, immediate access to results, to ensure a seamless experience without the need for in-depth technical knowledge.

2060 Human Interface (HI)

Safeguarding your process





Each 2060 HI has the capacity to control up to four clusters of 2060 RISE units. A cluster is defined as a grouping of 2060 RISE units that are located in close proximity to each other. This flexible design allows for the connection of up to sixteen 2060 RISE units in total, which can be distributed among the clusters according to operational needs. Moreover, each cluster can be positioned at a distance of up to one kilometer from the 2060 HI, providing significant flexibility in how the system is set up and allowing for a broad range of configurations to suit various operational environments.

This scalable and flexible approach ensures that the 2060 RISE can be tailored to meet diverse application requirements, while still being managed through a single, easy-to-use interface.

INNOVATIVE SOLUTIONS FOR A SAFE & SUSTAINABLE WORLD

An inline Raman spectroscopy sensor to elevate your process analysis

HARBOR AND DOCK OPERATIONS

- Accurately identifies and categorizes chemicals in shipments.
- Optimizes storage and transportation processes for maximum safety.
- Enhances port efficiency and reduces operational risks.

CHEMICAL UNLOADING STATION

- Ensures the safe and efficient unloading of chemicals.
- Identifies and qualifies chemicals in real-time, preventing accidents and delays.

FOOD AND FEED INDUSTRY COMPLIANCE

- Analyzes ingredients to confirm composition and nutritional content.
- Ensures compliance with regulatory standards and industry best practices.
- Enhances consumer trust and brand reputation.

QUALITY CONTROL IN BIOTECH MANUFACTURING

- Monitors critical parameters in real-time, such as cell culture media and protein purity.
- Ensures the production of safe and effective biopharmaceuticals.
- Reduces production downtime and minimizes waste.

FUELING STATIONS

- Verifies fuel quality and composition on-site.
- Prevents the dispensing of contaminated or substandard fuels.
- Improves customer satisfaction and station safety.

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