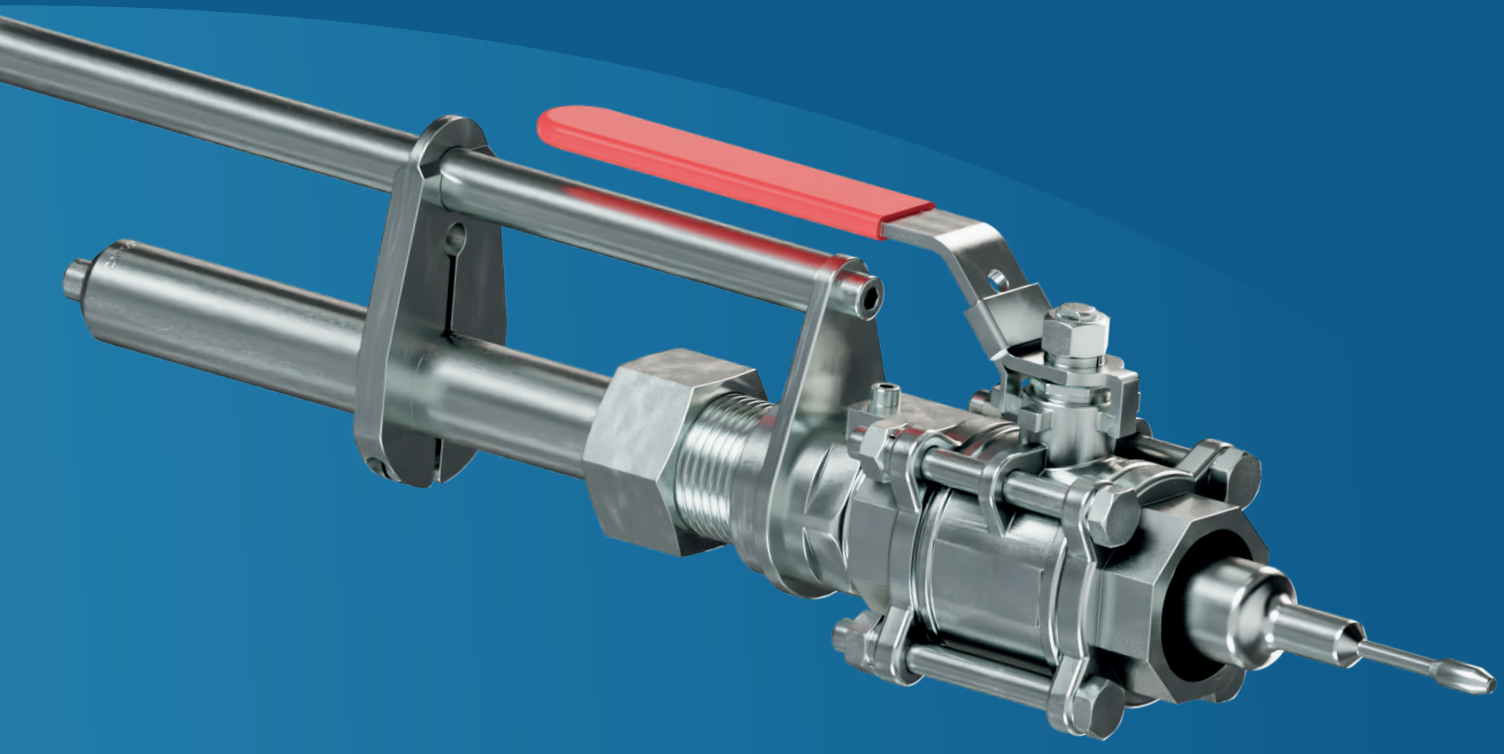
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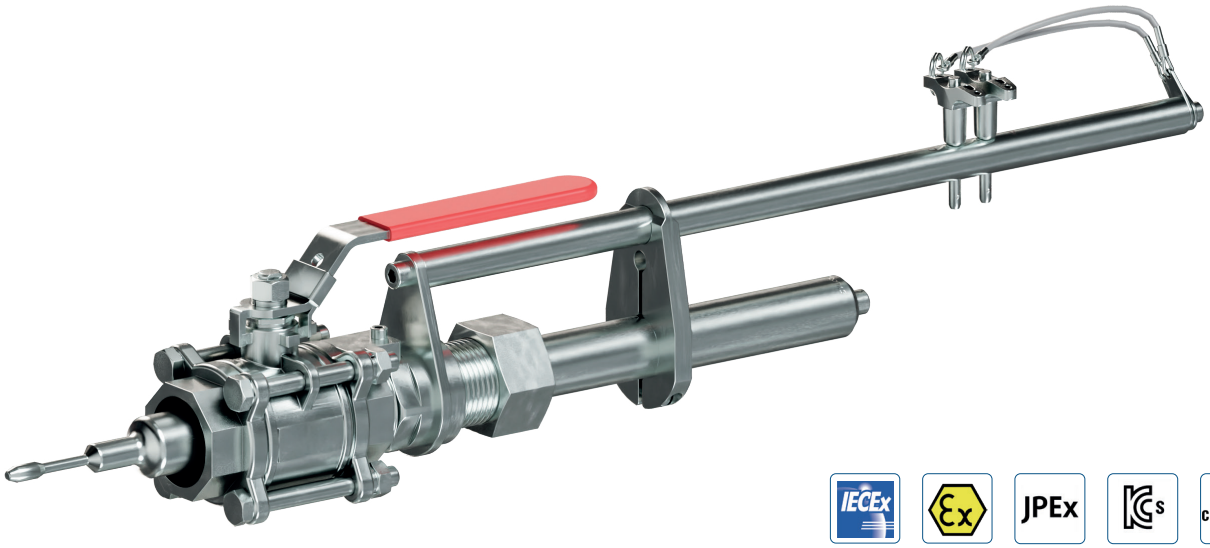
Rheonics RPA: Retractable Probe Assembly for Process Sensors

Ensuring operational safety and process continuity in high-demand environments.



Rheonics RPA

Rheonics Retractable Probe is a manual system that enables the quick insertion and removal of a probe into a process line. The system uses a 1 1/2" NPT Ball Valve to connect to the process and the insertion depth can be chosen by the costumer. A locking pin on the guiding rod and a support sleeve ensure safe insertion and removal of the probe, avoiding damage of the probe tip with the valve.



Parameter	Value
Dimensions	Min. 700 x 75 x 130 (mm) 27.5 x 3 x 5.2 (inch)
Total Weight	9 kg (19.8 lb)
Operating temperature	-20 C to 150 C
Installation Place	In pipes and tanks

Parameter	Value
Max Operating Pressure	40 bar
Probe Installation Pressure	Ambient
Compatible Sensor Type	SRV: X5/X8 SRD: X5/X8
Material	Stainless Steel 316L

Recommended sensors

Type-SR sensors

- **Repeatable measurements** in both Newtonian and non-Newtonian fluids.
- **Hermetically sealed**, available in 316L stainless steel and Hastelloy C22 wetted parts.
- Built-in fluid temperature measurement.
- **EHEDG and 3-A** certified and CIP/SIP ready.



SRV
Inline process viscosity & temperature meter

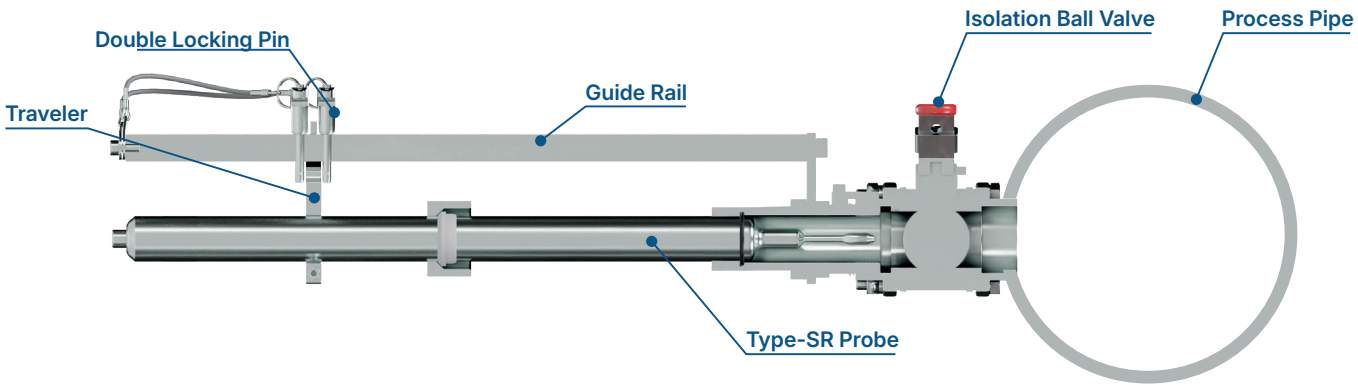


SRD
Inline process density, viscosity & temperature meter

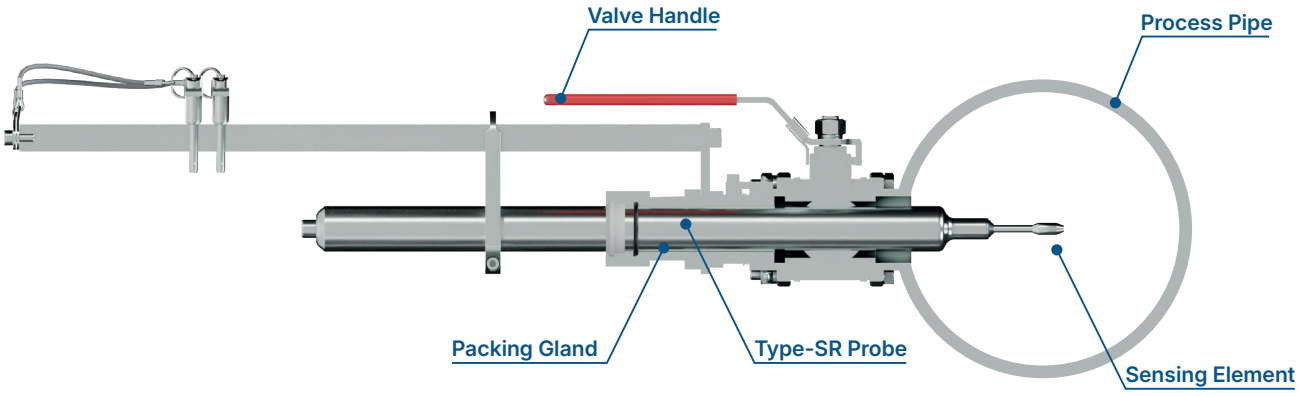
Operation

The retractable assembly is highly beneficial when a line must be piggable, as it allows for the probe to be removed from the line during the pigging operation. Rather than completely removing the probe, a more time-efficient approach is to utilize retraction to withdraw the probe from within the line, thereby eliminating any obstruction in the path of the pigging device. Once the pigging operation is complete, the probe can be reinserted.

Rheonics RPA - Retracted View



Rheonics RPA - Inserted View



Main Features

SRV and SRD compatibility

Built to be compatible with Rheonics Density meter SRD and Viscometer SRV

Stainless steel surface

Wetted parts are completely manufactured of Stainless Steel 316L

Retractable system

Sensor probe can be removed without draining the line for maintenance, cleaning, or replacement without interrupting the production processes

Designed for custom installation

Can be easily integrated in the line through the 1 1/2" NPT connection on the valve (Available for Tri-Clamp or flange connection through adapters)

Electronics & Communication

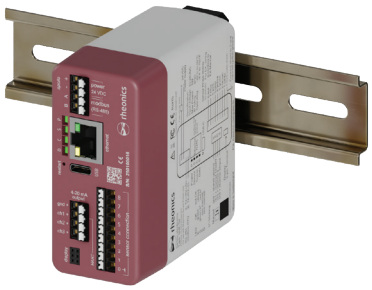
Rheonics Sensor Electronics is responsible for collecting and processing viscosity and/or density measurements using a patented algorithm, as well as handling communication protocols. The available variants are:



SME-TRD



SME-TR



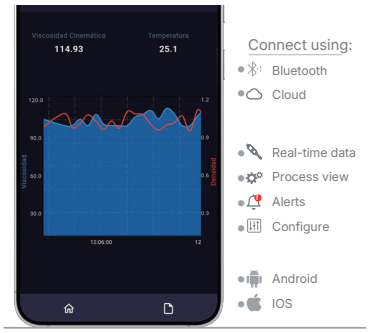
SME-DRM

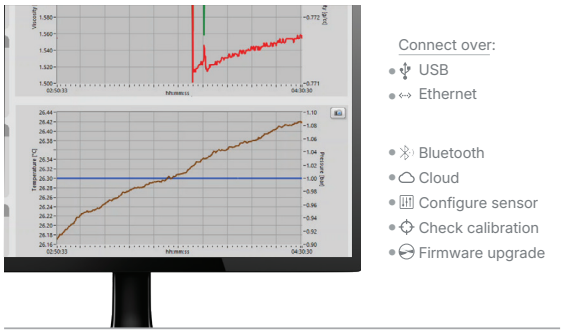
Representative visuals may look different than actual products

Bluetooth | Modbus RTU | EtherNet/IP | ETHERNET TCP/IP | PROFINET | WirelessHART | Onboard Historian | Modbus TCP | 4-20 mA | HART COMMUNICATION PROTOCOL | USB

Rheonics Application, PC Data Acquisition & Analysis

The Rheonics ecosystem allows for instant connection to the RCP (Rheonics Control Panel) via Bluetooth, Ethernet, or USB. Whether you are using a smartphone or a PC, our intuitive interface provides real-time insights into viscosity, density, and temperature.





Certifications

Designed for critical applications, our probes can be supplied with major international approvals, ranging from hygienic and sanitary certifications (EHEDG, 3-A), to compliance standards (ISO, CE), and explosion protection for hazardous areas (ATEX, IECEx, JPEx, KCs).

RPA Industry Applications



Oil & Gas

Application: Crude oil transfer

Installation Point
Piggable lines

Key benefit - Protection
Retracts during pigging to prevent sensor damage and allow pipe cleaning



Cement

Application: Milk of lime concentration

Installation Point
Mixing tanks / Return lines

Key benefit - Maintenance
Cleaning of heavy scale buildup and calibration without draining tanks



Mining Industry

Application: Mineral slurry density

Installation Point
Thickener underflow / Discharge pipes

Key benefit - Durability
Protects probe from constant abrasion by rock particles during non-measure cycles.



Chemical Industry

Application: Acid & alkali blending

Installation Point
Pressurized reactor bypass loops

Key benefit - Safety
Enables maintenance and "air-check" validation without risk of hazardous leaks



Pulp & Paper

Application: Black liquor processing

Installation Point
Recovery boiler feed lines

Key benefit - Efficiency
Frequent removal to clear scaling and salt cake while the process stays online



Food & Beverage

Application: Dairy and beverage processing

Installation Point
Processing SIP/CIP lines or fermentation vats

Key benefit - Hygiene
Allows sensor retraction for automated cleaning (CIP) to prevent bio-film buildup

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Ready to optimize your sensor maintenance?

Get in touch, we will love to help you integrate the RPA for seamless, real-time process control and safety!

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