

INLINE PROCESS DENSITY AND  
VISCOSITY MONITORING



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# Product Portfolio



SRV



SRD

## Description

Process viscometer for Newtonian and non-Newtonian fluids. Wide viscosity range - monitor the complete process.

Single instrument for process density, viscosity and temperature measurement.

## Fluid Measurements

Viscosity Range

3 to 10,000 cP

1 to 3,000 cP

Viscosity Accuracy

0.5 to 50,000 cP (available)

wider range available

5% of reading (standard)

5% of reading (standard)

1% & higher accuracy available

higher accuracy available

Density Range

-

0.0 - 4.0 g/cc

Density Accuracy

-

0.001 g/cc

Reproducibility

Better than 0.1% of reading

Better than 0.1% of reading

Temperature (inbuilt)

Pt1000 (DIN EN 60751 class B)

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## Operational Environment

Process Fluid Temperature

-40 up to 285 °C

-40 up to 285 °C

Pressure Range

up to 10,000 psi (690 bar)

up to 10,000 psi (690 bar)

## Mechanical

Material (Wetted parts)

316L Stainless Steel

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Hastelloy C22

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Variants

Flush, Short and Long insertion

Flush, Short and Long insertion

Process Connection

Threaded, Flange, Sanitary

Threaded, Flange, Sanitary

EHEDG certified hygienic available

EHEDG certified hygienic available

Ingress Protection

IP69K

IP69K

Electrical Connection

M12 (8-pin, A-coded)

M12 (8-pin, A-coded)

## Application

Designed for easy installation in pipelines, tanks, and process lines.

- Process viscosity control of slurries, emulsions and other non-newtonian fluids
- Polymerization monitoring
- Coating and ink viscosity control
- Marine fuel viscosity control

- Drilling mud density and viscosity
- Newtonian and nonnewtonian fluids
- Pipeline and pumping - efficiency and leak detection
- Fuel consumption monitoring



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inline process  
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monitoring



**DVP**



**DVM**

Simultaneous density, viscosity and temperature measurement at HPHT conditions.

Designed for reservoir fluid analysis. Simultaneous density and viscosity measurement at 30,000 psi & 200 °C.

0.2 to 300 cP

0.1 cP below 1 cP

5% of reading (standard)

higher accuracy available

0 – 1.5 g/cc

0.001 g/cc

higher accuracy available

Better than 1% of reading

Pt1000 (class AA)

0.2 to 300 cP

lower than 0.2 cP available

0.1 cP below 1 cP

5% of reading (standard)

higher accuracy available

0 – 1.5 g/cc

0.001 g/cc

higher accuracy available

Better than 1% of reading

Pt100 (Class AA)

-40 up to 200 °C

up to 10,000 psi

-40 up to 200 °C

up to 30,000 psi

Titanium Grade 5

Titanium Grade 5

1" NPT

Flange & sanitary connections available

IP68

M12

- Gas and liquid density
- High pressure processes
- Custody transfer - liquid, gas
- LNG density metering
- Not suitable for liquids with magnetic particles

1/4" HP (9/16-18 UNF)

IP69

Fixed cable

- HPHT fluid analysis
- PVT viscosity & density
- EOR density & viscosity
- Core flow fluid measurements
- Lubricant viscosity monitoring

## Electronics & Communication



**SME-TRD**

Analog output	4-20 mA (3 channel)
	Viscosity, Density, Temp.
Digital output	Modbus RTU (RS-485)
	Ethernet (Ethernet/IP, Modbus TCP, Profinet)
	USB
	HART
Wireless output	Bluetooth LE 4.0
Display	Multi-line LCD (SME-TRD)
Operational temp.	-20 to 65 °C
Power supply	24 V DC
SME-TR(D)	IP65/66
SME-DRM	IP40/50
Software	Data acquisition and service iOS and Android app



**SME-DRM**



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## INVENTED, DESIGNED, AND BUILT WITH SWISS PRECISION

Invented, designed and built by an ETH Zurich spin-off team with over 150 years of collective experience in resonant sensor technology. Rheonics proprietary technology is protected by a growing portfolio of US & international patents.

Precision built in Switzerland, each Rheonics fluid density and viscosity sensor is designed to match your application needs. Whether you need to measure density and viscosity downhole at 30,000 psi and 200 °C or monitor the viscosity of polymerization reactions, we have a solution for you.

Rheonics density and viscosity sensors are available in probe and flow through styles. All Rheonics products are designed to withstand the harshest process environments including high level of shock, vibrations, abrasives & corrosives.



## 30 YEARS OF DEVELOPING INNOVATIVE FLUID DENSITY & VISCOSITY MONITORING

- 1985 • Conceptual framework at ETH Zurich
- 1990 • First viscometer patented
- 1998 • Gated PLL technology patented
- 2003 • Process Viscometer developed
- 2010 • Developed HPHT D-V sensor
- 2012 • rheonics incorporated
- 2013 • HPHT Viscosity and Density Sensor for Oil and Gas (DVM)
- 2014 • Inline process Density & Viscosity Sensor (DVP)
- 2015 • Inline process Viscometer (SRV)
- 2016 • Inline process Density & Viscosity Meter (SRD)

### Contact Information

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