

# INLINE PROCESS DENSITY AND VISCOSITY MONITORING



rheonics.com  
+41 52 511 32 00  
+ Winterthur

info@rheonics.com  
1 713 955 7305  
Houston

July 2026

Product Portfolio



SRV



SRD



DVP



DVM

Electronics & Communication



SME-TRD

|                   |                                                  |
|-------------------|--------------------------------------------------|
| Analogue 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

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. | 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. |
|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|

Fluid Measurements

|                       |                                                            |                                                       |                                                                            |                                                                            |
|-----------------------|------------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Viscosity Range       | 3 to 10,000 cP<br>0.5 to 50,000 cP (available)             | 1 to 3,000 cP<br>wider range available                | 0.2 to 300 cP                                                              | 0.2 to 300 cP<br>lower than 0.2 cP available                               |
| Viscosity Accuracy    | 5% of reading (standard)<br>1% & higher accuracy available | 5% of reading (standard)<br>higher accuracy available | 0.1 cP below 1 cP<br>5% of reading (standard)<br>higher accuracy available | 0.1 cP below 1 cP<br>5% of reading (standard)<br>higher accuracy available |
| Density Range         | -                                                          | 0.0 - 4.0 g/cc                                        | 0 – 1.5 g/cc                                                               | 0 – 1.5 g/cc                                                               |
| Density Accuracy      | -                                                          | 0.001 g/cc                                            | 0.001 g/cc<br>higher accuracy available                                    | 0.001 g/cc<br>higher accuracy available                                    |
| Reproducibility       | Better than 0.1% of reading                                | Better than 0.1% of reading                           | Better than 1% of reading                                                  | Better than 1% of reading                                                  |
| Temperature (inbuilt) | Pt1000 (DIN EN 60751 class B)                              | Pt1000 (DIN EN 60751 class B)                         | Pt1000 (class AA)                                                          | Pt100 (Class AA)                                                           |

Operational Environment

|                          |                            |                            |                  |                  |
|--------------------------|----------------------------|----------------------------|------------------|------------------|
| Proces Fluid Temperature | -40 up to 285 °C           | -40 up to 285 °C           | -40 up to 200 °C | -40 up to 200 °C |
| Pressure Range           | up to 10,000 psi (690 bar) | up to 10,000 psi (690 bar) | up to 10,000 psi | up to 30,000 psi |

Mechanical

|                         |                                                                  |                                                                  |                                                   |                       |
|-------------------------|------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------|-----------------------|
| Material (Wetted parts) | 316L Stainless Steel<br>Hastelloy C22                            | 316L Stainless Steel<br>Hastelloy C22                            | Titanium Grade 5                                  | Titanium Grade 5      |
| Variants                | Flush, Short and Long insertion                                  | Flush, Short and Long insertion                                  | -                                                 | -                     |
| Process Connection      | Threaded, Flange, Sanitary<br>EHEDG certified hygienic available | Threaded, Flange, Sanitary<br>EHEDG certified hygienic available | 1" NPT<br>Flange & sanitary connections available | 1/4" HP (9/16-18 UNF) |
| Ingress Protection      | IP69K                                                            | IP69K                                                            | IP68                                              | IP69                  |
| Electrical Connection   | M12 (8-pin, A-coded)                                             | M12 (8-pin, A-coded)                                             | M12                                               | Fixed cable           |

Application

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

|                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Process viscosity control of slurries, emulsions and other non-newtonian fluids</li><li>• Polymerization monitoring</li><li>• Coating and ink viscosity control</li><li>• Marine fuel viscosity control</li></ul> | <ul style="list-style-type: none"><li>• Drilling mud density and viscosity</li><li>• Newtonian and nonnewtonian fluids</li><li>• Pipeline and pumping - efficiency and leak detection</li><li>• Fuel consumption monitoring</li></ul> | <ul style="list-style-type: none"><li>• Gas and liquid density</li><li>• High pressure processes</li><li>• Custody transfer - liquid, gas</li><li>• LNG density metering</li><li>• Not suitable for liquids with magnetic particles</li></ul> | <ul style="list-style-type: none"><li>• HPHT fluid analysis</li><li>• PVT viscosity &amp; density</li><li>• EOR density &amp; viscosity</li><li>• Core flow fluid measurements</li><li>• Lubricant viscosity monitoring</li></ul> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

+subject to change without notice



## 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

[www.rheonics.com](http://www.rheonics.com)  
[info@rheonics.com](mailto:info@rheonics.com)

#### rheonics Inc.

3 Sugar Creek Center Blvd, Ste 100  
 Sugar Land TX, 77478  
 USA  
 1 713 955 7305

#### rheonics GmbH

Zürcherstrasse 39-41,  
 CH-8400 Winterthur  
 Switzerland  
 +41 52 511 32 00

Represented by

