## Description

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

## Fluid Measurements

<table>
<thead>
<tr>
<th></th>
<th>SRV</th>
<th>SRD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Viscosity Range</strong></td>
<td>3 to 10,000 cP</td>
<td>1 to 3,000 cP</td>
</tr>
<tr>
<td></td>
<td>0.5 to 50,000 cP (available)</td>
<td>wider range available</td>
</tr>
<tr>
<td><strong>Viscosity Accuracy</strong></td>
<td>5% of reading (standard)</td>
<td>5% of reading (standard)</td>
</tr>
<tr>
<td></td>
<td>1% &amp; higher accuracy available</td>
<td>higher accuracy available</td>
</tr>
<tr>
<td><strong>Density Range</strong></td>
<td>-</td>
<td>0.4 - 1.5 g/cc</td>
</tr>
<tr>
<td><strong>Density Accuracy</strong></td>
<td>-</td>
<td>0.01 g/cc</td>
</tr>
<tr>
<td></td>
<td>Better than 1% of reading</td>
<td>Better than 1% of reading</td>
</tr>
<tr>
<td></td>
<td>Pt1000 (DIN EN 60751 class B)</td>
<td>Pt1000 (Class B)</td>
</tr>
</tbody>
</table>

## Operational Environment

<table>
<thead>
<tr>
<th></th>
<th>SRV</th>
<th>SRD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process Fluid Temperature</strong></td>
<td>-40 up to 200 °C</td>
<td>-40 up to 200 °C</td>
</tr>
<tr>
<td></td>
<td>max 150 °C</td>
<td>max 150 °C</td>
</tr>
<tr>
<td><strong>Ambient Temperature</strong></td>
<td>up to 5,000 psi</td>
<td>up to 5,000 psi</td>
</tr>
<tr>
<td><strong>Pressure Range</strong></td>
<td>up to 5,000 psi</td>
<td>up to 5,000 psi</td>
</tr>
</tbody>
</table>

## Mechanical

<table>
<thead>
<tr>
<th></th>
<th>SRV</th>
<th>SRD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Material (Wetted parts)</strong></td>
<td>316L Stainless Steel</td>
<td>316L Stainless Steel</td>
</tr>
<tr>
<td><strong>Diameter x Length</strong></td>
<td>Ø35 x 140 mm</td>
<td>Ø35 x 140 mm</td>
</tr>
<tr>
<td><strong>Process Connection</strong></td>
<td>3/4” NPT</td>
<td>3/4” NPT</td>
</tr>
<tr>
<td></td>
<td>Flange &amp; sanitary connections available</td>
<td>Flange &amp; sanitary connections available</td>
</tr>
<tr>
<td><strong>Ingress Protection</strong></td>
<td>IP68</td>
<td>IP68</td>
</tr>
<tr>
<td><strong>Electrical Connection</strong></td>
<td>M12</td>
<td>M12</td>
</tr>
</tbody>
</table>

## Application

- 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 non-Newtonian fluids
- Pipeline and pumping - efficiency and leak detection
- Fuel consumption monitoring

†subject to change without notice
<table>
<thead>
<tr>
<th>DVP</th>
<th>DVM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneous density, viscosity and temperature measurement at HPHT conditions.</td>
<td>Designed for reservoir fluid analysis. Simultaneous density and viscosity measurement at 30,000 psi &amp; 200 °C.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SME-TRD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog output</td>
</tr>
<tr>
<td>Digital output</td>
</tr>
<tr>
<td>Wireless output</td>
</tr>
<tr>
<td>Wireless output</td>
</tr>
<tr>
<td>Wireless output</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Display</th>
<th>Multi-line LCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>(SME-TRD)</td>
<td>(max. 55°C)</td>
</tr>
</tbody>
</table>

| Operational temp. | max. 55 °C |
| Power supply | 24 V DC |
| Software | Data acquisition and service |

<table>
<thead>
<tr>
<th>Titanium Grade 5</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ø35 x 120 mm</td>
<td>44 x 55 x 75.3 mm</td>
</tr>
<tr>
<td>1” NPT</td>
<td>1/4” HP (9/16-18 UNF)</td>
</tr>
<tr>
<td>Flange &amp; sanitary connections available</td>
<td>IP68</td>
</tr>
<tr>
<td>IP69</td>
<td>Fixed cable</td>
</tr>
</tbody>
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- Gas and liquid density
- High pressure processes
- Custody transfer - liquid, gas
- LNG density metering
- Not suitable for liquids with magnetic particles
- HPHT fluid analysis
- PVT viscosity & density
- EOR density & viscosity
- Core flow fluid measurements
- Lubricant viscosity monitoring

-40 up to 200 °C
max 150 °C
up to 10,000 psi

-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
Better than 1% of reading
Pt1000 (class AA)

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up to 30,000 psi

4-20 mA (3 channel)
Viscosity, Density, Temp.
Modbus RTU (RS-485)
Ethernet
USB
HART (optional)
Bluetooth LE 4.0
Wi-fi (optional)
WirelessHART/ISO100 (optional)

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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

- Conceptual framework at ETH Zurich
- First viscometer patented
- Gated PLL technology patented
- Process Viscometer developed
- Developed HPHT D-V sensor
- rheonics incorporated
- HPHT Viscosity and Density Sensor for Oil and Gas (DVM)
- Inline process Density & Viscosity Sensor (DVP)
- Inline process Viscometer (SRV)
- Inline process Density & Viscosity Meter (SRD)

Contact Information

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