



Rheology Solutions

Rheology Solutions is the sole Australian distributor of this product range and we welcome the opportunity of discussing your application requirements.

*We hope the information you are seeking is contained within this file.
If you have any questions, or require further information please contact us.
We look forward to being of further service.*

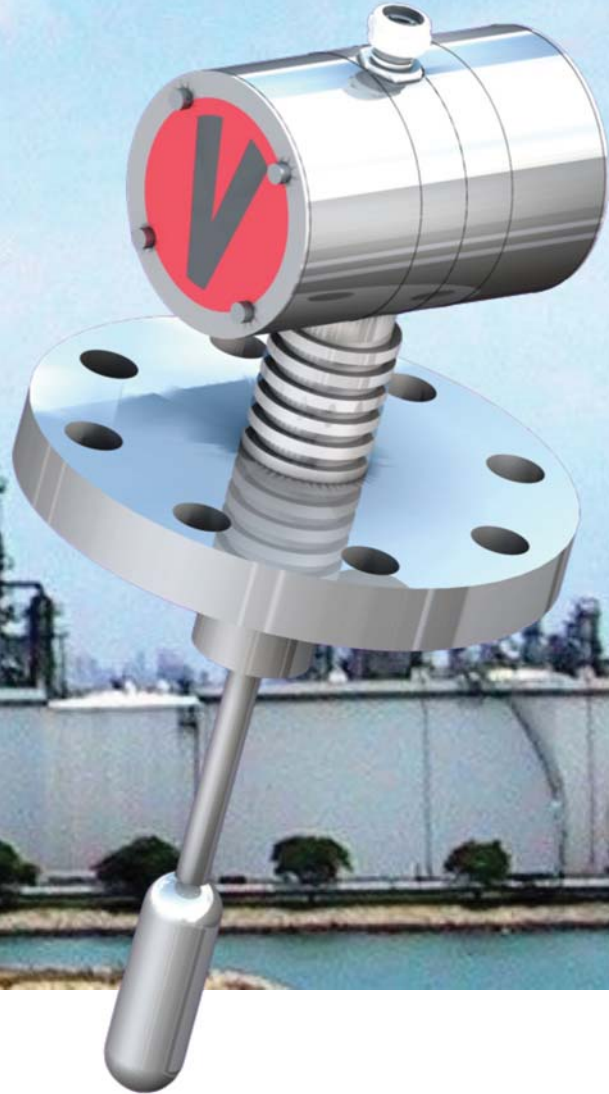
Regards from the Team at Rheology Solutions.

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ViscoTron VP-3000

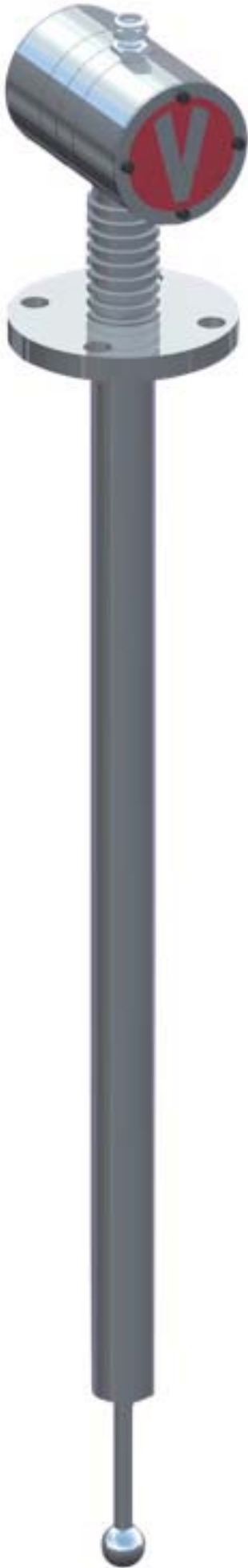
Viscosity transducers for
demanding process installations



Your process viscosity measurement solution

- ✓ Proven in many applications and installations
- ✓ Torsionally vibrating sensor, no wearing parts
- ✓ Fast real time in-line viscosity measurement
- ✓ Shear wave viscosity measurement
- ✓ Rugged, virtually no maintenance





ViscoTron VP-3000

The ViscoTron sensor series VP-3000 has been developed employing experience gained with the ViscoScope VA-300 sensor series over many years of sensor design, manufacture and customer experience. Customer requirements are often unconventional and the sensor design has to be able to adapt to those needs.

Innovative light guide assisted assembly allows the series VP-3000 sensor to be manufactured to match customer application requirements by using any length or shape of extension. The series VP-3000 is available in versions to measure low, medium, high or extra high viscosities. Sensors can be constructed for pressures up to 500 bar (7,250 psi) and temperatures up to 450°C (840°F). A PT100 inside the sensor bulb measures the temperature of the process. Calibration with Newtonian ASTM traceable fluids over 3 decades is standard with 4 decades optional.

These new generation sensors incorporate many new features, making them more flexible and easier to work with during installation, start-up and operation. They are designed to be adaptable to changing customer

needs, without having to re-construct the sensor. The sensor is gravity independent and therefore can be mounted in any direction.

The viscometer measures the drag of a fluid at the surface of the torsionally resonating sensor. The constant amplitude twisting motion creates a constant shear wave. Speed, direction and turbulence of flow have no influence on the measurement. The resonant frequency is dependent on the mechanical construction of the sensor. The microscopic motion is fast enough not to be influenced by outside mechanical vibrations, yet low enough to provide excellent sensitivity and resolution even for non-newtonian fluids.

The sensor shown in the picture has been designed for high viscosities and low pressures. The neck can be of any length, so the sensor can be used in high process temperatures without air cooling of the sensor housing. This ensures that the the sensor is kept at the actual process temperature.

The sensor is compatible with the traditional ViscoScope VS-4450 transmitter and the direct digital drive ViscoTron VT-G130 transmitter.

Specifications

Description	VP-3000LL	VP-3000L	VP-3000M	VP-3000H	VP-3000X
Viscosity range (mPa·s x g/cm ³)	0.00 to 1,000.00	0.00 to 2,500.00	0.0 to 25,000.0	0 to 250,000	0 to 5,000,000
Sensor length	185 mm	185 mm	155 mm	125 mm	120 mm
Maximum process temperatures with external transmitter	LTE STE HTE		< 175°C / 350°F < 350°C / 660°F < 450°C / 840°F		65 mm riser 125 mm riser 225 mm riser
Maximum process temperatures with internal transmitter	LTI STI HTI		< 75°C / 165°F < 130°C / 265°F < 300°C / 570°F		65 mm riser 125 mm riser 225 mm riser
Resonance frequency	150 to 600 Hz depending on construction				
Shear rate	942 - 3,750 sec ⁻¹ depending on construction (factory adjustable)				
Calibration	Computer assisted calibration with NIST traceable standards 3 decades standard 4 decades optional Calibration is independent of cable length with the Viscotron VT-G130 transmitter Calibration is dependent on cable length with the ViscoScope VS-4450 transmitter				
Repeatability	0.3% or ±1 digit				
Reproducibility	0.5% or ±1 digit				
Accuracy	1% or ±1 digit (factory calibrated with NIST standards)				
Process temperature	Measured with PT100 located inside the sensor bulb				
Hazardous area approval (optional)	ATEX: II 1/2 G EEx ia IIC T3 – T6 CSA International Class I, Div I, Group C and D				
Cable length	1000 meters / 3333 feet max. between sensor and transmitter				
Housing	IP65				
Wetted parts	SUS316L (1.4571) standard optionally Hastelloy C, Duplex, Monel Low friction, corrosion resistant coatings up to 300°C Other coatings available based on the application				
Process connection	3" 300# and DN80 PN40 standard Other process connections optional (maximum pressure capability of sensor: 500 bar / 7250 psig)				
NAE (Non-active extension)	Eliminates no flow areas in a pipe connection, a reactor or T-piece. Can also be used to bridge gaps in low level applications. Standard Ø 38 to 48 mm / 1.5 to 1.875" Length = up to 1,000 mm / 40.0" NAE available in other diameters, lengths and special shapes				

VP-3000 ViscoTron sensor for ASME Flanges

VP-3000	Code	Sensor type	mPa.s x gr/cm ³	Calibrated range:
	LL	Extra Low viscosity	0.10 to 1,000.00	Calibrated range:
	L	Low viscosity	0.10 to 2,500.00	Calibrated range:
	M	Medium viscosity	1.0 to 25,000.0	Calibrated range:
	H	High viscosity	10 to 250,000	Calibrated range:
	X	Extra high viscosity	100 to 5,000,000	Calibrated range:

Code	Process temperature	
LTE	< 175°C / 350°F (includes 65 mm riser)	use with external transmitter
STE	< 350°C / 660°F (includes 125 mm riser)	use with external transmitter
HTE	< 450°C / 850°F (includes 225 mm riser)	use with external transmitter
LTI	< 75°C / 165°F (includes 125 mm riser)	c/w internal transmitter
STI	< 130°C / 265°F (includes 125 mm riser)	c/w internal transmitter
HTI	< 300°C / 575°F (includes 225 mm riser)	c/w internal transmitter

Code	Process connection	
1	3" 300#	ASME Flange
2	3" 150#	ASME Flange
3	3" 600#	ASME Flange
4	4" 300#	ASME Flange
5	2" 150#	ASME Flange
6	Tri-Clamp 3"	
7	4" 600#	ASME Flange
9	Others on request	

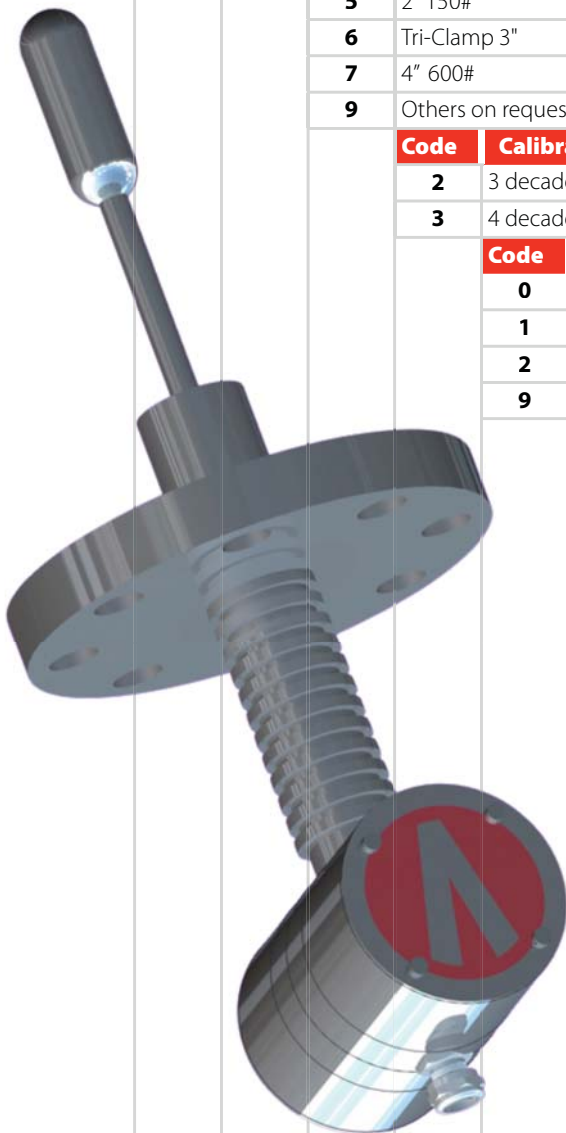
Code	Calibration
2	3 decade range (using all available calibration oils in desired range)
3	4 decade range (using all available calibration oils in desired range)

Code	Non-Active-Extension (NAE)	
0	None	
1	Ø 38 to 48 mm x 1000 mm max	Length in mm
2	Ø > 48 mm x 1,000 mm max	Length in mm
9	Special shapes, lengths and sizes on request	

Code	Installation type (Approvals include Stahl barriers)
0	General purpose areas (no barriers)
2	ATEX II 1/2G EEx ia IIC T3 – T6 (code xTE only)
5	CSA Class I, Div I, Group C and D (code xTE only)
9	Specials like secondary seal or other approvals

Code	Coating and materials for wetted parts
0	SUS316L
1	Teflon coating
2	Hastelloy C22
3	Duplex SAF 2205
6	SUS316L mirror polishing
7	Hastelloy C22 mirror polishing
8	Duplex SAF 2205 mirror polishing
9	Special sensor coating or material on request

Code	Process temperature measurement
0	No temperature measurement
1	PT100 internal to sensor

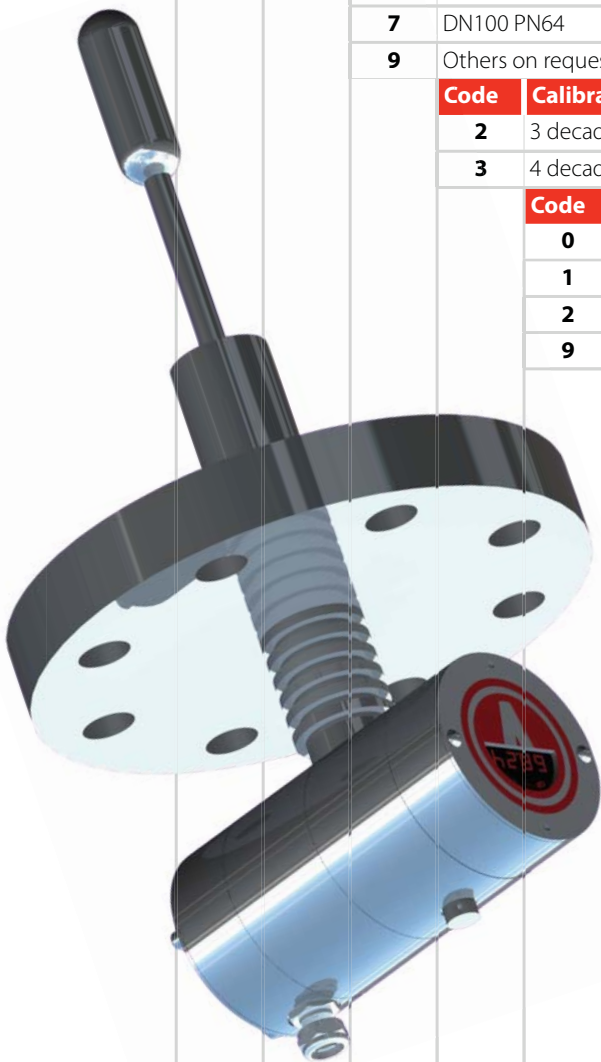


VP-3000	L	LTI	1	2	0	0	1	1	EXAMPLE ORDERING INFORMATION
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VP-3000 ViscoTron sensor for DIN Flanges

VP-3000

Code	Sensor type			Calibrated range:	
LL	Extra Low viscosity	0.10 to 1,000.00	Calibrated range:		
L	Low viscosity	0.10 to 2,500.00	Calibrated range:		
M	Medium viscosity	1.0 to 25,000.0	Calibrated range:		
H	High viscosity	10 to 250,000	Calibrated range:		
X	Extra high viscosity	100 to 5,000,000	Calibrated range:		
Code	Process temperature				
LTE	< 175°C / 350°F (includes 65 mm riser)	use with external transmitter			
STE	< 350°C / 660°F (includes 125 mm riser)	use with external transmitter			
HTE	< 450°C / 850°F (includes 225 mm riser)	use with external transmitter			
LTI	< 75°C / 165°F (includes 125 mm riser)	c/w internal transmitter			
STI	< 130°C / 265°F (includes 125 mm riser)	c/w internal transmitter			
HTI	< 300°C / 575°F (includes 225 mm riser)	c/w internal transmitter			
Code	Process connection				
1	DN80 PN25/40	DIN Flange			
2	DN80 PN16	DIN Flange			
3	DN80 PN64	DIN Flange			
4	DN100 PN40	DIN Flange			
5	DN50 PN16	DIN Flange			
6	Varivent Flange				
7	DN100 PN64	DIN Flange			
9	Others on request				
Code	Calibration				
2	3 decade range (using all available calibration oils in desired range)				
3	4 decade range (using all available calibration oils in desired range)				
Code	Non-Active-Extension (NAE)				
0	None				
1	Ø 38 to 48 mm x 1000 mm max	Length in mm			
2	Ø > 48 mm x 1,000 mm max	Length in mm			
9	Special shapes, lengths and sizes on request				
Code	Installation type (Approvals include Stahl barriers)				
0	General purpose areas (no barriers)				
2	ATEX II 1/2G EEx ia IIC T3 – T6 (code xTE only)				
5	CSA Class I, Div I, Group C and D (code xTE only)				
9	Specials like secondary seal or other approvals				
Code	Coating and materials for wetted parts				
0	SUS316L				
1	Teflon coating				
2	Hastelloy C22				
3	Duplex SAF 2205				
6	SUS316L mirror polishing				
7	Hastelloy C22 mirror polishing				
8	Duplex SAF 2205 mirror polishing				
9	Special sensor coating or material on request				
Code	Process temperature measurement				
0	No temperature measurement				
1	PT100 internal to sensor				



VP-3000	x	HTE	9	2	1	2	0	1	EXAMPLE ORDERING INFORMATION
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Application Examples



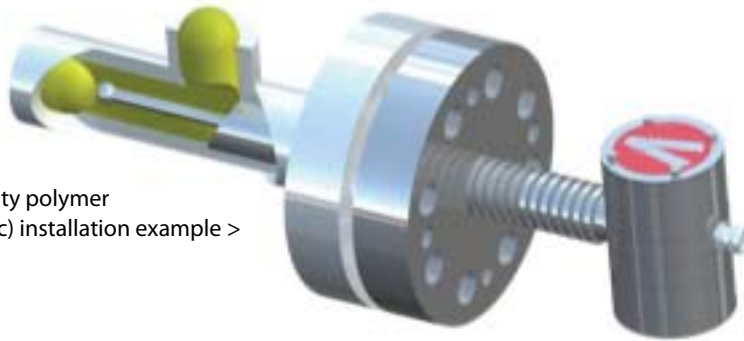
< Batch resin reactor installation

Large pipe installation

v



Polymers
Batch Resins
Silicone
Emulsions
Crude Oil
Blending
Black Liquor
Ceramics
Additives
Slurries
Coatings
Spray Driers
Food Industry
Sauces
Creams
Cheese
Milk Powder



High viscosity polymer
(PET, PBT etc) installation example >

Compatible Transmitters

For more info see the transmitter brochure



ViscoTron VT-G130 transmitter (wall mount)



ViscoScope VS-4450 transmitter (panel mount)

exclusively represented in Australia by:



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