



Covimat 205 DC

Inline viscosity measuring for high temperatures and high pressures

The Covimat 205 is a proven viscometer, that when integrated within the manufacturing process - can measure the viscosity of a liquid, 24 hours a day - 365 days a year. It delivers the data without wasting time, resources and any of the product itself.

The Covimat 205 DC is a rotational rheometer that is widely used when high temperatures and pressurized liquids are being used. It enables you to monitor the viscosity based on the DIN 53019 during the processing or manufacturing procedure.

The measuring principle of a rotational rheometer can be explained as followed: A measuring bob is submerged into a product and rotates at a pre-defined speed. The force created by the liquid trying to stop the rotation of the bob is used for measuring the viscosity of a product.

As the Covimat is a rotational rheometer, the viscosity of the product is measured without having to take the density of the product into consideration. Unlike vibrating- or capillary viscometers, the Covimat is not affected by any variation in the density of the product.

A direct comparison to the data collected in a laboratory is possible, as laboratories use the same principle when measuring the viscosity of a product.

The wide choice of measuring bobs and rotation speeds mean that all pastes and liquids can be measured, as long as they can be pumped.

All Covimat 205 process viscometers are protected against explosion and deliver a signal that can be used for directly regulating the production process.

The Covimat 205 DC consists of 3 parts:

- Metering head
- Measuring cell with spacer
- Measuring bob



The Metering head

The metering head of the Covimat holds the electronics that have two functions:

- Controlling the motor that rotates the measuring bob with a user defined speed
- Measuring the viscosity and providing an analogue signal.

The speed of rotation can be set to one of 5 preset speeds using an internal switch. It can also be controlled by an external input signal.

A torsion element is used to measure the viscosity of a product.

The output is a 4-20 mA signal proportional to the measured torque/viscosity. This signal can be recorded or utilised to control the customer's production line.

The metering head is protected against explosion according to ATEX.



new design

Technical Data:

Weight:	8,1 kg	Motor speed range:	Switched
Overall dimensions:	Height 386 mm Width 150 mm Depth 150 mm	200/ 94.6/ 44.7/ 21/ 10 rpm	
Output signal: (analogue signal)	4 – 20 mA	External control signal:	0 – 10 V or 4 – 20 mA
Max. Torque:	4 mNm,	Supply voltage:	20 - 28 VDC
Torque tolerance:	1 % of the measured value. Other tolerances are available by special request	Supply current:	<200 mA at 24 VDC)
		Safety:	Ex II 1/2 G Ex de IIB T6 BAS-00ATEX2113X
		Operating temperature:	0 - 50 °C
Motor speed:	200 to 10 rpm	Mounting position:	Upright ± 3°

DC measuring cells

The measuring cells are available in two versions:

S.I. Instruments
256 South Rd. Hilton
South Australia 5033
Ph (08) 8352 5511

info@si-instruments.com.au
www.si-instruments.com.au



Spacer:

The measuring area is totally enclosed and is coupled up to the metering head via a magnetic coupling. There is no joint axle between the head and the measuring cell and there are also no bushings.

The cells can be cleaned using the usual cleaning agents. They are not pigable. To protect the metering head when high temperatures are involved, a spacer is inserted enlarging the distance between the head and measuring cell.

Measuring bob

There is a wide range of measuring bobs available to cover all of your measuring needs. The standard sizes are: 24, 35, 51, 57, 59 mm Ø.

Low viscose substances can also be measured using a double gap measuring system.

Measurement system bearing: Ruby/sapphire



Measuring area and resolution DC

Measuring bob Ø in mm	59	57	51	35	24
Min. Viscosity [mPas]	9	20	60	240	720
Max. Viscosity [mPas]	920	2.000	6.000	24.000	72.000
Resolution [mPas/0,1 mA]	5,7	12,4	37,1	148,5	445,5

(Viscosity calculated using a pressureless, resting Newtonian liquid.)

Included in standard delivery:

Metering head Covimat 205 DC
Measuring bob
Measuring cell with spacer



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- **Laborrheometer**
- **Prozessviskosimeter**
- **Service**
- **Kalibrierung**
- **Beratung**

Covimat 205 DC 40E

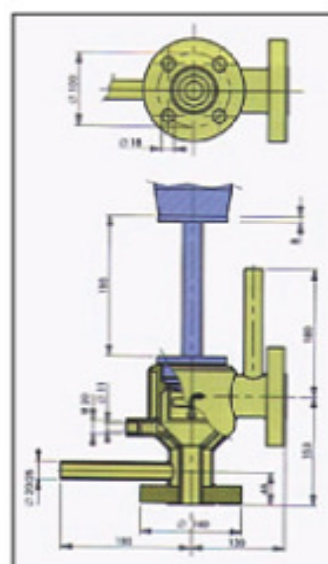
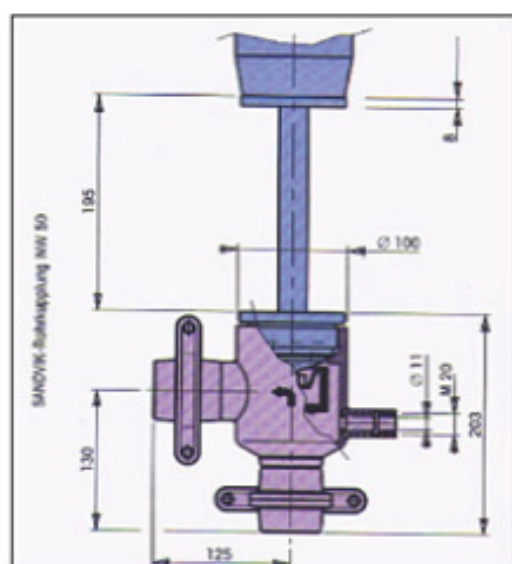


The DC 40E range is designed for continuous measurement of viscosity at low pressures and high temperatures.

The DC 40D range is suitable for continuous measurement of viscosity at high pressures and high temperatures. To prevent heat loss, the 40D has an isothermal (jacketed) wall.

The 205 DC 40E and DC 40D measuring cells are suited for continuous measurement of viscosity within the manufacturing process. Both cells are equipped with a thermowell to accept a Pt100 temperature sensor for direct measurement of the product temperature.

Covimat 205 DC 40D



Technical data: DC 40E

max. temp. of product	250 °C
max. pressure	25 bar
max. pressure within wall	
max. flow rate	< 40 l / min
feed-in and out diameter:	NW 50
Possible connections:	DIN 50 PN 40 RF 2" ANSI 150 RF 2" Tri Clamp 2" IDF
Material of measuring cell:	1.4436
Material of bearing:	sapphire
Weight incl. metering head	ca. 16 kg
Viscosity range	1 to 7,2 x 10 ⁵ mPas

DC 40D

300 °C	
170 bar	at 20 °C
93 bar	at 300 °C
70 bar	at 20 °C
42 bar	at 300 °C
< 40 l / min	
NW 25	
DN25 PN100 RTJ	1½" ANSI 150 RF
81053AAB	1½" ANSI 600 RF
1½" ANSI 900 RF	81053AAD
1.3952	
sapphire	
ca. 21 kg	
1 to 7,2 x 10 ⁵ mPas	

(Range depends on measuring bob used. Rev speed can also be varied.)