Rotating viscometers ST-Digit

MICROPROCESSOR CONTROLLED THAT GUARANTEES THE OPTIMUM PRECISION OF: ±1% FULL SCALE. EXCELLENT REPRODUCTIBILITY, MEASURED VISCOSITY: <0.2 % VARIATION.
MODEL DEPENDENT, DIGITAL DISPLAY OF CP O POISE.
WIDE RANGE OF MEASUREMENT SPEEDS.

Description

The function of a rotational viscometer is based on the resistance of a liquid to twist against a known spindle (worm screw) that is submerged in it.
A spindle cylinder or spinning disc is fastened with a turn screw to an upright motor that rotates at a predetermined speed. The angle of deviation of the axis is electronically measured, giving the measurement resistance (torque) of the liquid.
The calculations within the viscometer with the parameters provided of :resistance (torque), the speed of the axis and characteristics of the spindle provide a direct measurement of viscosity in centipoises (mPas).
The Selecta range of viscometers have a wide selection of known spindles characteristics and a wide range of stir speeds, which means that a wide range of sample viscosity can be measured. The viscometer is programmed with these characteristics and will adjust the scale depending on the chosen spindle. By knowing the speed and the spindle cP can be measured. The range of scales chosen for the spindle and the selection of different speeds optimises the conditions of measurement that provides real properties of the liquid being measured.

Turning display.

Applications

Used in quality control and research laboratories. Due to the portability of the unit ideal, for industrial application include oils, dispersion of emulsions, dairy products, plastisols etc.

Models	Resolution
ST-DIGIT L	0.01 to 10 cP
ST-DIGIT R	0.1 to 100 cP
ST-DIGIT H	0.1 to 10 Poise

Features

The ST-DIGIT models have a total of 19 speeds that range from 0.3 to 200 rpm. And a range of spindles. The display can be adjusted for optimum visibility.

Push buttons on the front provide easy entry of parameters.
A LCD display provides all the available options.
Displayed parameter:
- Selected speed .....rpm.
- Selected spindle ..... SP.
- Viscosity scale ..... cP.
- Proportion of the scale .....%

Automatically completes a self check calibration of various speeds. An audible alarm sounds if an error is detected.
Out of range measurements are shown by a visual and audible alarm. The unit is protected against variation in power from the mains. A bubble level and level adjustment to set the optimum position of the instrument.
Selection of languages: English, French, German, Italian, Japanese, Spanish, Catalan and others.
The speed can be varied without the need to stop the instrument.

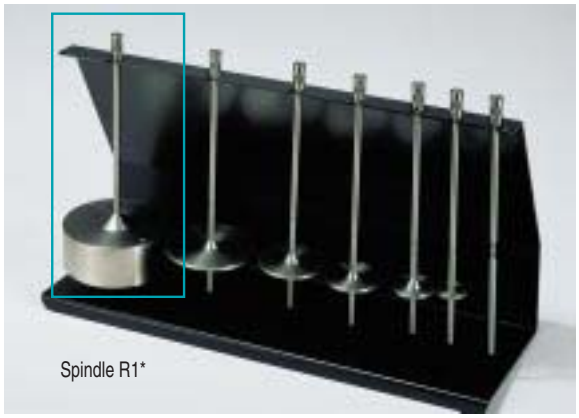
Control Panel

Main ON/OFF switch at the back of the instrument.
Keypad at the front with 5 push button keys with LEDs that allow for the selection of the most adequate parameter selection.

Spindles

All of the spindles are made of AISI 316 stainless steel and are easily identified by their corresponding number. This makes the selection for the determination of viscosity and changing of spindles very easy.

Rack support for spindle standards L1, L2, L3 and L4 for the ST-DIGIT L.



Rack support for spindle standards R2, R3, R4, R5, R6 and R7 for the ST-DIGIT R and H.
* The R1 spindle is provided as an accessory.

Models	Part No.	Range	No of ranges	Speed rpm.	Spindles	Power W	Wt Kg
ST-DIGIT L	1000982	3 to 2000000 cP	76	0.3 - 0.5 - 0.6 - 1 - 1.5 - 2	L1 to L4	15	5
ST-DIGIT R	1000983	20 to 13000000 cP	114	2.5 - 3 - 4 - 5 - 6 - 10 - 12 - 20	R2 to R7	15	5
ST-DIGIT H	1000984	1.6 to 1060000 Poise	114	30 - 50 - 60 - 100 and 200	R2 to R7	15	5

Comes complete with: support rack , 4 or 6 spindles (model dependent), protector, base with adjustable feet, carrying case, manual with full instructions and spindle selection tables.

ACCCESSORIES

Spindle R1 for low viscosity measurements,
suitable for the ST-DIGIT R & H Part No 1000990

Protectors for spindles.
Part No. 1000991 for ST-DIGIT L.
Part No. 1000992 for ST-DIGIT R.

ST-DIGIT with adapter for small sample volumes.

Sample adapters for measuring small sample volumes.
Suitable for all models ST-DIGIT.
Sample volume from 8 to 13 ml.
The small sample adapter has a water jacket with connections for a re-circulator for temperatures from -10 °C to 100 °C
Part No. 1000986

Set of spindles standards (3-4 Model dependent).

Part No.	Spindle	Model	Range
1001224	TL 5 - TL 6 - TL 7	ST-DIGIT L	3 to 200000 cP
1001225	TR 8 - TR 9 - TR 10 - TR 11	ST-DIGIT R	40 to 3300000 cP
1001225	TR 8 - TR 9 - TR 10 - TR 11	ST-DIGIT H	3 to 266000 Poise

Adapters for low viscosity measurements.
This accessory is indispensable for samples of low viscosity, especially if precise and reproducible results are required. Suitable for the L and R models only. Reproducible down to 0.45 cP.
With a minimum sample volume of 16 to 18 ml.
The adapter has a water jacket for maintaining a constant temperature with the use of a re-circulator for temperatures from -10 to 100 °C.
Viscosity range:
ST-Digit L: 3 to 2000 cP.
ST-Digit R: 32 to 21333 cP.

Part No. 1000985

Adaptor for low viscosity samples.

Accessories

Model ST-DIDIT with displacement accessory.

Standard spindles are not suitable for measuring viscosity in creams, pastes, gelatine and fats etc. as they produce a cavity that will give erroneous results. For this type of sample a displacement accessory is required.

Displacement accessory adapter with variable height. Suitable for all ST-DIGIT models. The special spindles provided has a T shaped spindle. The head has an automatic higher and lower height adjustment that allows the spindle to track the movement of cavitation and maintain the spindle in the correct position within the fluid being measured.
Viscosity range:
ST-DIGIT L: 1560 to 3120000 cP
ST-DIGIT R: 16600 to 33300000 cP.
ST-DIGIT H: 1300 to 2600000 Poise.
Part No. 1000988

Electronic temperature controller ST-TEMP attached to the viscometer ST- DIGIT.

Electronic temperature control ST-TEMP.
Controls the sample temperature quickly and accurately from +15 to 150 °C for samples of between 8 to 13 ml.
The system operates by electronically heating and cooling the sample using semiconductors even for below ambient temperature without the need of a compressor or external circulating device
Precision: ± 0.05 °C.
Display resolution: 0.1 °C

Only suitable for small volumes and small spindles (models TL and TR) as previously.
Unit comprises of:
Control unit, with microprocessor and LCD display that shows the following parameters: select °C or °F, temperature range and chosen language.
Unit for sample thermostatization.
Support for the viscometer column.
Rack sample support
Forceps for extracting the sample
Case, with separate sections for the storage of individual unit parts.
Part No. 1001226

Carry case with corresponding sections for accessories and viscometer.

Standard oils.
Comes with test certificate of approval.

Part No.	Calibration fluid cP	Volume ml
1001023	48	470
1001026	960	470
1001187	4800	470
1001188	12000	470

Flow cups for measuring liquid viscosity

CUP NO. 4 ACCORDING TO THE DIN STANDARD 63211.
CUPS ACCORDING TO THE ISO STANDARD 2431.
CUPS FOLLOWING THE ASTM STANDARD D-1200.

All cups issued with a test certificate and calibration results measures against and traceable to known approved standards. (Except for the cups with handles and the ASTM model)

Features

For EFFLUX viscous sample measurements of paint ,ink, varnish etc. from 5 to 700 cSt, model dependent. Metal cups made of tin, calibrated and chrome plated.

Cups with handles.
Models DIN 53211 No. 4 and Ford ASTM D-1200.

Flow cups standard models.

ACCESSORIES:
Tripod support stand and levelling disc with bubble level incorporated.
Part No. 7001021

Temperature cups with threaded base that attaches to a water bath stand and "Electemp" temperature control unit.

ACCESSORIES:
Water bath with heater with levelling disc.
Part No. 7001022

Temperature controller "Electemp" and Pt100 probe.
Part No. 3000887

ACCESSORIES: Calibration standards in 470 ml flasks, comes complete with test certificate. All measurement at 25 °C.

						< Viscosity / Part No. >					
Part No.	Approved	Bore Ø mm	Format	Range cSt	Fall times	9 cSt 1001281	17 cSt 1001282	34 cSt 1001283	120 cSt 1001284	235 cSt 1001285	168 cSt 1001286
1000123	DIN 53211	4	Standard	90 to 700	25" to 100"	-	-	Yes	Yes	Yes	Yes
7001239	DIN 53211	4	Heated	90 to 700	25" to 100"	-	-	Yes	Yes	Yes	Yes
1000347	DIN 53211	4	With handle	90 to 700	25" to 100"	-	-	Yes	Yes	Yes	Yes
1001013	ISO 2431	3	Standard	5 to 42	30" to 100"	Yes	Yes	Yes	-	-	-
7001017	ISO 2431	3	Heated	5 to 42	30" to 100"	Yes	Yes	Yes	-	-	-
1001014	ISO 2431	4	Standard	35 to 135	30" to 100"	-	-	-	Yes	-	-
7001018	ISO 2431	4	Heated	35 to 135	30" to 100"	-	-	-	Yes	-	-
1001015	ISO 2431	5	Standard	100 to 350	30" to 100"	-	-	-	Yes	Yes	-
7001019	ISO 2431	5	Heated	100 to 350	30" to 100"	-	-	-	Yes	Yes	-
1001016	ISO 2431	6	Standard	190 to 680	30" to 100"	-	-	-	-	Yes	Yes
7001020	ISO 2431	6	Heated	190 to 680	30" to 100"	-	-	-	-	Yes	Yes
		2.53		25 to 120	20" to 100"						
1000705	ASTM D-1200	3.40	Standard	40 to 220	20" to 100"	-	-	Yes	Yes	Yes	Yes
		4.12		70 to 370	20" to 100"						
		2.53		25 to 120	20" to 100"						
7000706	ASTM D-1200	3.40	Heated	40 to 220	20" to 100"	-	-	Yes	Yes	Yes	Yes
		4.12		70 to 370	20" to 100"						
		2.53		25 to 120	20" to 100"						
1000707	ASTM D-1200	3.40	With handle	40 to 220	20" to 100"	-	-	Yes	Yes	Yes	Yes
		4.12		70 to 370	20" to 100"						

Viscometer ‘Ubbelohde’

ASTM D445- ASTM D446- ISO 3104- ISO 3105

SUITABLE FOR TRANSPARENT LIQUIDS.
WITH CALIBRATION CERTIFICATE.
TOTAL LENGTH 283 mm.
PERMANT AMBER LINING.

Part No.	Type	Nominal constant	Viscosity range cSt
5600001	0	0.001	0.3 to 1
5600002	0C	0.003	0.6 to 3
5600003	0B	0.005	1 to 5
5600004	1	0.01	2 to 10
5600005	1C	0.03	6 to 30
5600006	1B	0.05	10 to 50
5600007	2	0.1	20 to 100
5600008	2C	0.3	60 to 300
5600009	2B	0.5	100 to 500
5600010	3	1.0	200 to 1000
5600011	3C	3.0	600 to 3000
5600012	3B	5.0	1000 to 5000
5600013	4	10.0	2000 to 10000
5600014	4C	30.0	6000 to 30000
5600015	4B	50.0	10000 to 50000
5600016	5	100.0	20000 to 100000

Viscometers ‘Cannon Fenske’ transparent

ASTM D445- ASTM-D446- ISO 3104- ISO 3105-IP 71

SUITABLE FOR TRANSPARENT LIQUIDS.
WITH CALIBRATION CERTIFICATE.
CONSTANT 40 °C & 100 °C.
TOTAL LENGTH 250 mm.
PERMANT AMBER LINING.

Part No.	Series	Nominal constant	Viscosity range cSt
5600050	25	0.002	0.4 to 1.6
5600051	50	0.004	0.8 to 3.2
5600052	75	0.008	1.6 to 6.4
5600053	100	0.015	3 to 15
5600054	150	0.035	7 to 35
5600055	200	0.1	20 to 100
5600056	300	0.25	50 to 200
5600057	350	0.5	100 to 500
5600058	400	1.2	240 to 1200
5600059	450	2.5	500 to 2500
5600060	500	8	1600 to 8000
5600061	600	20	4000 to 20000

Viscometer ‘Cannon Fenske’ opaque

ASTM D445 - ASTM D446- ISO 3104 - ISO 3105

SUITABLE FOR TRANSPARENT AND OPAQUE LIQUIDS.
WITH CALIBRATION CERTIFICATE.
CONSTANT 40 °C & 100 °C
TOTAL LENGTH 295 mm.
PERMANT AMBER LINING.

Part No.	Series	Nominal constant	Viscosity range cSt
5600065	25	0.002	0.4 to 1.6
5600066	50	0.004	0.8 to 3.2
5600067	75	0.008	1.6 to 6.4
5600068	100	0.015	3 to 15
5600069	150	0.035	7 to 35
5600070	200	0.1	20 to 100
5600071	300	0.25	50 to 200
5600072	350	0.5	100 to 500
5600073	400	1.2	240 to 1200
5600074	450	2.5	500 to 2500
5600075	500	8	1600 to 8000
5600076	600	20	4000 to 20000

See Petroleum Testing Equipment section.