ViscoClock.
If you need more accuracy:

The ViscoClock is the economically priced introductory model in the field of automatic viscosity measurements. Manual measurements with a stopwatch and a trained eye is therefore something of the past because time is money.

The ViscoClock

The ViscoClock is an electronic time-measuring unit used to determine abso-lute and relative viscosity. It consists of a stand which is used to mount a viscometer and the electronic measuring unit. The two measuring levels are integrated in the stand made of high-quality PPA synthetic material, and the electronic measuring unit is included in a PP casing. The large LCD display allows the measured values to be read off easily.

Range of use

The ViscoClock is designed for the use of an Ubbelohde viscometer, a Micro-Ubbelohde viscometer or a Micro-Ostwald viscometer made by SCHOTT Instruments. The ViscoClock automatically measures the flow-through time of temperature-stabilized liquids through the capillaries of the viscometer at temperatures ranging from -40 °C to 150 °C.

The ViscoClock can be used with any SCHOTT Instruments thermostats bath. The viscometer stand is included.

For temperature stabilization in the thermostatic bath, the following tempering liquids are suitable: water, alcohol water (e.g. ethanol, methanol), paraffin oil, and silicone oil. Liquids can be measured that qualify for use with the viscometer being used in each instance.

Accuracy

The most precise method used to determine the viscosity of liquids is their measurement in capillary viscometers; the ViscoClock functions according to this method. The operating time is indicated with a resolution of 1/100 sec. with quartz precision. The accuracy of 0.01 % of the measured time used to calculate the absolute and relative viscosity is indicated as measuring uncertainty with a confidence level of 95 %.

Absolute viscosity

Only the calibrated viscometers made by SCHOTT Instruments are suitable for the calculation of absolute viscosity in the temperature-stabilized, transparent thermostatic bath.

Relative viscosity

For the measurement and calculation of relative viscosity, all Ubbelohde viscometers, uncalibrated and calibrated, can be used for manual or automatic measurements.

Technical data ViscoClock

Measuring range - time	up to 999.99 s; resolution 0.01 s
Accuracy of time measurement	± 0.01 s/ ± 1 digit; however no more precise than 0.1 %; indicated as measuring uncertainty with a confidence level of 95 %
Measuring range - viscosity	0.35 …10,000 mm^2/s (cSt) the absolute, kinematic viscosity is additionally dependent on the uncertainty of the numerical value of the viscometer constant and on the measuring conditions, in particular the measuring temperature
Display	5-digit LCD display, 20 x 48 mm (H x W), digit height 12.7 mm, seconds indication with 2 decimal digits after the decimal point, resolution 0.01 s
Voltage supply	low voltage U: 9 V
Plug-in connection	socket for low voltage connection: jack plug, internal contact Ø = 2.1 mm, plus pole at pin contact, for connection of a TZ 1848 or TZ 1859 power supply unit
Power supply	in accordance with class of protection III. degree of protection for dust and humidity IP 50 in accordance with DIN 40 050 power supply unit 230 V, 50-60 Hz (TZ 1848) power supply unit 115 V, 50-60 Hz (TZ 1859), with US-plug not suitable for use in areas subject to explosion hazards
RS-232-C interface	for connection of a printer with serial interface or of a computer (PC) for documentation of the data
Plug-in connections	4 pole circular plug, mini, DIN
Configuration of RS-232-C interface, permanently set	4800 baud, 7 bit word length, 2 stop bits, no parity; after each measurement, the measured value is transmitted automatically. the string of digits consists of 4 digits before the decimal point, 2 digits after the decimal point, and the terminating characters CR and LF.
Ambient temperature	+10 …+40 °C for storage and transport
Operating temperature	stand: -40 …+150 °C electronic measuring unit: +10 …+40 °C
Air moisture	in accordance with EN 61 010, Part 1; max. relative humidity 80 % for temperatures up to 31 °C, decreasing linearly to 50 % of relative humidity at a temperature of 40 °C
Materials	stand: polyphthalamide (PPA) casing*: polypropylene (PP) sealing membrane: silicone
Dimensions	approx. 490 x 95 x 50 mm (H x W x D)
Weight	approx. 450 g (without viscometer) power supply unit: approx. 220 g
Country of origin	Federal Republic of Germany
CE symbol	in accordance with Guideline 89/336/EWG (electromagnetic compatibility EMC): emitted interference in accordance with Standard EN 50 081, Part 1 interference immunity in accordance with Standard EN 50 082, Part 2, in accordance with Guideline 93/23/EWG (low voltage guideline), last altered by Guideline 93/68/EWG: Testing basis EN 61 010, Part 1
Viscometer types	Ubbelohde (DIN; ISO; ASTM; Micro), Micro-Ostwald
Transparent thermostatic baths	the ViscoClock can be used in every transparent thermostatic bath made by SCHOTT Instruments.

** Use in heat carrier liquids can result in discoloration of the synthetic material. The discoloration does not, however, have any effect on the function and quality of the ViscoClock.*