

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 something of the past because time is money.

The ViscoClock

The ViscoClock is an electronic time-measuring unit used to determine absolute 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 our Ubbelohde viscometer, Micro-Ubbelohde viscometer or Micro-Ostwald viscometer. 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.

For temperature stabilization in the thermostatic bath, the following liquids are suitable: water, alcohol water, paraffin oil, and silicone oil. Liquid samples can be measured that qualify for use with the viscometer being used in each instance.

Accuracy

The operating time is indicated with a resolution of 1/100 sec. with quartz precision. The accuracy of 0.1 % 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 are suitable for the calculation of absolute viscosity in the temperature-stabilized, transparent thermostatic baths.

Relative viscosity

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



- Simple and highly precise time measurement
- Use with common viscometers is possible
- Includes software for determination of absolute and relative viscosity, t0-extreme value test and Hagenbach correction

Advantages
ViscoClock

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 to 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
Power connection	socket for low voltage connection: jack plug, internal contact Ø = 2.1 mm, plus pole at pin contact, for connection of Universal power supply TZ 1858
Power supply	in accordance with class of protection III. degree of protection for dust and humidity IP 50 in accordance with DIN 40 050 Universal power supply TZ 1858: 100–240 V, 50–60 Hz (9 V, 550 mA) not suitable for use in areas subject to explosion hazards RS232-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 RS232-C interface, permanently set 4,800 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 Conditions	Ambient temperature + 10 to + 40 °C for storage and transport Operating temperature stand: - 40 to + 150 °C electronic measuring unit: +10 to +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
Housing	Materials stand: polyphthalamide (PPA) casing*: polypropylene (PP) sealing membrane: silicone Dimensions ~490 x 95 x 50 mm (H x W x D) Weight ~450 g (without viscometer) power supply unit: ~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 one of our transparent thermostatic bath.

* 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. DURAN® is a registered trademark of Duran Group. Subject to technical changes.