

# Chronoscope M10



## Test system for the simultaneous measurement of 10 mechanical watches

The Chronoscope M10 is a versatile measuring system that can test a large numbers of mechanical watches in production lines. Up to 10 watches (with or without wristlet) or movements inside protective containers can be placed into the microphones. The identification of the movement and the storage of measurement results into a central database

ensure the tractability of all test steps.

Graphical long term analysis up to 50 hours can also be performed.

The Chronoscope M10 can be networked at any time into a WiCoTrace group of instruments.

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## Technical Data

### Measurement possibilities

- **Standard measurement** Rate accuracy, amplitude and beat error of mechanical watches
- **Graphic analysis** Records up to 50 hour.
- **Interval measurement** Execution of the measurements in a definable interval during a certain period

### Beat number

Adjustable for all beat numbers from 3600 to 43'200 A/h

### Lift angle

Selectable from 10° to 90°

### Stabilisation time

Selectable from 00:00 to 60:00 minutes

### Measurement

Selectable from 00:00:02 to 50:00:00 hours

### Test modes

- **Stnd** Standard mode for watches with Swiss escapement
- **Spe1** Mode for watches with coaxial escapement
- **Spe2** Mode for watches with AP escapement
- **Spe4** Mode with specific amplitude filter for watches with Swiss escapement

### Signal gain

Selectable from 1 to 4

### Measurement capability

Rate measurement (high resolution)

Measurement range: +/- 999.9 s/d (+/- 99.99 s/d)

Resolution: 0.1 s/d (0.01 s/d), accuracy +/- 0.1 s/d

Beat error

Measurement range: 9.9 ms, resolution 0.1 ms

Accuracy +/- 0.1 ms

Amplitude (high resolution)

Measurement range: 80° to 360°, resolution 1° (0.1°)

Accuracy: +/- 1.0°

### Functions

10 microphones for movements and watches with or without wristlet. The microphones are simultaneously opened/closed by the protective hood.

For the measurement up to 6 measuring positions are possible.

### Details

The built-in electronic unit contains 10 measuring channels

Time base: Pre-aged and thermo-compensated high frequency quartz, OCXO

Stability: +/- 0.004 s/d between 10° and 50° C

Aging: for the first year max. +/- 0.03 s/d

USB interface for PC attachment.

Basic plate and casing: aluminium, silver.

Protection hood: smoked Plexiglas.

Dimensions: 560x400x460 mm (w x h x d).

Weight: 60kg.

Connection to the mains:

- 230V~ (210 - 250 V~) 50/60 Hz (45 - 65 Hz). Mains with 10 A safety switch and connection to the protective ground
- 120V~ version on demand

### Requirements of the PC

- Operating system: Windows 7, Windows 8 or Windows 10.
- Processor: at least i5
- RAM: at least 4 GB
- Hard disc: at least 128 GB
- CD/DVD writer: for database backup
- Interfaces: USB and Ethernet
- Graphic card: separate with at least 512 RAM
- Monitor: at least 19" with a minimum resolution of 1280 x 1024

### Accessories

PC Dell with 19 " TFT monitor, keyboard, mouse and Windows.	64.121x
Printer HP LaserJet.	JB01-HP-LJET-ML
Label printer CT-S851 with USB interface	JB01-CT-S851BK
Thermo paper for CT-S851	JB01-MM58-DPU20-N
Bare code reader Gryphon USB	JB01-901651082