

Technical Data

ChronoTracker XA

Watch Face, second's hand analyses

The passing of the second's hand is detected by an optical sensor. The sensor's signal is analysed to give both instantaneous and absolute rate measurements (extrapolated if needed).

ChronoTracker XB

Watch Movement, balance wheel analysis

The passing of the spokes of the balance wheel and the movement of the escapement lever are detected by an optical sensor. The sensor's signal is analysed to extrapolate the accuracy over a day (24h, instantaneous rate), to calculate the instantaneous amplitude and the beat symmetry characteristics (*repère*).

ChronoTracker XT

Watch Face and Movement analysis

The measurement modes of both systems, XA and XB, are combined. Advanced analysis on *Tourbillon* movements (Rate only) and quality factor determination in free mode are integrated.

Measurement Modes and User Interface Display Settings

ChronoTracker XA

- Instantaneous rate calculated after 4 to 10min depending on the movement's gear accuracy.
- Acquisition time limit: None, indefinite recording.

ChronoTracker XB

- Instantaneous rate and amplitude after 5s.
- Instantaneous in beat analysis (*repère*) after 5s.
- Acquisition time limit: None, indefinite recording.

ChronoTracker XT

- All modes of XA and XB.
- Additional *Tourbillon* analysis (Rate only)
- Additional Free mode, quality factor analysis.

Frequency Determination

Frequency measuring range: 1.5-50Hz.
Frequency accuracy: $<3 \cdot 10^{-6}$ Hz.

Rate Accuracy

Rate accuracy: 0.1s/d.

Amplitude Determination

Amplitude measuring range: 10-360^(a).
Amplitude accuracy: 1°.

Time base technical Details

Time base: TCXO
Stability: ± 2.5 ppm vs temperature.
Aging: 1st year ± 1 ppm.

Service interval: Annual

Sensor module

Dimensions: 113x95x98mm³ (w x h x d).
Weight: 0.2kg.
Interface: 1 analogue jack (connector to Electronic module).

Sensor module on manual 6-Positions system

Dimensions: 160x100x120mm³ (w x h x d).
Weight: 0.4kg.
Interface: 1 analogue jack (connector to Electronic module).

Electronics module

Dimensions: 154x26x62mm³ (w x h x d).
Weight: 350g.
Interface: 1 micro-USB type B receptable (USB connection to Windows PC).

Operation conditions

Temperature: 0°-55°C.
Humidity: Above dew point for chosen temperature.

Windows PC requirements:

CPU: Minimum Intel Core i3 or equivalent
RAM: 4GB
OS: Windows 10, 64bit
Disk space: 1GB
Connectivity: USB-A 2.0, powered

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(a) The measurement principle relies on the passage of the balance rim's spokes. Different geometries have different lower amplitude detection limits (e.g. 80° for a four spoke balance wheel).