

Chronoscope X1 (G3)



Hightech for professionals

The Chronoscope X1 (G3) is synonymous with high-precision technology combined with modern design.

Superb materials and brilliant design combined with the latest technology – that is the Witschi philosophy. The new Chronoscope X1 (G3) offers even more. Namely taking pleasure in working professionally.

The best Chronoscope X1 (G3) ever is a fantastically finished device made of first-class materials. A capacitive touchscreen made of high-quality glass shows the measurement results on its brilliant, high-contrast display. The bright, full-colour touchscreen has a high-grade aluminium surround and stands on an elegant base.

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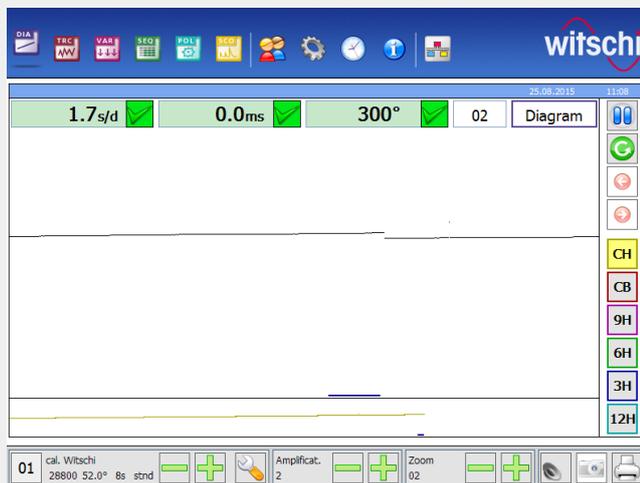
General Description

The X1 (G3) terminal is used as the control and display unit. Its large screen provides three content-ordered menu bars with big, self-explanatory buttons around the main display. The 6 display modes show measurements in a way adapted to any individual requirements. The measurement results can be printed on an external printer without interrupting the on-going measurement process. It is possible to create up to 99 different measurement programs. The automated microphone Micromat C can be operated directly from the terminal or with its own function keys.

Particular Features

- **Ergonomic, capacitive touchscreen**
The capacitive touchscreen reacts sensitively and is extremely operator-friendly. Navigation with swipe functions is now possible. High-quality glass and above-average colour contrast enable you to work ergonomically.
- **Screen capture (camera function)**
The current content of the screen is stored in PNG format into a plugged-in USB memory stick when the camera key is pressed.
- **Picture presentation**
Up to 99 pictures in JPG format can be stored for the start/stop screen saver. The slide show runs at a rate of a new picture every 10 seconds.

Diagram Display Mode



The rate deviation is continuously drawn on the screen. Measured values for rate deviation, amplitude and beat error are displayed numerically. In addition to the diagram recorded in the main window, the last eight diagram pages are shown as small format strip.

Trace Display Mode



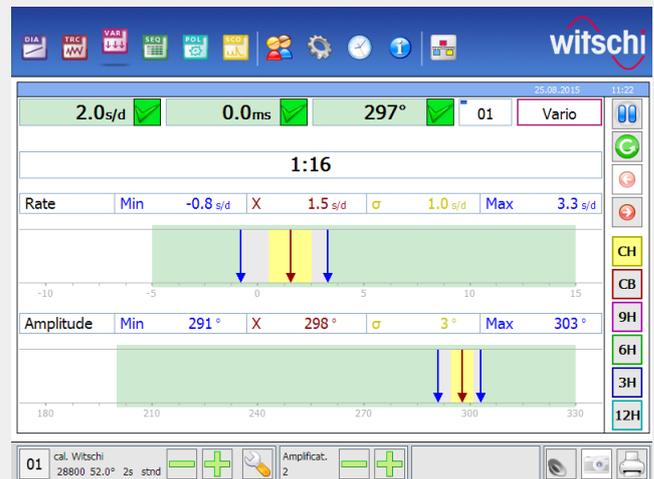
In this mode, the rate deviation and the amplitude are recorded in parallel in graphical format. The Trace mode provides long-term measurements up to 100 hours. This provides an extended time range (e.g. power reserve cycle) for measuring movements.

In addition to the graphics, the current test position of the watch as well as the running measured values for rate deviation; amplitude and beat error are also displayed.

Handy Feature

It is possible to switch between the Trace and Vario modes while the measurement process is running.

Vario Display Mode



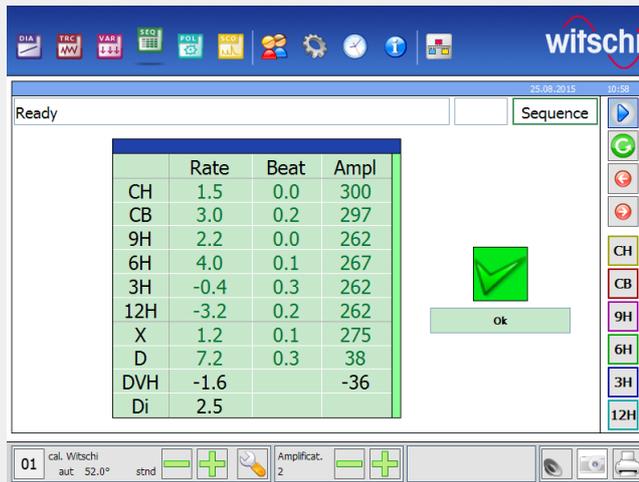
The Vario mode measures the rate and amplitude stability over a longer time range. Each numerical measurement is represented by an arrow on the linear scale.

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The following values are constantly updated as long as the measurement process is running:

- smallest measured value
- largest measured value
- average measured value and standard deviation
- elapsed measuring time.

Sequence Display Mode



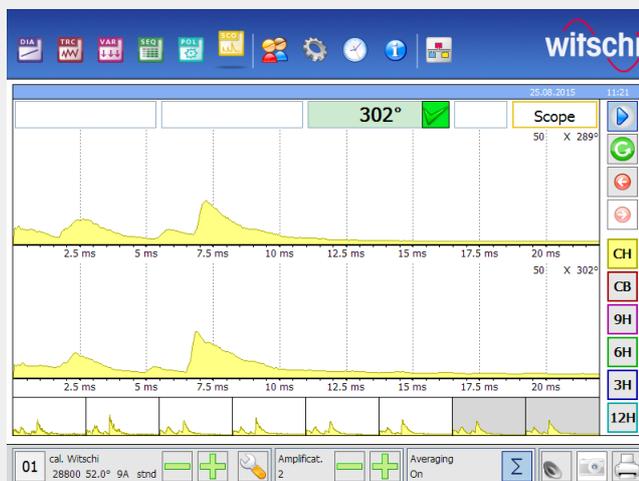
This neatly structured table clearly displays the measurement results in each position as well as the average and the largest difference between all positions and particular ones.

Programs can be created with up to 10 test position including stabilisation and measurement time. The sequence can also be initiated with the start key of the Micromat.

Handy Feature

The arrow keys can be used for toggling between the Trace, Vario, Sequence and Diagram Recording measurement modes during or after measurement.

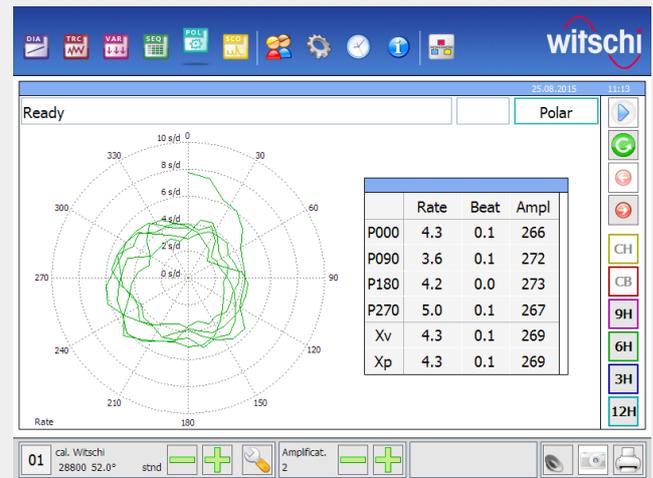
Scope Display Mode



The Scope function graphically displays the acoustic beat noise of the watch. A detailed analysis of the beat noise, i.e. of the state of the escapement, can be carried out. The display can be switched from one to two horizontal axes. Thereby, the averaging of the signals of 1, 10, 20 and 50 beat noises is possible.

The last eight beat noises are displayed in a small format and continuously updated when the measurement process is running.

Polar Display Mode



POLAR display mode indicates the rate stability in a polar diagram. One revolution (rotation time) of the Tourbillon watch corresponds to one revolution on the diagram. The average values of rate, beat error and amplitude for specific angles are calculated and displayed. The watchmaker can now determine the centre of gravity of the balance wheel. This world first makes the Chronoscope X1 the most comprehensive watch measuring and testing device of all time.

Further Features

- **Network Compatible**
Can be connected to a network with optional software. Thus, measurement programs for sequential test cycles are available directly from the WiCoTrace database. Those, in the database stored measurement results can always be visualized via Witschi WebViewer.
- **Customer and watch data**
Easy input via menu point of the customer and the watch data. If desired, the selected data appears on the printout and as header in the captured print screen as PNG file. Up to 99 customer data can be stored and retrieved in a list.

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Technical Data

Measurement Possibilities

Rate deviation, amplitude and beat error of mechanical watches. Diagram of the beat noises.

Beat Number

Automatic selection of all common beat numbers.
Manual selection of any beat number between 3'600 to 72'000 b/h and 360'000 b/h

Measuring Modes

- Rate: Only measurement of the rate accuracy
- Standard: Mode for watches with Swiss escapement
- Special 1: Mode for watches with coaxial escapement
- Special 2: Mode for watches with AP escapement
- Special 4: Mode with specific amplitude filter for the measurement of watches with the Swiss escapement
- Special 6: Mode for Chronograph "Foudroyante"

Gain Control

Automatic. Manual control facility for watches with stray or unusual beat noises

Adjustment Possibilities

- **Continuous Diagram Recording**
Selectable integration time: 2, 4, 6, 8, 10, 20, 30, 40, 60, 120, 180 and 240 s
Adjustable zoom: 1, 2, 4, 8, 16 x
- **Trace Display Mode**
Selectable measuring time: from 4 s to 99:59:58h
Adjustable zoom: 2, 4, 8 x
- **Vario Display Mode**
Measuring time: adjustable from 4 s to 99:59:58h
- **Sequence Display Mode**
Stabilisation time: adjustable from 2 s to 2 min
Measuring time: adjustable from 4 s to 10 min
Measuring cycle: adjustable from 1 to 10 test positions
- **Polar Display Mode**
Rotation time: 24, 30, 60, 120, 180 and 240 s
Rotation sense: clockwise / counterclockwise
Measuring time: adjustable from 4 s to 01:00:00 h
- **Scope Display Mode 1**
Selectable time deviations: 20, 200, 400 ms
- **Scope Display Mode 2**
Selectable time deviations: fixed at 20 ms
Average beat noises
- **Screensaver / Illuminating**
May be switched on or off
Switch on time: 1 to 99 min

Measuring Ability

Rate accuracy: numerical display in s/d
Resolution: 0.1 s/d, 0.01 s/d or 1 s/d
Measuring range: ± 999 s/d
Accuracy: ± 0.1 s/d

Amplitude: numerical display in degrees
Resolution: 1° or 0.1°. Measuring range 80° to 360°
Accuracy: $\pm 0.4^\circ$
Lift angle adjustable from 10° to 90°. Resolution 0.1°

Beat error: numerical display in milliseconds
Resolution: 0.1 ms. Measurement range 9.9 ms
Accuracy: ± 0.1 ms

Details Micromat C

Automatic microphone with built in measuring electronics.
By means of the inserted Joystick are manually up to 10 test positions selectable, also in automatic Sequence mode.

Acoustic check: audio out, Stereo Jack (3.5 mm)

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

Plastic housing: anthracite coloured

Front panel: aluminium, colourless anodised

Dimensions: 115 x 125 x 215 mm (w x h x d)

Weight: 1.7 kg

Mains adapter for 230 V~ or 120 V~, 1.2 A

Details X1 (G3) Terminal

Display terminal with 10.4" SVGA TFT colour Touchscreen, resolution 800x600. LED backlight. Low consumption.

Languages: English, German, French. Spanish, Italian

Interface:

- 3 x USB
- RS-232
- Ethernet for network

Terminal in aluminium, silver coloured

Stand in aluminium, anthracite coloured

Dimensions: 266 x 213 x 43 mm (w x h x d).

Weight: 2.1 kg

Universal mains adapter for 100 to 240 V~, 1.5 A

Accessories

Thermo printer with automatic paper cutter, 100 V~ - 240 V~	JB01-740RS232
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Thermo paper for 740RS232	JB01-MM60-740RS
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