Operating instructions

Precision measuring device
ChronoMaster

Read the instructions prior to performing any task!
About this manual

This manual enables the safe and efficient handling of the Chrono-Master precision measuring device (hereafter referred to as the “device” or “ChronoMaster”). The manual is part of the device and must be kept near the device where it can be accessed by personnel at all times.

Personnel must have carefully read through and understood this manual before starting work. The basic prerequisite for safe work is compliance with all the safety, warning and procedural instructions specified in this manual.

In addition, the local health and safety regulations and general safety rules for the area in which the ChronoMaster is used apply.

Illustrations in this manual are for a basic understanding and may deviate from the actual design.

Copyright

The content of this manual is protected by copyright. It may be used within the context of using the ChronoMaster. No other use is permitted without the written approval of Witschi Electronic AG.

Customer Service

Your point of sale can provide you with technical information.

You can find your nearest point of sale on our website at http://www.witschi.com/de/firma/vertretungen

We are also always interested in hearing from you about your experiences in using the device and any information that could help us improve our products.

Customer Service information

<table>
<thead>
<tr>
<th>Address</th>
<th>Witschi Electronic Ltd. Bahnhofstrasse 26 3294 Büren a.A. Switzerland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone</td>
<td>+41 32 352 05 00</td>
</tr>
<tr>
<td>Fax</td>
<td>+41 32 351 32 92</td>
</tr>
<tr>
<td>e-mail</td>
<td><a href="mailto:service@witschi.com">service@witschi.com</a></td>
</tr>
<tr>
<td>Internet</td>
<td><a href="http://www.witschi.com">www.witschi.com</a></td>
</tr>
</tbody>
</table>
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1 Product description

1.1 Overview

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Page Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pivoting microphone for measuring the watch noise</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Signal sensor for recording and transmitting the watch noise</td>
<td>Chapter 4.2 “Positioning the watch and starting a measurement automatically” on page 20</td>
</tr>
<tr>
<td>3</td>
<td>Clamping jaw made of neoprene for clamping the watch or the clockwork</td>
<td>Chapter 4.2 “Positioning the watch and starting a measurement automatically” on page 20</td>
</tr>
<tr>
<td>4</td>
<td>USB cable for connecting the ChronoMaster to the PC or tablet computer</td>
<td>Chapter 3.4 “Connecting the ChronoMaster” on page 19</td>
</tr>
<tr>
<td>5</td>
<td>Switching screw for setting the ChronoMaster for right-handers or left-handers</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Control keys for frequently used functions: selecting the previous program or the next program, restart and start/stop</td>
<td>Chapter 4.3 “Controlling the measurement using control keys” on page 24</td>
</tr>
<tr>
<td>7</td>
<td>LED for visual indication of the watch signal</td>
<td>Chapter 4.2 “Positioning the watch and starting a measurement automatically” on page 20</td>
</tr>
</tbody>
</table>

Fig. 1: ChronoMaster
Measuring options

The ChronoMaster is a precision measuring device for measuring the rate deviation, the amplitude and the beat error of mechanical watches. The compact microphone has integrated measurement electronics.

All common beat numbers can be determined automatically. The manual adjustment for any beat numbers in a range between 3'600 and 72'000 A/H is possible as an alternative.

Watches can be tested in the 6 main testing positions, in 4 vertical intermediate positions and in 2 special positions. The position is identified automatically.

Using different measuring modes, watches can be tested with the following escapements:
- Swiss anchor escapement
- Cylinder escapement
- Duplex escapement
- Chronometer escapement
- Co-Axial escapement
- AP escapement

Information on the measuring options

Further information on the measuring options is to be found under “Measuring modes” on page 8 and in the corresponding software manual.

Versions

Two ChronoMaster software versions are available:
- ChronoMaster
- ChronoMaster PRO

The “Witschi Token Installer” software can be used to install a token on the device to extend the device to the PRO version.

Ordering the token

The token is created exactly for the device to be extended. The token contains the item number and the serial number of the device.

For further information, see the software manual.

Using what is called a demo token, you can test the PRO version for a certain time. The demo token has a timestamp and can only be installed once on the device. If new functions are provided by the manufacturer, a new demo token can be created, which can be installed again once.
A USB cable is used to connect the ChronoMaster to the PC or tablet computer. The measurements are controlled using the corresponding “Chronoscope Service” display software.

In the “Chronoscope Service” display software, you can choose between the “Diagram” and “Vario” display modes for both versions. In addition, the “Trace”, “Sequence”, “Polar”, “Scope 1” and “Scope 2” display modes are included for the ChronoMaster PRO version.

### 1.2 Scope of delivery

The scope of delivery consists of the ChronoMaster and a USB flash drive with the following contents:

- “Chronoscope Service” display software
- Software manual in German, French, English, Spanish and Italian as PDF file

The scope of delivery also includes:

- This manual
- Calibration certificate
- Warranty information
- Dust cover

### 1.3 Software

The measurements are controlled using the “Chronoscope Service” display software. It is provided on the supplied USB flash drive.
1.4 Modes

Measuring modes

The ChronoMaster provides various measuring modes that can be set in accordance with the escapement type of the watch to be tested.

<table>
<thead>
<tr>
<th>Measuring mode</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>Standard measuring mode for watches with Swiss anchor escapement.</td>
</tr>
<tr>
<td>Rate</td>
<td>Measuring mode for the rate measurement only of watches with cylinder, duplex or chronometer escapement, in addition to watches with unusual beat noise.</td>
</tr>
<tr>
<td>Special 1</td>
<td>Measuring mode for watches with Co-Axial escapement.</td>
</tr>
<tr>
<td>Special 2</td>
<td>Measuring mode for watches with AP escapement.</td>
</tr>
<tr>
<td>Special 3, 5, 7, 8 and 9</td>
<td>not active (reserved)</td>
</tr>
</tbody>
</table>

Determining the escapement type

You can find out the escapement type of the watch that is to be tested by consulting the watch manufacturer.

Information in the software manual

Further information on the measuring modes is to be found in the corresponding software manual.
Display modes

The “Chronoscope Service” display software provides two different display modes for the ChronoMaster and ChronoMaster PRO versions:

- Continuous diagram recording
- Vario

The following display modes are also available for the ChronoMaster PRO version:

- Trace
- Sequence
- Polar
- Scope 1, Scope 2

Information in the software manual

Further information on the display modes is to be found in the corresponding software manual.

1.5 Technical data

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Device</th>
<th>Type no.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ChronoMaster</td>
<td>13.3210</td>
</tr>
</tbody>
</table>

Time base

- TCXO quartz, high-frequency quartz time base

<table>
<thead>
<tr>
<th>Function</th>
<th>Measuring range</th>
<th>Resolution</th>
<th>Precision</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate deviation</td>
<td>± 999 s/d</td>
<td>1.0 s/d, 0.1 s/d or 0.01 s/d can be selected</td>
<td>± 0.1 s/d</td>
<td>Numerical display in s/d</td>
</tr>
<tr>
<td>Amplitude</td>
<td>70° to 360°</td>
<td>1° or 0.1° can be selected</td>
<td>± 0.4°</td>
<td>Numerical display in degrees</td>
</tr>
<tr>
<td>Beat error</td>
<td>9.9 ms</td>
<td>0.1 ms</td>
<td>± 0.1 ms</td>
<td>Numerical display in milliseconds</td>
</tr>
</tbody>
</table>
Communication interfaces

<table>
<thead>
<tr>
<th>Designation</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| USB         | Connect device for the following functions to PC or tablet computer:  
|             | - Power supply  
|             | - Data transmission  
|             | - Controlling measurements |

Dimensions and weight

<table>
<thead>
<tr>
<th>Data</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>130</td>
<td>mm</td>
</tr>
<tr>
<td>Height</td>
<td>110</td>
<td>mm</td>
</tr>
<tr>
<td>Depth</td>
<td>110</td>
<td>mm</td>
</tr>
<tr>
<td>Weight</td>
<td>180</td>
<td>g</td>
</tr>
</tbody>
</table>

Recommended requirements for the PC or tablet computer

<table>
<thead>
<tr>
<th>Data</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Quadcore processor i5 or i7</td>
</tr>
<tr>
<td>Operating system</td>
<td>Windows 7, Windows 8.1 or Windows 10</td>
</tr>
<tr>
<td>Working memory (RAM)</td>
<td>at least 4 GB</td>
</tr>
<tr>
<td>USB interface</td>
<td>2.0, type A</td>
</tr>
<tr>
<td>Display</td>
<td>Minimum resolution: 1366 x 768 pixels</td>
</tr>
</tbody>
</table>

Operating conditions

<table>
<thead>
<tr>
<th>Data</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature range</td>
<td>10 – 50</td>
<td>°C</td>
</tr>
<tr>
<td>Relative humidity, maximum</td>
<td>10 – 80</td>
<td>%, non-condensing</td>
</tr>
</tbody>
</table>
2 Safety

This section provides an overview of all the important safety aspects that ensure personal protection and safe and trouble-free operation of the ChronoMaster. There are additional, task-specific warnings in the sections on the individual life cycle phases.

2.1 Symbols in this manual

Safety indications and warnings

Safety information and warnings are identified by symbols in this manual. The safety information and warnings are introduced by signal words that indicate the extent of the hazard.

NOTICE!
This combination of symbol and signal word indicates a potentially hazardous situation that can entail material damage if not avoided.

ENVIRONMENT!
This combination of symbol and signal word indicates possible hazards to the environment.

Tips and recommendations

This symbol draws your attention to useful tips and recommendations and to information that helps ensure efficient and trouble-free operation.

Additional labels

The following labels are used in this manual to draw attention to instructions, results, lists, references and other elements:

<table>
<thead>
<tr>
<th>Label</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1., 2., 3. ...</td>
<td>Step-by-step instructions</td>
</tr>
<tr>
<td>⇐</td>
<td>Results of actions</td>
</tr>
<tr>
<td>⇨</td>
<td>References to sections of this manual and other applicable documents</td>
</tr>
<tr>
<td>■</td>
<td>Lists without a fixed order</td>
</tr>
</tbody>
</table>
2.2 Risk of material damage

Damage to the USB cable or to the electronics

NOTICE!

Damage to the USB cable or to the electronics

- Damage to the USB cable or to the electronics of the ChronoMaster could damage the ChronoMaster itself.
- Only allow Customer Service to perform work on the ChronoMaster’s electronics (☞ “Customer Service” on page 3).
- In the event of damage to the USB cable or the plug, pull the USB plug and arrange for a repair by Customer Service (☞ “Customer Service” on page 3).
- Keep moisture away from live parts. That can result in a short-circuit.
- Do not kink or jam USB cables, damage them on sharp edges or bring them into contact with heat sources.
- Check the USB cable and plug for damage every time before using the device.

Material damage due to opening the housing

NOTICE!

Material damage due to opening the housing!

- Opening the housing poses a risk of damaging components inside the ChronoMaster or of damaging the housing itself.
- Never open the housing yourself.
- In the event of malfunctions or problems that cannot be solved using the operation manual, contact Customer Service (☞ “Customer Service” on page 3).

2.3 Intended use

The ChronoMaster precision measuring device is intended solely for measuring mechanical watches to determine the rate deviation, amplitude and beat errors (repère).

With the aid of the clamping jaws, the ChronoMaster is capable of testing mechanical wrist watches of all sizes.

Its intended use includes compliance with all the information in this manual.
Misuse

Any use beyond or other than the intended use shall be considered misuse.

NOTICE!
Material damage due to misuse!
Misuse of the ChronoMaster can result in material damage.
- Never immerse the device in water or other liquids. Always keep the device away from rain and wet conditions.
- Never clamp any objects other than watches on the device.

2.4 Owner’s responsibilities

Owner’s obligations

The device is intended for commercial use. The owner of the device is subject to the statutory obligations of occupational health and safety.

In addition to the safety indications and warnings in this manual, you must comply with the safety, occupational health and safety and environmental protection requirements that apply to the device’s area of application.

The following applies in particular:

- Throughout the entire period that the device is in operation, the owner shall check that the operating instructions compiled by the owner comply with the current versions of regulations and must adapt the instructions as necessary.
- The owner shall ensure that all persons who handle the device have read and understood this manual. In addition, the owner shall train personnel at regular intervals.
- The owner shall ensure that the service intervals described in this manual are complied with.
- The owner shall ensure that the service intervals for the components are complied with.

2.5 Personnel qualifications

This manual stipulates the following qualifications for the operator:

Customer Service
Certain work may only be performed by Customer Service. Customer Service personnel have been trained extensively for all work performed on measuring devices.

Work that is the specified task of Customer Service personnel may not be performed by unauthorised personnel. Contact Customer Service when this work is due.
Operator
The operator of the device has all the necessary knowledge and training to handle watches. In addition, the operator has been instructed by the owner about the tasks entrusted to him or her and about possible hazards in the event of improper behaviour. The operator may only perform tasks that go beyond normal operation where this is provided for in the manual and the owner has specifically entrusted the operator with such tasks.
3 Commissioning the ChronoMaster

3.1 Unpacking the ChronoMaster

Delivery

The ChronoMaster is delivered by a local logistics company. All the components included in the scope of delivery are delivered together in a single package.

Transport inspection

Upon receipt of the delivery, check it immediately to ensure that it is complete and undamaged.

If there is any visible external transport damage, proceed as follows:

1. Do not accept the delivery.
2. Make a note of the scope of damage on the carrier’s delivery note.
3. Lodge a complaint.

Claims for damages can only be made within the applicable claim periods.

Lodge a complaint for any damage as soon as it is identified. Claims for damages can only be made within the applicable claim periods.

Unpacking the ChronoMaster

1. Take the ChronoMaster out of its packaging.
2. Store the original packaging for any later transport or storage (% Chapter 5 “Transportation and storage of the Chrono-Master” on page 26).
3.2 Requirements for the location

Distortion of measurement results

**NOTICE!**

Distortion of measurement results due to unsuitable location!

There is a risk of the distortion of measurement results if the following requirements for the location are not complied with.

- Do not position the device and the test object in the vicinity of heaters or open windows.
- Do not expose the device and the test object to direct sunlight.
- Operate the device on a level, horizontal surface.
- Set up the device in a low-noise environment.
- Do no set up the device in the direct proximity of electromagnetic radiation (e.g. as caused by mobile telephones).

Short-circuit or damage to the electronics

**NOTICE!**

Risk of material damage due to unsuitable location!

There is a risk of a short-circuit or of damage to the device electronics if the following requirements for the location are not complied with.

- Install the USB cable so that it cannot be damaged by external influences.
- Never operate the device in an environment with a high level of humidity.
3.3 Installing the software

The “Chronoscope Service” display software is to be found on the USB flash drive provided ( Chapter 1.2 “Scope of delivery” on page 7).

Notes on installation
- The “Chronoscope Service” display software must be installed on the PC or tablet computer before the ChronoMaster is connected.
- To install the “Chronoscope Service” display software, administrator rights are required for the PC or tablet computer.
- Further information on the software is to be found in the corresponding software manual.

Personnel:  Operator

1. Connect the USB flash drive to the USB port of the PC or tablet computer.

2. Open the directory of the USB flash drive on the PC or tablet computer.

3. Run the cs_setup.exe installation file.

4. Select the installation directory for the software on the PC or tablet computer (Fig. 3).

Fig. 2: Connecting the USB flash drive

Fig. 3: Selecting the storage location
Commissioning the ChronoMaster

Installing the software

5. Start the installation (Fig. 4).

Software updates

Information on possible software updates is provided on the manufacturer’s website.
3.4 Connecting the ChronoMaster

Personnel: Operator

Requirement:
- The “Chronoscope Service” display software is installed on the PC or tablet computer.

1. Start the “Chronoscope Service” display software on the PC or tablet computer.

2. Plug the USB plug of the USB cable (Fig. 6/1) into the USB port of the PC or tablet computer (Fig. 6/2).

- The ChronoMaster is connected to the PC or tablet computer.
- The ChronoMaster is identified by the display software and executed there (Fig. 7).

Fig. 5: Starting “Chronoscope Service”

Fig. 6: Connecting the ChronoMaster

Fig. 7: ChronoMaster identified by the display software
4 Performing a measurement

4.1 Configuring measurement settings

Overview
The measurement settings are configured using the “Chronoscope Service” display software.

The measurement settings are:
- Beat number
- Lift angle
- Measuring mode
- Integration time
- Display mode

Information in the software manual
Information on the measurement settings is to be found in the corresponding software manual.

Programs
Various programs are available with pre-defined measurement settings.

It is also possible for you to create your own programs with frequently used measurement settings.

Information in the software manual
Information on selecting and setting the programs is to be found in the corresponding software manual.

4.2 Positioning the watch and starting a measurement automatically

Distortion of measurement results

NOTICE!
Distortion of measurement results!
There is a risk of the distortion of measurement results if the watch or the clockwork is not clamped correctly.

- Make sure that the watch or the clockwork is clamped correctly.
Performing a measurement

Positioning the watch and starting a measurement automatically

Clamp the complete watch or clockwork with cup

Personnel: Operator

Prerequisites:
- The ChronoMaster is connected to the PC or tablet computer.
- The "Chronoscope Service" display software has been started.

1. Pull the clamping jaw (Fig. 8/1) outwards and hold it.

2. Place the watch or cup on the clamping area so that the crown of the watch or cup is positioned against the signal sensor (Fig. 9/1, Fig. 10/1).

Fig. 8: Tightening the clamping jaws

Fig. 9: Clamping the complete watch

Fig. 10: Clamping the clockwork with cup
Performing a measurement

3. Carefully guide the clamping jaw (Fig. 11/1) to the watch or the clockwork.
   - The complete watch or the clockwork with cup is clamped.
   - The LED on the ChronoMaster (Fig. 11/2) flashes at the same frequency as the watch beats.
   - The measuring process starts automatically (Fig. 12).

   Alternatively, the measurement can be started via the “Restart” button in the display software.

Fig. 11: Releasing the clamping jaw

Fig. 12: The measuring process starts automatically

Information in the software manual

Information on the measuring process and on controlling the measurement is to be found in the corresponding software manual.
Performing a measurement
Positioning the watch and starting a measurement automatically

Clamping the clockwork without housing

Personnel: ■ Operator

Prerequisites:
■ The ChronoMaster is connected to the PC or tablet computer.
■ The “Chronoscope Service” display software has been started.

1. Pull the clamping jaw (Fig. 13/1) outwards and hold it.

2. Place the clockwork on the clamping area so that the plate is positioned above the signal sensor (Fig. 14/1).

3. Carefully guide the clamping jaw (Fig. 15/1) to the clockwork.
   ■ The clockwork without housing is clamped.
   ■ The LED on the ChronoMaster (Fig. 15/2) flashes at the same frequency as the watch beats.
   ■ The measuring process starts automatically (Fig. 16).
   Alternatively, the measurement can be started via the “Restart” button in the display software.
4.3 Controlling the measurement using control keys

To operate the software, the ChronoMaster has 4 control keys (Fig. 17).

The following functions are assigned to the control keys:

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Program selection, select next lower program.</td>
</tr>
<tr>
<td>2</td>
<td>Program selection, select next higher program.</td>
</tr>
<tr>
<td>3</td>
<td>Restart current measurement.</td>
</tr>
<tr>
<td>4</td>
<td>Pause/continue current measurement.</td>
</tr>
</tbody>
</table>

**Information in the software manual**

Information on the measuring process and on controlling the measurement is to be found in the corresponding software manual.

![Fig. 16: The measuring process starts automatically](image)

![Fig. 17: Control keys](image)
4.4 Monitoring and configuring the measurement

The measurements are monitored and configured using the “Chronoscope Service” display software.

This includes:

- Monitoring the measurement and the measurement results
- Setting the signal strength
- Pausing and resuming the measurement
- Printing the measurement results
- Creating screenshots
- Restarting a measurement

Information in the software manual

Information on monitoring and configuring the measurements is to be found in the corresponding software manual.
5 Transportation and storage of the ChronoMaster

5.1 Shutting down the ChronoMaster

Requirement:
- The measurement has been finished.

1. Pull the clamping jaw outwards and hold it.
2. Remove the watch or clockwork from the microphone.
3. Carefully release the clamping jaw.
4. Disconnect the USB cable (Fig. 18/1) at the USB plug from the USB port of the PC or tablet computer (Fig. 18/2).

Fig. 18: Shutting down the ChronoMaster

5.2 Transportation and storage of the ChronoMaster

Improper transport

NOTICE!
Risk of material damage due to improper transport!
In the event of improper transport, the device may fall or topple. This can cause significant material damage.
- Transport the device in its original packaging only.
- Always transport packages upright and never throw them.
- Only transport the device when it is shut down.
- Transport the device with two hands only.
NOTICE!
Risk of material damage due to improper storage!

Improper storage can cause significant material damage to the device.

- Store the device in its original packaging only.
- Do not store the device outdoors.
- Store the device in a dry and dust-free environment.
- Do not expose the device to any aggressive media.
- Protect the device from sunlight.
- Protect the device from mechanical vibrations.
- Store the device at a temperature between $-20\,^\circ \text{C}$ and $+70\,^\circ \text{C}$.
- Store the device at a relative humidity of between $10\%$ and $80\%$ (non-condensing).

Requirement:

- The ChronoMaster is shut down (§ Chapter 5.1 “Shutting down the ChronoMaster” on page 26).

1. Pack the device in its original packaging.
2. Transport and/or store the device.
6 Maintenance and cleaning of the ChronoMaster

6.1 Safety during maintenance

Short-circuit or damage to the electronics

- **NOTICE!**
  Risk of material damage during maintenance!
  A short-circuit or damage to the electronics of the device is possible during maintenance if the following instructions are not observed:
  - Only allow Customer Service to perform work on the device’s electronics.
  - Before performing any work for maintenance or cleaning, disconnect the USB cable from the PC or tablet computer.
  - Keep moisture away from live parts.

6.2 Maintenance schedule

<table>
<thead>
<tr>
<th>Interval</th>
<th>Maintenance work</th>
<th>Personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>Clean the ChronoMaster with a microfibre cloth.</td>
<td>Operator</td>
</tr>
<tr>
<td>Calibration as per the calibration instructions on the device</td>
<td>Have the ChronoMaster recalibrated. Contact Customer Service for this (&quot;Customer Service&quot; on page 3).</td>
<td>Customer Service</td>
</tr>
</tbody>
</table>
7 Troubleshooting

7.1 Error messages in the display software

Information in the software manual
Information on error messages in the display software is to be found in the corresponding software manual.

7.2 Damage to the ChronoMaster

Improper rectification of damage

NOTICE!
Damage due to improper rectification of material damage!
The improper rectification of material damage to the ChronoMaster can result in additional material damage.
- Stop operating the device in the event of material damage.
- Only allow Customer Service to repair the device.

If there is any visible external damage, proceed as follows:

1. Shut down the ChronoMaster (  Chapter 5.1 “Shutting down the ChronoMaster” on page 26).

7.3 Troubleshooting

<table>
<thead>
<tr>
<th>Fault description</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implausible measurement result</td>
<td>The watch or clockwork is not positioned correctly.</td>
<td>Re-position the watch or clockwork ( Chapter 4.2 “Positioning the watch and starting a measurement automatically” on page 20).</td>
</tr>
<tr>
<td>Diagram with interference</td>
<td>Signal set too strongly/weakly.</td>
<td>Regulate the signal strength. Information on how to do this can be found in the corresponding software manual.</td>
</tr>
</tbody>
</table>
8 ChronoMaster disposal

If no return or disposal agreement has been made, take the device to a recycling facility.

**ENVIRONMENT!**

**Incorrect disposal poses an environmental hazard!**

The device contains electrical and electronic components. Incorrect disposal may result in hazards to the environment.

- Do not dispose of the device along with the household waste. Hand over the device to a municipal collection point or have it disposed of by a specialist.
- Only have authorised specialists dispose of the device.
- If in doubt about environmentally sound disposal, contact your local authority or a specialist waste disposal company.
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Appendix
A Declaration of conformity
EG-Konformitätserklärung

Déclaration de conformité CE

Declaration of conformity

Wir

Witschi Electronic AG

Bahnhofstrasse 26

CH-3294 Büren a.A.

Schweiz / Suisse / Switzerland

erklären in alleiniger Verantwortung, dass das Produkt
déclarent sous notre seule responsabilité que le produit
declare under our sole responsibility that the product

Bezeichnung

nom / name:

ChronoMaster

Typ-Nr.:

13.3210

Fabrikations-Nr.

no. de série / serial Nr.:

1 – 10’000

Funktion

fonction / function

Prüfgerät für mechanische Uhren mit int. Messelektronik

appareil de test pour montres mécaniques avec électronique de mesure intégrée /

test instrument for mechanical watches with integrated measuring electronic

Dok-Verwaltung

doc. management

Witschi Electronic AG, Roman Siegfried, Bahnhofstr. 26, CH-3294 Büren a.A.

Zertifiziertes QMS

Quality mgt, systems

SQS, ISO 9001:2015, Scope 19 / Reg. Nr. 12228

auf das sich diese Erklärung bezieht, mit den Bestimmungen der folgenden EG-Richtlinie(n)

und Norm(en) oder normativen Dokument(en) übereinstimmt:

auquel se réfère cette déclaration, est conforme aux dispositions de la (des) directive(s) CE et à la (aux)
norme(s) ou autre(s) document(s) normatif(s) suivants:

to which this declaration applies, is in conformity with the following EC-Directive(s) and standard(s) or other

normative document(s):

Richtlinien / Lignes directrices / Guidelines

2014/30/EG ☑ Elektromagnetische Verträglichkeit / compatibilité électromagnétique / electromagnetic compatibility

2014/35/EU ☐ Niederspannungsrichtlinie / Directive CE pour basse tension / EC low voltage directive

2006/42/EG ☐ Maschinenrichtlinie / Directive CE pour machines / EX machinery directive

2011/65/EU ☑ RoHS-Richtlinien / Directives RoHS / RoHS Directive

Fachgrundnormen / Normes génériques / Generic Standards

EN 61000-6-3: 2011 ☑ Elektromagnetische Verträglichkeit (EMV), Störaussendung für Wohn- Geschäfts und Ge-

werbereiche sowie Kleinbetriebe / Compatibilité électromagnétique (CEM), Norme sur l’émis-

sion pour les environnements résidentiels, commerciaux et de l’industrie légère / Electromagnetic compatibility (EMC), Emission standard for residential, commercial and light-

industrial environments

EN 61000-6-4: 2011 ☐ Elektromagnetische Verträglichkeit (EMV), Störaussendung für Industriebereiche / Compat-

ibilité électromagnétique (CEM), Norme sur l’émission pour les environnements industriels / Electromagnetic compatibility (EMC), Emission standard for industrial environments

EN 61000-6-1: 2016 ☑ Elektromagnetische Verträglichkeit (EMV), Störfestigkeit für Wohn- Geschäfts und Gewer-

bereiche sowie Kleinbetriebe/ Compatibilité électromagnétique (CEM), Immunité pour les

environnements résidentiels, commerciaux et de l’industrie légère / Electromagnetic compa-

tibility (EMC), Immunity for residential, commercial and light-industrial environments

EN 61000-6-2:2016 ☐ Elektromagnetische Verträglichkeit (EMV), Störfestigkeit für Industriebereiche / Compatibilité électromagnétique (CEM), Immunité pour les environnements industriels / Electromagnetic compatibility (EMC), Immunity for industrial environments

EN ISO 12100-2010 ☐ Sicherheit von Maschinen / Sécurité des Machines / Safety of machinery

Büren a.A., den 27.2.2021

Daniel Hug

Leiter Entwicklung

Roman Siegfried

Leiter Produktions-Management