Release 3.0
947-MA-0009-E

# Operators manual

# Clinotronic PLUS

## The intelligent universal inclinometer


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Swiss Quality

## Content

# 1. General

**1.1 Introduction**

The Clinotronic PLUS is our standard version for the range of 45 °.

Features:

- Rugged and stable housing, 100 x 75 x 30 mm
- Standard batteries, no loss of calibration data when changing batteries
- True RS485 interface / connections to PC
- Initialisation of measurement with wylerTRIGGER
- Possible range of measurement: ±45 ° / 60 °
- Display of the measured values in all commonly used units, simple selection by using the instruments keys
- Setting a relative base lenght and display of the values to this base
- Automatic zero setting by using the respective keys
- Absolute and relative measurements simple to set by using the keys
- Calibration of the unit is easily possible using the built-in software (see Appendix C, CLINOMASTER)
- Inclination measurement in any quadrant is possible using one of the four precisely machined surfaces, which form the square frame of the instrument

**1.2 Description**

The Clinotronic PLUS is an electronic inclinometer with unsurpassed versatility. Contained in the rugged and compact housing are:

- Precision inclination sensor
- Custom developed microprocessor
- Large LCD display unit
- Operating elements
- Interface socket

The Clinotronic PLUS provides a measuring capacity of ±45 degrees (upon requirement delivery is also possible with a measuring range of ±60 degrees). Four precisely machined surfaces assure accuracy and repeatability of measurements. Selectable by push-button, any units suitable for inclination may be applied to the display. Even slope indication based on a relative base of selectable length is possible. Simple push-button operation automatically sets absolute as well as relative zero. The supplied interface ports (RS485) can be connect to PC.

All indicated values are, by integration of calibration values stored, computed prior to display. If required, an integrated calibration mode may be actuated in order to replace the stored calibration data. For this purpose, the Clinotronic PLUS must be, with the aid of suitable equipment, accurately inclined, using 5 degegree steps over the range of ±50 degrees.

The measuring principle is based on a friction free suspended disc. Two electrodes, together with the disc that is between them, represent a differential capacitor. Changes of capacitance resulting because of disc displacement when the unit is inclined are detected by counting the frequency and after suitable evaluation are displayed in the selected units.

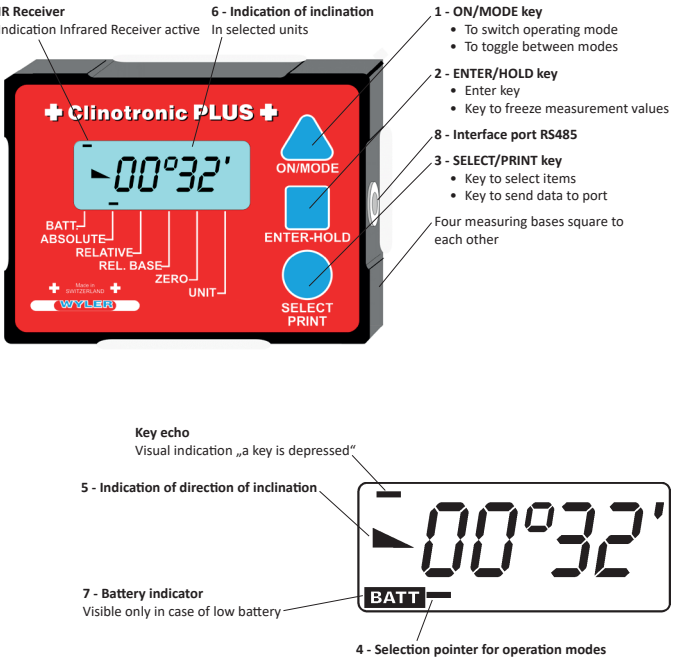
Completely friction free pendulum supports in conjunction with damping by air displacement provide excellent accuracy in respect of repetition and hysteresis as well as rapid availability of values.

**1.3 Operating instructions**

Reading this manual carefully before using the Clinotronic PLUS for the first time will familiarise you with the multiple functions and possibilities of the Clinotronic PLUS. This will prevent faulty manipulations or, in the worst case, unintentional loss of calibration data.

## 2. Operating elements

### 2.1 General information




**Attention!**
Whilst trying out the different functions, be careful never to operate the two bottom keys ■ „ENTER/HOLD" and ● „SELECT/PRINT" simultaneously. This would result in the loss of calibration data. This combination is protected by an additional safety feature: The two keys must be operated for a period of 5 seconds before this command is accepted. See 2.10 for information concerning data recovering.

## 2. Operating elements

### 2.2 Functions in detail

**1 - ▲ ON/MODE key**

Use this key to put the Clinotronic PLUS into operation. The key ▲ ON/MODE must remain pressed until all display segments are visible.
The Clinotronic PLUS thereafter automatically changes to the previously set operational mode.
The display will show „0°00' until the first valid measurement value is available.

When pressing the ▲ ON/MODE key **for more than 3 seconds,** the display starts flashing and the **automatic shut off is disabled**. In the standard mode, the instrument shuts off after about 5 minutes. To **switch off** the instrument, press the ▲ ON/MODE key **for more than 3 seconds** until the display disappears.

**Exception:** In case the instrument is powered by an external power supply, the instrument is never shutting off automatically.

**Attention!**
At this stage, a display ◣ 50.00° in flashing mode indicates loss of calibration data.

Possible cause:
This may be due to accidental call of the calibration mode (a protection through two key operation and 5 seconds command delay should prevent such accidents) or the calibration was started but not finished correctly.
Chapter 5.1 contains instructions for recalibration. Possible data recovering according to chapter 2.9.

**1 - ▲ ON/MODE key**

For selection of different operation modes: Move the selection pointer - 4 - by operating this key.

**2 - ■ ENTER/HOLD key**

Puts a selected operation mode into effect or enters a choice made by using the ● SELECT key.

**2 - ■ ENTER/HOLD key**

Use this key to „freeze" a measurement value. The HOLD function is particularly useful if measurements have to be taken when the display is not visible. The Clinotronic PLUS will pause until two identical values are detected in succession (self sensing for motion). The valid indication will be displayed with flashing figures. Delete the indication by re-selecting ● HOLD key or by operating the ▲ SELECT/PRINT key or the ■ ON/MODE key.

**3 - ● SELECT/PRINT key**

Use this key to select an option within an opened (selected) operation mode. E.g. Selection of desired measurement unit within the operation mode „UNIT"; in case of digital input, selection of the value (0-9) of a digital position.

**3 - ● SELECT/PRINT key**

- Cancel the hold function
- Sending a value to the port RS485

**4 - Selection pointer for operation modes**

Serves as pointer for the selection of the different operation modes. Indicates the operation mode currently in use: Absolute, relative or measurements with respect to a relative base length, setting of absolute zero point.
A flashing pointer indicates that an action by the operator is required. For example, whilst setting absolute zero point, the flashing pointer indicates that the input of the second measurement value is required.

**5 - Indicatorfor direction of indication**

A comprehensive symbol indicates the direction of the inclination:
◣ Rising to the right (positive inclination)
◥ Falling to the right (negative inclination)

## 2. Operating elements

**6 - Measuring units**

Indication of measuring unit currently employed. A total of 15 possibilities (measuring units and formats) are available (see chapter 2.6).

**7 - Battery indicator**

Low battery voltage (drained battery) is indicated by the sign „BATT“, appearing in inverted mode at the lower left corner of the display.

**8 - Interface port RS485**

True RS485 interface / connections to a USB port of a PC (wylerCONNECT required).

### 2.3 Battery test / change of battery

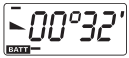
If the sign „BATT“ appears in the lower left corner of the display, it will be displayed constantly in all measuring modes, indicating a drained battery, which must be replaced.

The display „BATT“ allows for timely replacement of the battery.
Specification:

- 1 x Size AA 1.5V alkaline / 25 hours

Battery installation:

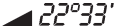

Battery indicator:



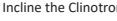

### 2.4 Function check

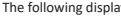
Press the key ▲ ON/MODE until all the display's segments are visible. Immediately after releasing the key, the display shows 88°88' until the first measuring value is seen in the last selected measuring mode.

Incline the Clinotronic PLUS to the left. The following displays are correct:


Incline the Clinotronic PLUS to the right. The following displays are correct:




The Clinotronic PLUS persistently flashing 50.00° indicates that no calibration data is available. The data was probably lost or destroyed by accidentally calling the calibration utility. The Clinotronic PLUS must be recalibrated. See chapter 6.1 for calibration procedure. For possible salvation see chapter 2.9.

### 2.5 Set absolute zero

The absolute zero represents a base for absolute inclination measurements (deviation from horizontal or vertical). In order to achieve best results, take care that the Clinotronic PLUS and the measuring object are at identical temperatures and put the Clinotronic PLUS intro operation a few minutes prior to zero setting.

## 2. Operating elements

The absolute zero is automatically calculated and set from the two values entered whilst conducting a reversal measurement (reversal measurement = two measurements made in the same spot but in exactly opposing directions). For this operation, place the Clinotronic PLUS upon a suitable surface (rigid location: as flat as possible and as near to horizontal as possible). To ensure that the Clinotronic PLUS is positioned exactly in the same place, mark the position and, in particular, the orientation of the Clinotronic PLUS after rotating the instrument by 180 degrees. By multiple use of key ▲ ON/MODE, align the selection pointer with the position „ZERO“.


The selection pointer is flashing

Use the key ■ ENTER/HOLD (or the remote control button or the wylerTRIGGER) to collect the first reading. The instrument may still be positioned correctly. A measurement is only collected after several identical values are repeated (the Clinotronic PLUS is able to detect when it is free from interference).

As soon as a valid measurement is registered, it will be displayed:


The selected pointer is flashing

Now rotate the Clinotronic PLUS by 180 degrees (not upside down, but in the opposing direction). Use the key ■ ENTER/HOLD (or the remote control button or the wylerTRIGGER) to collect the second reading. Again, the instrument may now be accurately positioned and aligned in the place where the first reading was taken. The Clinotronic PLUS displays:

First (after a few seconds), for a very short period  and then 

As soon as a valid measurement is avaibale, the Clinotronic PLUS will calculate and set the exact zero point, switch to absolute measuring mode and display the actual inclination of the surface. The Clinotronic PLUS's zero is set to perform more absolute measurements. The measurement units used previously remain set. As the zero setting is retained in the memory, it is not absolutely necessary to reset for each use, but in favour of accuracy, periodic resetting is recommended after prolonged storage.

**The level of vibration at the measuring location largely influences the time necessary to collect a valid measurement. Heavy vibration may even completely prevent the condition (several identical values in succession) necessary to register a true measurement.**

**In order to regain measuring capability under this condition, take the Clinotronic PLUS to an object with a lower vibration level and complete the operation in process. By key operation for RESET (chapter 2.10), the Clinotronic PLUS may instantly returned to standart settings. All previous adjustments are lost by resetting! Memorized calibration data is not affected.**

#### 2.6 Change units of measurement

To display measurements in other than the currently set measurement units, repeatedly use the key ▲ ON/MODE to move the selection pointer to the right until the indication of units in use starts flashing. Using the key ● SELECT/PRINT all the possible units and formats can be displayed in succession. Select one of the possibilities and use the key ■ ENTER/HOLD to enter your choice. The unit indication will be displayed on normal mode and the Clinotronic PLUS is ready to measure using the new units. Unless a new selection is made, this setting will remain effective even after the instrument switches off (sleep mode).

**ATTENTION! Special cases:**

- No decimal point and no unit indication displayed = artillery per mil
- Decimal point only but no unit indication displayed = percent
- Measurement units mm/m and selection pointer in position „REL.BASE“ = mm over a relative base of selected length
- Measurement units „/10“; inch per 10 inch and selection pointer in position „REL.BASE“ = inch over a relative base of selected length

## 2. Operating elements

The following measuring units may be selected:

| Display / format | Measuring unit | Code character for printout |
|---|---|---|
| 00°00’ | Degree/Min | G |
| 00’00’’ | Min/Sec | S |
| 00.00 gon | Gon/ 2 Dec. | O |
| .0000 gon | Gon/4 Dec. | O |
| 00.00 mm/m | mm/rel. base/2 Dec. | L |
| .0000 mm/m | mm/rel. base/4 Dec. | L |
| .0000 ’’/10’’ | Inch/rel. base/4 Dec. | H |
| 0000 | Artillery Permille A‰ | A (display without units) |
| 00.00 | % | % |
| 00.00 mm/m | mm/m/2 Dec. | M |
| .0000 ’’/10’’ | Inch/10 Inch | I |
| .0000 ’’/12’’ | Inch/12 Inch | K |
| 00.00 mrad | Milliradian/2 Dec. | R |
| 0000 mrad | Milliradian | R |
| 00.00° | Degrees/2 Dec. | D |
| .0000° | Degrees/4 Dec. | D |

**2.7 Change relative base / save set-up**

A mode displaying inclination by the height in mm or inch at the end of a straight line with the length previously set is included in the Clinotronic PLUS „Measurement with relative base in mm or in inch“.
Factory default settings for base length are: **1000 mm or 10 inch**. To change these base lengths or to see which base lengths are presently set, proceed as follows:

Repeatedly using the key ▲ ON/MODE, align the selection pointer with the indication „REL.BASE“. Now use the key ● SELECT/PRINT to display the length presently stored. Repeated use of ● SELECT/PRINT will in turn display the values stored in the „mm“ and in the „inch“ memory. With the desired display (note unit indicated; mm/m for length in mm, „/10“ for length in inch), use the key ■ ENTER/HOLD to open the memory for alteration. The selection indicator (flashing) will jump below the first digit.

Use the key ▲ ON/MODE to change this digit. Each key operation will increase the value by 1.

Use the key ● SELECT/PRINT to move the selection indicator to the next digit. Change all digits as desired. The value displayed is the base length in mm or inch, depending on the memory opened, no fractions are possible.

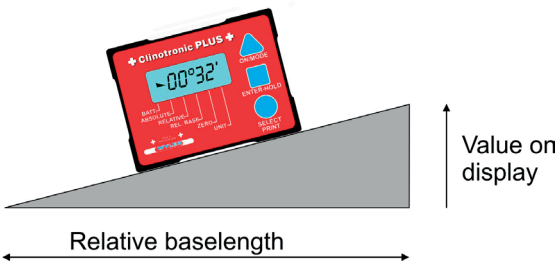
Use the key ■ ENTER/HOLD to store the new value. The new measuring unit will remain stored until newly changed, even after switching the Clinotronic PLUS off (sleep mode). After this operation the Clinotronic PLUS automatically returns to the previously set measuring mode. Inclinations are displayed in the units last set.

If necessary, change to different measurement unit. The following possibilities are available for measurements with relative base:

00.00 mm/m selection indicator on position „REL.BASE“
.00 00 „/10“ selection indicator on position „REL.BASE“

## 2. Operating elements

For relative base measurements, the following approach is applicable:




**2.8 Hold - function**

This function is available in all measuring modes. Use the key ■ ENTER/HOLD (or the remote control button or the wylerTRIGGER). While the Clinotronic PLUS waits for a valid measurement (several identical values in succession), the display will show ◢ oo°oo'. As it is practically impossible for two successive values to be identical while the instrument is handled, the Clinotronic PLUS may be positioned after the key is depressed.

As soon as the condition for a valid measurement is fulfilled, the measuring value is displayed with flashing digits. To read the measurement value, the Clinotronic PLUS may be removed from its located position. The display value is „frozen".

The level of vibration at the measuring location considerably influences the time necessary to collect a valid measurement. Severe vibration may even completely prevent the condition (several identical values in succession) necessary to register a true measurement.

In order to regain measuring capability under this condition, the hold mode can be cancelled by pressing the ● SELECT/PRINT.

**2.9 Cancel**

You have started with an alteration, but wish to discontinue: Provided no parameters have yet been transferred by ■ ENTER/HOLD this is possible. First, press and hold the ▲ ON/MODE button, then press the ● SELECT/PRINT button to restore the „old" parameters.

**YOUR SALVATION, IF YOU ENTERED THE CALIBRATION PROGRAM ACCIDENTALLY!**

## 2. Operating elements

**2.10 Reset**

If the Clinotronic PLUS shows no reaction to key operation or the display is incomprehensive: You probably found a faulty key sequence as yet unknown to us, which the processor cannot interpret.

You wish to reset the Clinotronic PLUS to factory default setting (cancel all parameters set by operator) or you have special reasons (problems using hold function or zero setting) which force you to a reset in order to continue operation:

**Solution:** Depress first the key ▲ ON/MODE and keep it pressed while pressing ■ ENTER/HOLD for longer than 10 seconds.
Apart from the calibration data, all stored settings are removed or are set to factory default.

The Clinotronic PLUS is now set as follows:

| | |
|---|---|
| Measuring mode | Absolute |
| Measuring unit | mm/m 2 decimals |
| Relative base | 100 mm and 10 inch |
| Absolute zero | Lost, see chapter 2.5 for re-setting |
| Relative zero | Lost, see chapter 3.2 for re-setting |

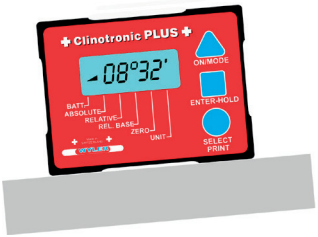
**2.11 Data transmission**

True RS485 - interface / connections to USB port of a PC (special WYLER cable required).

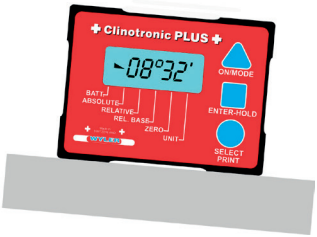
## 3. Applications

**3.1 Absolute measurement**

For accurate measurements it is recommended to reset the absolute zero point of the Clinotronic PLUS in accordance with chapter 2.5 prior to the first measurement. Thereafter place the Clinotronic PLUS on the surface to be measured, the instrument directly displays the inclination with respect to absolute horizontal or vertical.




Inclined to the right, + 08°32'




Declined to the right, - 08°32'

**3.2 Relative measurement**

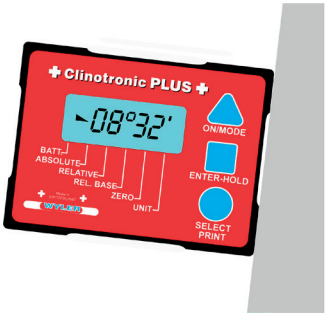
Place the Clinotronic PLUS on the reference surface and using the key ▲ ON/MODE, select the mode „RELATIVE", the selection indicator will then flash. Using the key ■ ENTER/HOLD will put the relative mode into operation, allow a moment until the Clinotronic PLUS displays ◢ 00°00' ,showing that the reference is set. The Clinotronic PLUS will then display the difference of inclination with respect to the pre-set value. To return to absolute mode, use the key ▲ ON/MODE.

## 3. Applications

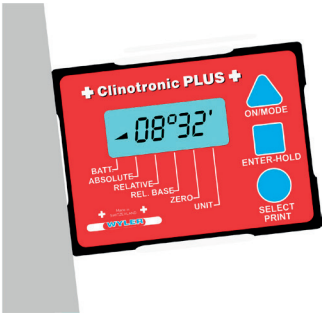
### 3.3 Measurement of wide angles

The four surfaces framing the instrument are finished perpendicularly to each other. Each of them may be employed as a measuring base, thereby allowing inclination measurements at any angle greater than the sensor measuring capacity (±45 degree).

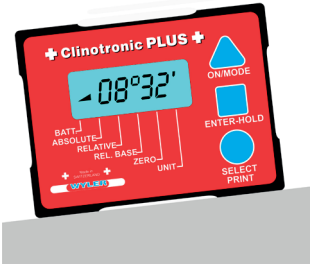
Vertical and horizontal measurements / measurements with different bases



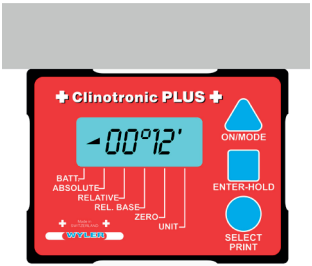

Declined to the right




Inclined to the right




Inclined to the right




Inclined slightly to the right

### 3.4 Switch off the instrument

To switch off the instrument, press the ▲ ON/MODE key for min. 3 seconds until the display goes blank.

**Remarks: When an external power supply is connected, the instrument cannot be switched off.**

## 4. Technical specifications

### 4.1 General

| Measuring range | | ±45 Arcdegrees | ±60 Arcdegrees |
|---|---|---|---|
| **Calibration** | Last values at | ±50 Arcdegrees | ±60 Arcdegrees |
| **Limits of error** | | < 2 Arcmin<br>+ 1 Digit | < 3 Arcmin<br>+ 1 Digit |
| **Settle time** | Value available after | < 5 Seconds | |
| **Resolution** | Depending on units set | > 5 Arcsec | |
| **Data connection** | | RS485 / Asynchron / 7 Bit / 2 Stop Bit / No Parity / 9600 Baud | |
| **Battery** | | 1 x Size AA 1.5 alkaline | |
| **Battery life** | In full operation | Size AA 1.5V alkaline / 25 hours | |
| **Housing** | Aluminium hard anodised | 100 x 75 x 30 mm | |
| **Weight** | | 400 g, incl. battery | |
| **Temperature range** | Operating<br>Storage | 0 to 40 °C<br>-30 to 70 °C | |
| **CE conformity** | | Meets emission and immunity requirements | |

### 4.2 Specifications for port connection

4.2.1 Data transfer

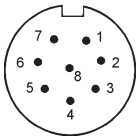
Asynchron / 7 Data Bit / 2 Stop Bit / No Parity / 9600 Baud

4.2.2. Pin definition / connector

Connector: 8pol Binder Series 712 female

Pin-definition:

- 1 **DO NOT CONNECT**
- 2 GND
- 3 +5V
- 4 RTA
- 5 RTB
- 6 **DO NOT CONNECT**
- 7 **DO NOT CONNECT**
- 8 **DO NOT CONNECT**




Outside view of connector

Remarks: Additional information concerning data transfer see Appendix A

## 5. wylerTRIGGER

On request, the Clinotronic PLUS will be delivered with a wylerTRIGGER. The Infrared Receiver is situated under the front foil.


**5.1 Operation**

When pressing the button, the wylerTRIGGER will send a unique infrared code to the Clinotronic PLUS.

If the LED on the wylerTRIGGER is flashing green, the infrared code is being sent
If the LED on the wylerTRIGGER is flashing red, the battery of the zapper must be replaced

**5.2 „Teach-in" of the wylerTRIGGER**

In order to eliminate interference of the zapper signals when several Clinotronic PLUS are active in the triggering range, the wylerTRIGGER can be assigned to a specific Clinotronic PLUS by applying the function „teach-in".

Procedure „Teach-in":

- The Clinotronic PLUS must be switched on
- Keep the ● SELECT/PRINT button on the Clinotronic PLUS pressed
- Point the wylerTRIGGER in direction of the Clinotronic PLUS
- Press the actuator key on the wylerTRIGGER until the bar in the left hand upper corner of the display stops flashing


When the Clinotronic PLUS is dispatched, the „teach-in" function is factory set.

# 6. Service

**6.1 Calibration**

A reserved memory space incorporated in the Clinotronic PLUS contains calibration data in predefined intervals. Prior to all displays, this data is accessed applying a specialized interpolation and is used to compute the measurement value. Calibration data stored in this memory is initiated from an automatic calibration process based on a high accuracy dividing head, which is performed at the manufacturing stage.

Recalibration is possible at any time starting the calibration program by key operation. The following example is for a Clinotronic PLUS with a measuring range of ±45 degrees. Basically, the same procedure is used for other ranges.

1. Mount the Clinotronic PLUS to an angular reference equipment and set an angle of 50 degrees sloping to the right (display facing you and data connector being on the right side). Connect the cable of the remote push-button to the data connector. If a wylerTRIGGER is available, the calibration procedure can also be controlled using the wylerTRIGGER.

2. Before starting the calibration procedure, preferably a reset is performed (see chapter 2.10). To reset, simultaneously press the two keys ▲ ON/MODE and ■ ENTER/HOLD by starting with the ▲ ON/MODE key for a min. period of 1 second.
   Start the calibration program by pressing first the key ● SELECT/PRINT and keep pressed while using simultaneously the key ■ ENTER/HOLD for a period of min. 5 seconds. A sucessful start to the calibration program is indicated by the display showing at first ◣ 00.00“ , thereafter displaying ◣ 50.00° in flashing mode which represents the first calibration point.

3. To enter a calibration point, first confirm that the reference setting corresponds with the value displayed, then press the remote button, with the wylerTRIGGER or if both are not available with the key ■ ENTER/HOLD. Allow a moment (a few seconds) for the Clinotronic PLUS to register the respective data. The instrument must remain untouched.

4. When the calibration data for one setting is successfully stored, the Clinotronic PLUS will display the next setting required. The display will show in 5 degree steps successively ◣ 45.00° to ◢ 50.00° .

**Due to automatic adjustment of acceptance requirement calibration may be impossible if vibrations are present or if an unstable set-up is used.**

5. Adjust the angular equipment according to the new value flashing on the Clinotronic PLUS display.

6. Repeat operation 3 to 5 until the last value ◢ 50.00° is registered.

7. Upon completion the Clinotronic PLUS automatically returns to the mode last set or, if the setting data was canceled, to the standart setting.

**IMPORTANT! Prior to absolute measurements it is necessary to reset zero.**

# 6. Service

**6.2 Accessories / spare parts**

The following items are available:

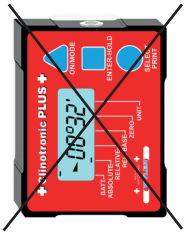
| | | P/N |
|---|---|---|
| Batteries | 1x Size AA 1.5V alkaline | 604-012-0001 |
| Serial cable | RS232 conversion to RS485 | 015-025-928-232 |
| Universal cable | With this cable, the Clinotronic PLUS can be connected to a USB port of a PC | 015-018-468-USB |
| Cable 2.5 m with remote button | The cable is recommended for calibration precedure or for applying the hold function without touching the instrument | 015-025-8D1PLUS |
| wylerTRIGGER | For initiating the measuring process in the calibration procedure or for initaliting the instrument | 015-005-007 |

# 7. Storage

**7.1 Storage position instrument**

For long periods of storage, never place the Clinotronic PLUS in a position with its longitudinal axis vertical. An incorrect storage position may, due to overloading of the pendulum system, result in a substantial drift of the zero point whilst recovering its equilibrium.


Correctly stored



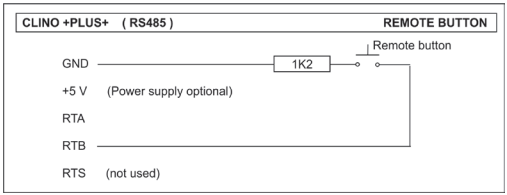

Incorrectly stored

**7.2 Care and handling of the batteries**

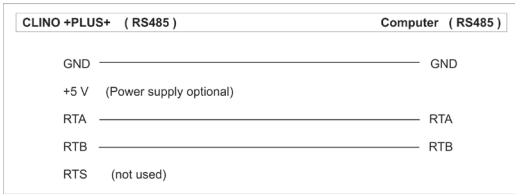
Read the instructions in your manual before installing batteries. Make sure to insert the batteries properly, following the symbols showing you the correct way to position the positive (+) and negative (-) ends of the batteries. Keep battery contact surfaces clean by gently rubbing with a clean pencil eraser or cloth. Replace batteries with the size and type specified by the device's manufacturer. Remove all used batteries from the device at the sam time and replace them with new batteries of the same size and type. Store batteries in a cool, dry place at room temperature. Remove batteries from devices that will be stored for extended periods. Don't dispose batteries in a fire – they may rupture or leak. Don't recharge a battery unless it is specifically marked as „rechargeable". Attempting to recharge a normal battery could result in rupture or leakage.

## Appendix A

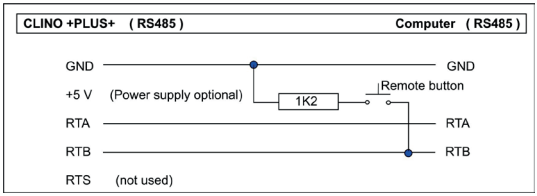
**a) Connecting a remote button to the Clinotronic PLUS using the RS485 interface**




**b) Connecting the Clinotronic PLUS to a computer with a RS485 interface using the RS485 interface of the instrument**




**c) Connecting the Clinotronic PLUS to a computer with a RS485 interface using the RS485 interface of the instrument / also a remote button installed**



## Appendix A

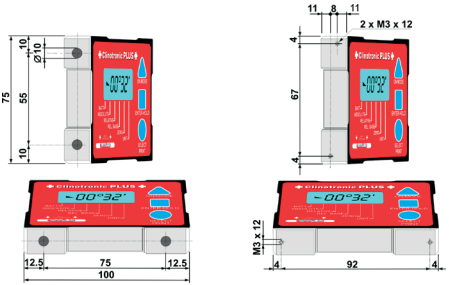
**Disposal of batteries / accumulators**

You are required by law (battery ordinance) to return all spent batteries / accumulators. Disposing of spent batteries / accumulators in the household waste is prohibited! Batteries / accumulators that contain hazardous substances are marked with the symbols on the side. You can return spent batteries respectively accumulators that can no longer be charged free of charge to the collection points in your requirements and contribute to the protection of our batteries or accumulators sold. You thus fulfill the legal requirements and contricute to the protection of our environment.

## Appendix B

**Attaching Clinotronic PLUS**

- Special executions with permanent magnets recessed in the measuring bases are available on request
- During manufacturing threaded holes may be put in at the same time
- These options may result in higher cost and longer delivery time




Standart dimensions for magnetic inserts and threaded holes

## Appendix C

**CLINOMASTER for the calibration of the Clinotronic PLUS**

Insecurity will diminish, forget allowance for curing of materials and electronic components. Eliminate insecure feeling after accidental maltreatment of Clinotronic PLUS. Eliminate error chart.


**Quality assurance / calibration**

- CLINOMASTER is the solution when the tracing of the calibration data of the Clinotronic PLUS instrument is required
- CLINOMASTER is equipped with 21 accurately positioned calibration points in 5 degrees steps
- CLINOMASTER makes the checking of the instrument measuring accuracy remarkably easy and reliable
- CLINOMASTER is the perfect master for the calibration of the Clinotronic PLUS
- CLINOMASTER and Clinotronic PLUS are a hard to beat pair

To be supplied with a SCS certificate / WYLER AG P/N 015-000-021

## Appendix D

**Repair of measuring instruments**

Normally, any instruments requiring repair can be sent to the local WYLER partner (local distributor) who will take the necessary steps and make the arrangements for repair on behalf the customer.

## Appendix E

**Error messages**

.OVER Over range, the measuring value exceeds the measuring range

.UNIT The measuring value cannot be displayed with the unit selected

## Modifications

| Date | Modified by | Description of modifications |
|---|---|---|
| 21.09.2006 | HEH | CLINOTRONIC PLUS new edition |
| 27.06.2007 | HEH | Various modifications |
| 24.07.2007 | HEH / BRP | New with USB connection and Infrared Zapper |
| 21.11.2012 | MG | New error messages |
| 26.04.2016 | MG | New unit % |
| 27.11.2024 | UK / MRA | New design + various modifications |
| 03.12.2024 | UK / MS | New release |
| 09.12.2025 | MRA | Modification settle time |
| 09.12.2025 | MS | New release |

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Swiss Quality