

OPERATOR'S MANUAL

wylerLEVEL / wylerCLINO



wylerLEVEL Frame / wylerCLINO Frame



CONTENTS

1.	Introduction	4
1.1.	Description of the wylerLEVEL	4
1.2.	Preparation and startup of the measuring and display devices	4
1.2.1.	Before you begin	4
1.2.2.	Standard equipment	5
1.2.3.	Possible applications	6
2.	Handling	8
2.1.	Storing the device/batteries / battery maintenance	8
3.	Controls / brief overview	10
3.1.	Overview of keyboard and display	10
3.1.1.	Overview of keyboard and display for wylerLEVEL	10
3.1.2.	Overview of keyboard and display for wylerCLINO	10
3.1.3.	How to switch the device on and off	11
3.1.4.	Keys / functions / brief description of the individual keys	11
3.2.	Display	14
3.2.1.	Scaling the display	14
3.2.2.	Display options	14
3.2.3.	Background color	16
3.2.4.	Brightness	18
3.3.	Brief description of various parts of the display	19
4.	How to use the wylerLEVEL	21
4.1.	ZERO-Setting / Absolute ZERO	21
4.1.1.	Absolute ZERO (reversal measurement)	21
4.2.	Selecting the measuring unit / UNIT	23
4.2.1.	Standard units	23
4.2.2.	Units with relative base length	23
4.3.	HOLD function	23
4.4.	Selecting the filter under different measuring conditions / FILTER	25
4.5.	Absolute measurement / relative measurement	25
4.5.1.	Absolute measurement	25
4.5.2.	Relative measurement / REL ZERO	26
4.6.	Using the device with BlueMETER SIGMA	28
4.6.1.	Grouping in wireless operation / JOIN	28
4.6.2.	Removing a device from a measuring group with the LEAVE function	29
4.7.	Quick calibration (possible only with dowel pin calibration)	30
4.8.	TEACH-IN of the wylerTRIGGER	32
5.	Options	33
5.1.	Setting PIN code	34
5.2.	Display settings	34
5.3.	Logscale	35
5.4.	Programmable keys	36
5.5.	Functions ON/OFF	37
5.6.	Hide disabled functions ON/OFF	37
5.7.	Radio ON/OFF	38
5.8.	Gravitation	38
5.9.	Firmware version	39
5.10.	Reset quick calibration (possible only with dowel pin calibration)	39
5.11.	Factory reset	40
5.12.	Function check	41
6.	Appendix	42
6.1.	Error messages	42
6.1.1.	Batteries	42
6.1.2.	Directive on Waste Electrical & Electronic Equipment (WEEE)	43
6.2.	Declarations of conformity and approvals	45
6.2.1.	Manufacturer's Declaration of Conformity (DoC)	45
6.2.2.	Bluetooth module manufacturer's Declaration of Conformity	46
6.2.3.	FCC compliance	47
6.2.4.	Country-specific information for Bluetooth radio link (>10mW RF-Power)	48
6.3.	Technical data	50
6.4.	Service and maintenance agreements	50
6.4.1.	Repair of measuring and display devices	50
6.4.2.	Service and maintenance agreements	50

1. INTRODUCTION

1.1. DESCRIPTION OF THE WYLERLEVEL / WYLERCLINO

This manual describes the wylerLEVEL and wylerCLINO devices. There are only few differences in the handling of the two devices. These differences mainly involve the measuring range and resolution.

wylerLEVEL:

Measuring range:	1°
Resolution:	0.001 mm/m

wylerCLINO 10°:

Measuring range:	10°
Resolution:	2 arcsec

wylerCLINO 60°:

Measuring range:	60°
Resolution:	5 arcsec

Precise technical specifications are available on our homepage: <http://www.wylerag.com>.

1.2 PREPARATION AND STARTUP OF THE MEASURING AND DISPLAY DEVICES

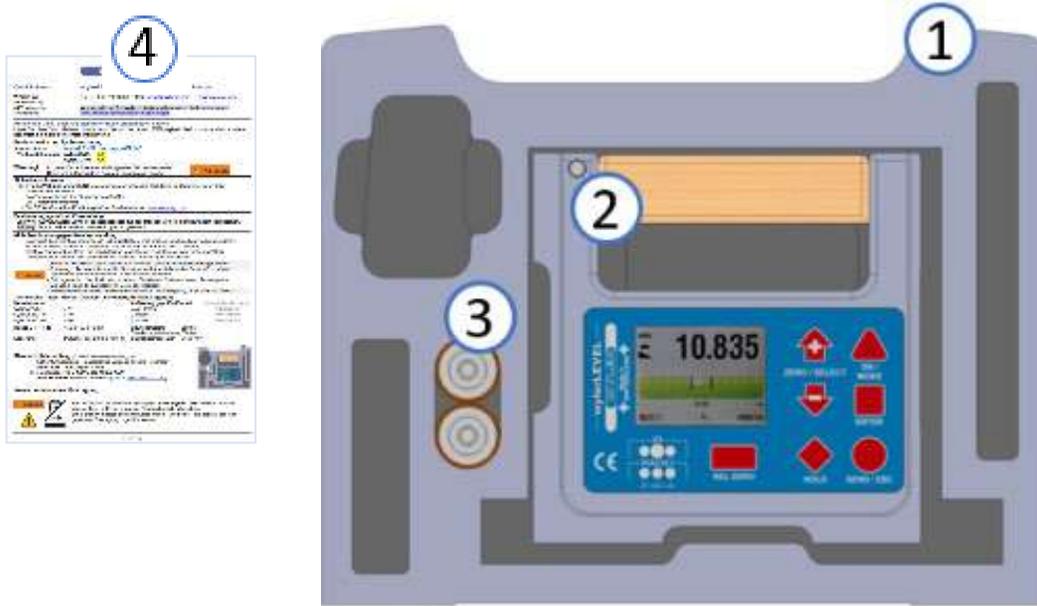
1.2.1 BEFORE YOU BEGIN

Carefully read through this operator's manual before you begin working with the wylerLEVEL for the first time, as it contains an overview of the many functions and options that the device offers. Doing so will familiarize you with the various controls available.

You can get support at the following links:

- Important product information:
<http://www.wylerag.com/en/support/certificates/>
- Instructional videos and tutorials:
<https://www.youtube.com/user/wylerag>
- Manuals and compendium:
<http://www.wylerag.com/en/support/documentation/manuals/>
- WYLER AG representatives and product training:
<http://www.wylerag.com/en/contact/representatives/>

1.2.2 STANDARD EQUIPMENT



- 1 **Case for storage, transport, and shipping for repair**
 - 2 **wylersLEVEL / wylersCLINO,**
 - 3 **2 Type C 1.5 V batteries**
 - 4 **Quick Reference guide** (For Operator's Manual see: www.wylerag.com)
- (For accessories see: www.wylerag.com)

1.2.3 POSSIBLE APPLICATIONS

The following uses of the device are possible. The following PC applications can be used:

- wylerEXPLORER
- wylerSPEC
- wylerDYNAM
- wylerINSERT
- User-defined applications based on our wylerSDK. The wylerSDK is a software package that contains C#-Assembly incl. examples. With it, separate device connections can be created without having to re-implement the device protocols.

<https://www.wylerag.com/en/products/software-wylersoft/software-tools/software-development-kit/>



Use as a standalone device



Connect wylerLEVEL / wylerCLINO to a PC via wireless and wylerCONNECT



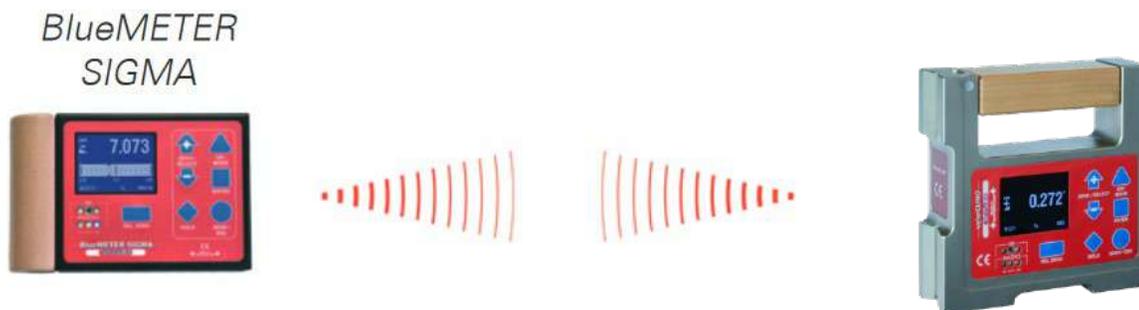
Connect wylerLEVEL / wylerCLINO to a PC using a cable connection via wylerCONNECT



wylerLEVEL / wylerCLINO connected with the wylerAPP



wylerLEVEL / wylerCLINO connected to BlueMETER SIGMA via cable

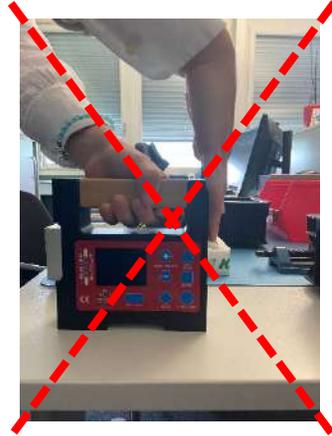


Connect wylerLEVEL / wylerCLINO with BlueMETER SIGMA wirelessly

Possible example applications are described in our Instrumentarium, which is available on our homepage:
<https://www.wylerag.com/en/applications/projects-with-wyler-systems/>

2. HANDLING

When measuring, hold the device only by the wooden grip in order to minimize drift error due to heat input from your hand.



The included dowel pins must be cleaned and greased carefully. In addition, care must be taken to prevent the drilled holes in the tools from becoming dirty.

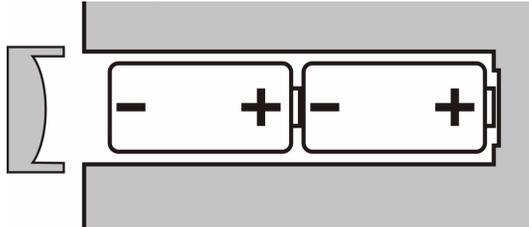
The wylерLEVEL requires no special maintenance aside from the usual cleaning.

During shipping, the batteries are delivered separately. We recommend removing the batteries before transporting the devices.

The voltage of the batteries is normally shown in the display, e.g. 27 (2.7 Volt)

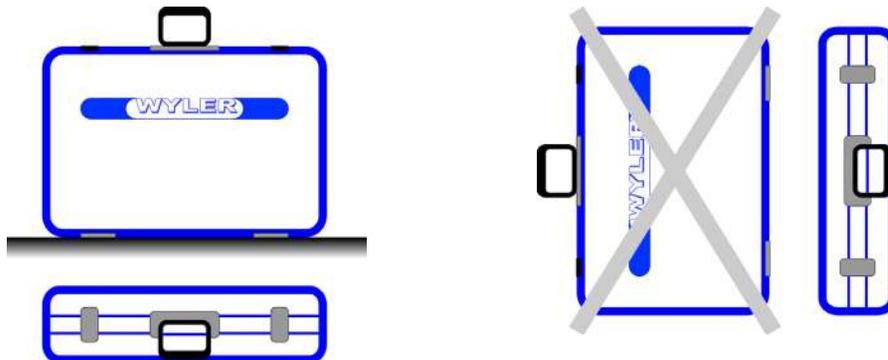
The lowest voltage is 1.7 volts. If the voltage drops further, a blinking battery symbol appears . The batteries must then be swapped out within a reasonable timeframe.

2 items 1.5V, Size "C" ALKALINE



Caution: If the device is equipped with magnets: The magnets are intended to assist during measurement. They cannot hold the device securely on their own. Therefore, ALWAYS hold the device by hand or with other equipment!

2.1 STORING THE DEVICE/BATTERIES / BATTERY MAINTENANCE



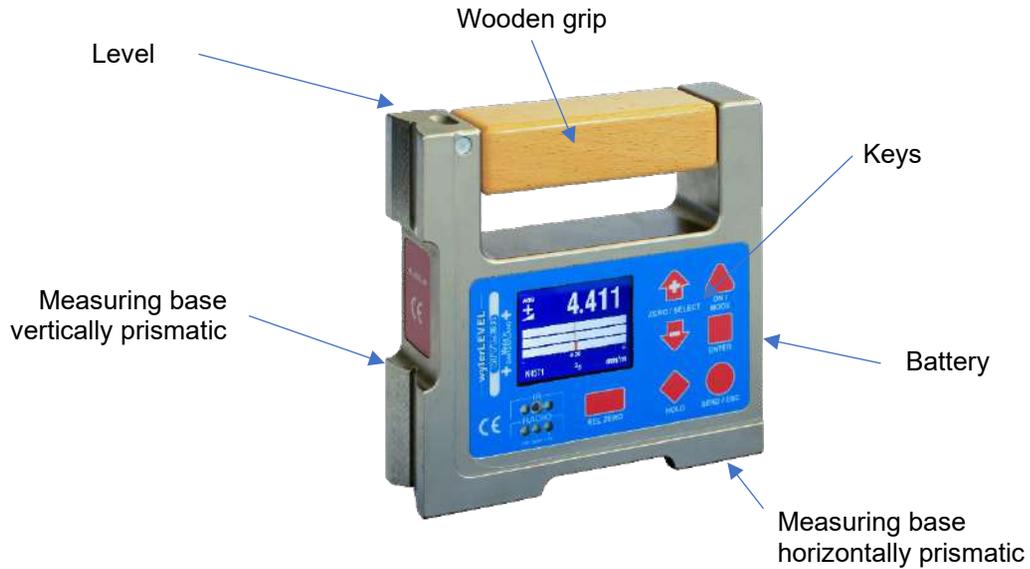
When not in use for longer periods, the wylерLEVEL should be stored in the carrying case provided. Read the instructions and tips in the Operator's Manual before installing the batteries. Ensure that the batteries are installed correctly. Take note of the PLUS (+) and MINUS (-) symbols at the ends of the batteries. Keep the battery contacts clean and clean them with a soft cloth. Take note of the

manufacturer's specification and size when replacing the batteries. Replace all batteries at the same time. If storing the device for longer periods of time, it is recommended that you remove the batteries from the device and store them at room temperature in a dry location. Do not dispose of old batteries in fire. Batteries must not be recharged unless labelled "rechargeable."

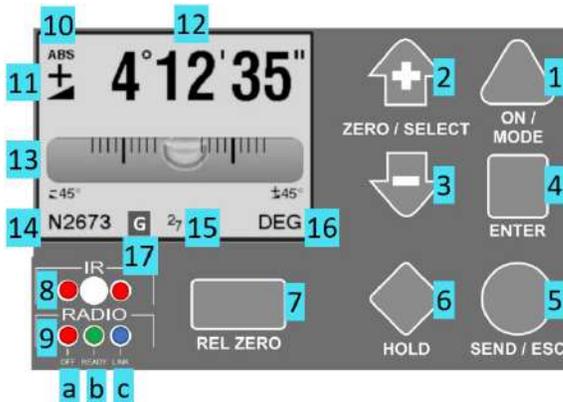
3. CONTROLS / BRIEF OVERVIEW

3.1 OVERVIEW OF KEYBOARD AND DISPLAY

3.1.1 OVERVIEW OF KEYBOARD AND DISPLAY FOR WYLERLEVEL



3.1.2 OVERVIEW OF KEYBOARD AND DISPLAY FOR WYLERCLINO



1 ON/MODE: On/Off or Select in menu

2 Next option + or increase zoom of graphical scale +

3 Previous option - or decrease zoom of graphical scale -

4 Accept selection or Save entry

5 Unfreeze or Escape from the menu

6 Freeze (freeze measuring value)

7 Use current measuring value as Relative Zero

8a+c blinking red: Recognizes IR signal from wylerTRIGGER*

8b IR Receiver

9a red light: Wireless connection down or faulty

9b green light: Wireless connection OK

9c blue light: Wireless connection active and connected.

10 ABS: Absolute measuring value;

REL: Measuring value based on REL ZERO (7)

11 Gradient triangle increasing and decreasing as well as Plus / Minus sign according to inclination

12 Display of Measuring value

13 Graphical display of measuring value (if selected in menu)

14 Serial number

15 Battery voltage (3V to a minimum 2.2V -> Battery change)

16 Measuring unit

17 G= Gravitational constant changed

* Option

3.1.3 HOW TO SWITCH THE DEVICE ON AND OFF

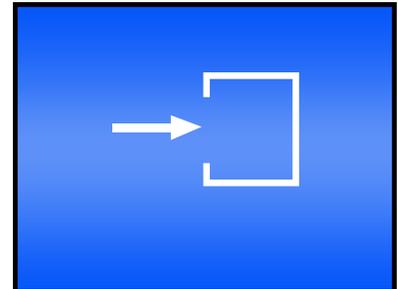
The wylérLEVEL features an automatic shut off. In normal mode, the device shuts off automatically 60 minutes after the last key operation. This automatic shut off function can be deactivated with a special turn on sequence, or by using an external power supply.

Switching the device on:

Press and hold the  key until the display and all LEDs are lit, and release the key. The device will automatically shut off 60 minutes after the last key operation.

If you press the  key for **longer than 10 seconds**, the automatic OFF function is deactivated. This is shown by blinking LEDs.

The device conducts a function test.



The device switches into measuring mode. The settings that were in place the last time the device was used will be applied.

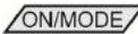
Switching the device off:

Press and hold the  key until the display turns off. The selected settings are saved, and will be reloaded the next time the device is switched on.

3.1.4 KEYS/FUNCTIONS / BRIEF DESCRIPTION OF THE INDIVIDUAL KEYS

	ON/MODE Key
---	--------------------

Function - 1 - Switches the wylérLEVEL ON. When the  key is pressed at start up, a gray image appears on the screen, and all the LEDs will light. After releasing the key, the wylérLEVEL switches into Measuring mode. The current inclination is displayed – using the display mode and measurement unit that were selected during the previous usage. If there is a failure, this will be indicated as an error message on the display screen. The device automatically turns off 60 minutes after the last key operation.

If the  key is held for **longer than 10 seconds**, the LEDs begin to blink and **the automatic shut off function is deactivated**.

Exception: If the wylérLEVEL is connected to an external power supply, the measuring device will not shut off automatically.

Function - 2 - To turn off the device, press the  key for **more than 3 seconds** until the display screen turns off.

Function - 3 - Pressing the  key opens the menu selection. Subsequent presses of the key take your cursor through the menu from top to bottom to the desired position.



ON/MODE Key

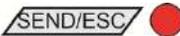
Function - 4 - When setting a numerical value, you can use the  key to set the **default value**.



ENTER Key

Function - 1 - Use the  key to save an entered value, or to confirm a selected function.

Function - 2 - In the functions **REL ZERO** and **ABS ZERO**, the  key can be used to begin a measurement, or end an ongoing one.



SEND/ESC Key

Function - 1 - Unfreeze the **HOLD** function and return to **Measuring mode**. At the same time, the HOLD value is forwarded to the RS485 port for printing.

Function - 2 - **Escape** from input functions and the menu selection

ZERO/SELECT  **ZERO/SELECT "+/-" Key**

Function - 1 - The **ZERO/SELECT**  key is used to:

- change the scale in the display
- increase and decrease the display range

This function can, however, be disabled in the device settings.

Function - 2 - The **ZERO/SELECT**  is used in selecting possible settings

- Menu selection
- Changing a figure in the menu

HOLD  **HOLD Key**

Function - 1 - The **HOLD**  is used to “freeze” a measuring value. The value is displayed until the wylrLEVEL is returned to Measuring mode, which is done by pressing the **SEND** key.

Function - 2 - In the functions **REL.ZERO** and **ABS.ZERO**, the **HOLD**  key is used to input the current measuring value again during manual entry.

REL ZERO  **REL ZERO Key**

Function - 1 - The **REL ZERO**  key is used to set the current inclination as the relative zero.

Rotating the display 180°

With the two middle keys **ENTER**  and **ZERO/SELECT** , the display can be rotated by 180°.

First press the ENTER key, and then the ZERO/SELECT key. This function can be disabled in Options.

With this function, the displayed values can be viewed from ZERO Key all possible angles. This function can be executed at all times, even when the device is remotely controlled by a BlueMETER.



Left: Standard display



Right: Display rotated 180°

3.2 DISPLAY

The wylerLEVEL features various graphic displays that can be selected and scaled according to the requirements of the measuring task. The background color and brightness can also be adjusted.

3.2.1 SCALING OF THE DISPLAY

A variety of scaling options are available in order to facilitate optimal use of the graphic display.

With linear scaling, display precision remains constant across the entire range. The **ZERO/SELECT**   keys can be used to adjust the resolution.

With logarithmic scaling, the display precision is highest at the zero point, and declines progressively with higher inclination values. Around zero the resolution corresponds to the unit selected.

You can switch between linear and logarithmic scaling in the device settings.

Via the **ON/MODE**  key, select the Options menu item and confirm the choice with **ENTER** . Now select Logscale and confirm with **ENTER** .

By using the **ZERO/SELECT**   keys you can turn logarithmic scaling ON and OFF. The display will indicate desired state of the device. Confirm with the **ENTER**  key.



The measuring device returns to Measuring mode. When logarithmic scaling is active, the indication LOG appears under the graphic.

3.2.2 DISPLAY TYPES

The display type can be selected from within the Display menu.

Using the **ON/MODE**  key, select the Display menu item and confirm your choice with **ENTER** .

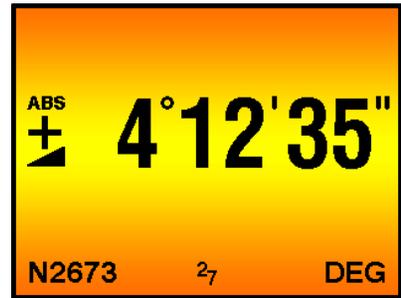
Use the **ZERO/SELECT**   keys to choose the display type that you want, and confirm your choice with the **ENTER**  key.



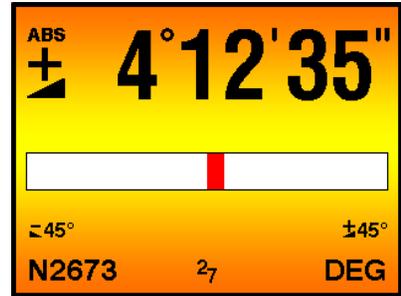
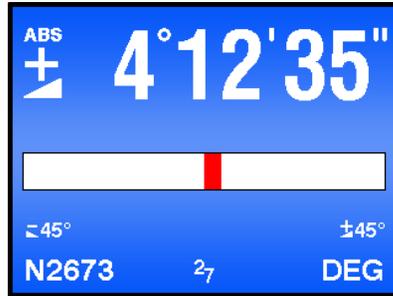
The measuring device returns to Measuring mode.

The following display types are available in the wylrLEVEL:

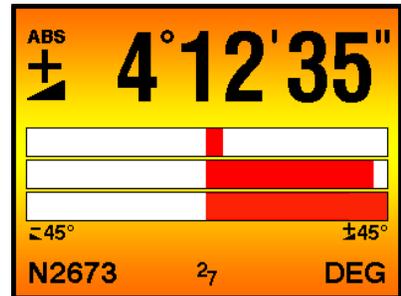
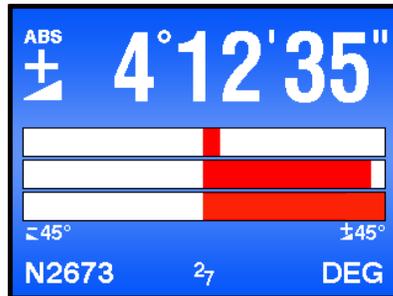
Numeric display



Numeric display plus bar graph



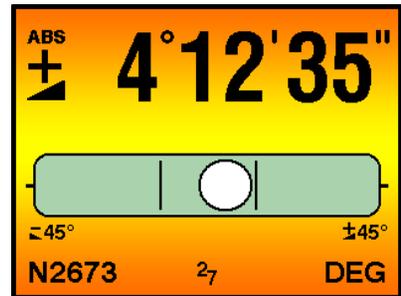
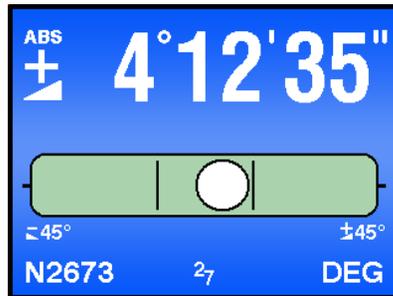
Numeric display plus 3 bars, each with a 10 times higher resolution



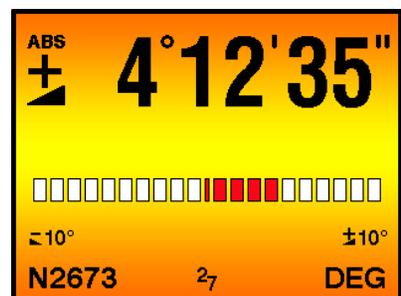
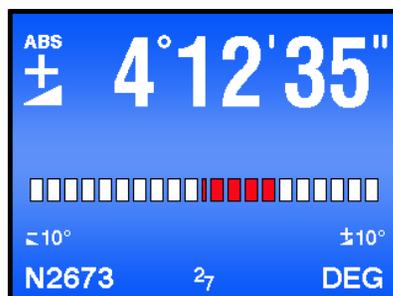
Numeric display plus level (spirit level)



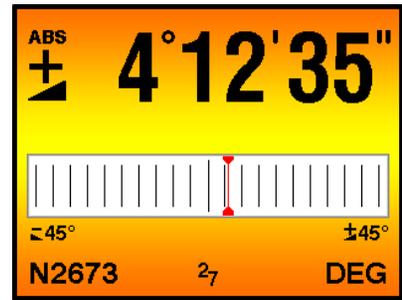
Numeric display plus simple level (spirit level)



Numeric display plus LED display



Numeric display plus needle



3.2.3 BACKGROUND COLOR

The background color can be set in the device Settings. Depending on the brightness of the selected color, the color of the text and symbols will be either black or white.

Use the **ON/MODE**  key to select the Options menu item, and confirm the choice with **ENTER** . Select [Display Settings] and confirm with **ENTER** .

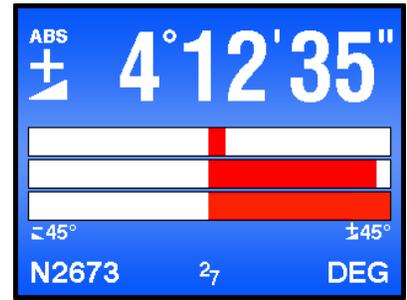
Use the **ZERO/SELECT**   keys to select the desired background color and confirm your choice with the **ENTER**  key.



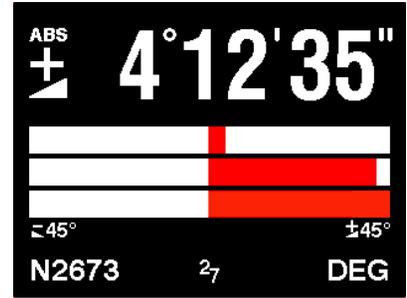
The measuring device returns to Measuring mode.

The wylerLEVEL includes the following background colors:

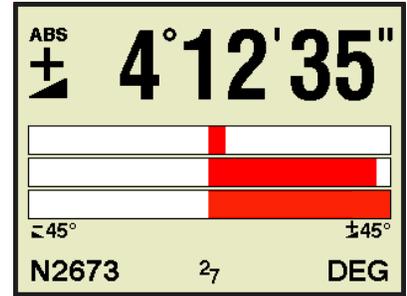
Background: blue



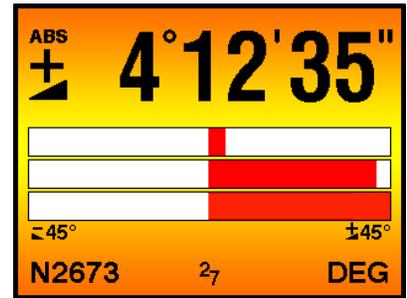
Background: black



Background: beige



Background: orange



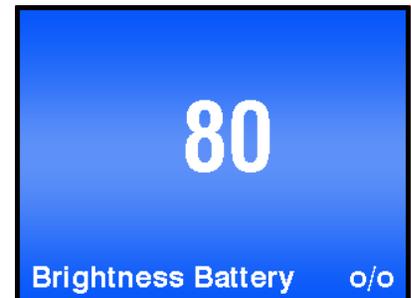
3.2.4 BRIGHTNESS

The brightness of the display can be adjusted in the device Settings in order to adapt the display to the surrounding conditions and to optimize battery life. Thus, two different values can be set - for operation with external power supply, and battery operation.

Using the **ON/MODE**  key, select the menu item [Options] and confirm your selection with **ENTER** . Now select [Display Settings] and confirm with **ENTER** .

Using the **ZERO/SELECT**   keys, select [Brightness] for adjustments when using an external power supply, or [Brightness Battery] for adjustments when operating on battery power. Confirm your choice with **ENTER** .

With the **ZERO/SELECT**   keys, you can adjust the brightness. The display will indicate the power consumption between the range of 10% and 100% of the maximum brightness. Only increments of 10% are possible. Confirm the adjustment with the **ENTER**  key. The default value of 50% can be recalled by pressing the **ON/MODE**  key.



The measuring device returns to Measuring mode.

3.3 BRIEF DESCRIPTION OF VARIOUS PARTS OF THE DISPLAY

Main display

The current measuring value is shown in the main display.

Display of the inclination direction

A symbol indicates the direction of the inclination for the value displayed



Inclined to the right (positive inclination)



Declined to the right (negative inclination)

on hold

The HOLD function is activated, i.e. the measuring value is “frozen”.

ABS

Absolute measurement is activated.

REL

Relative measurement is activated, i.e. the measured value is the difference between the current plane and the reference plane, in other words, the relative base.

Display range 60°

Shows the selected display range. The display range can be adjusted with the **ZERO/SELECT**   keys, provided that this function is enabled in Options.

Scale division 5°

Angle between two tick marks.

Scale division LOG

Shows that a logarithmic scale is being used. If this symbol isn't shown, a linear scale is being used.

Serial number	Displays the serial number of the device.
Battery voltage 2 ₆	Displays the current battery voltage (example: 2.6 V) The lowest possible voltage is 1.7 volts. If the voltage continues to drop, a blinking battery symbol will appear. The batteries must then be replaced immediately. A plug symbol will appear if the device is powered by an external source.
Measuring unit	Displays the measuring unit currently in use. There are 10 basic units of measurement available, each of which features a number of variations. Depending on the unit set, the last digit will be rounded to 5" or to the next lower integer value. (e.g. 20 μm/m).

4. USER'S MANUAL FOR WYLERLEVEL

The wylerLEVEL offers a wide range of functions and settings options. The list of functions appears when the **ON/MODE**  key is pressed. Using the **ZERO/SELECT**   keys, you can select the desired function, and begin using it by pressing the **ENTER**  key. If no additional key is pressed within 10 seconds, the function list will be closed. You can escape from a selected function by pressing the **SEND/ESC**  key. Any changes made to parameters will be ignored, and the WylerLEVEL returns to the display mode that had been defined previously.

The individual functions are described below.

4.1 ZERO-SETTING / ABSOLUTE ZERO

Absolute ZERO means that the device shows the measuring value "0" if the measuring surface of the device is aligned exactly according to gravity.

4.1.1 SETTING ABSOLUTE ZERO (WITH REVERSAL MEASUREMENT)

The absolute zero is used as the base for absolute inclination measurements. In order to achieve the highest possible precision, ensure that the measuring object (base) and the wylerLEVEL are as close as possible to the same temperature, and that the device has been in use for several minutes before conducting a measurement. Mark the exact location – and in particular the orientation of the wylerLEVEL – so that you can rotate the device 180 degrees, and precisely position it in the opposite direction.



The absolute zero is automatically determined through a **reversal measurement** (two measurements in opposite directions, but from the same position). To carry out this procedure, choose a suitable surface (rigid, stable support, and as smooth and horizontal as possible) that you can place the wylerLEVEL on. Mark the position and orientation of the wylerLEVEL precisely, and then rotate it 180° in the same spot.

$$\text{ZERO OFFSET} = \frac{\text{Messung "A"} + \text{Messung "B"}}{2}$$

The "ZERO OFFSET" is stored in the device

EXAMPLE:

Via the **ON/MODE**  key, select the menu item [Abs. Zero] and confirm your choice with **ENTER** .

In the display, you will see the position of the device for the first measurement.

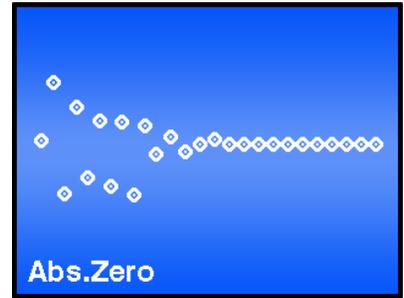
Place the wylerLEVEL in the 1st position.

Begin the first measurement by pressing the **ENTER**  key, by using the zapper (remote).



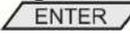
During the measurement, the display provides a graphical representation of the measurement in progress.

You can complete the measurement by pressing the  key, or by using the zapper. If no keys are pressed, the measurement process ends automatically after 15 seconds.



After the device has successfully determined the first measurement value, the display will show the position of the device for the second measurement.

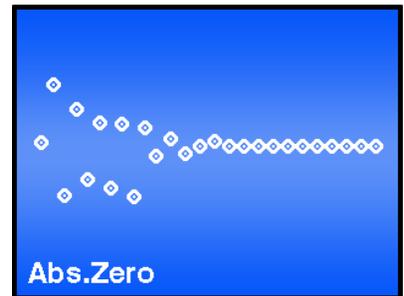
Place the wylerLEVEL in the 2nd position (rotate the wylerLEVEL 180° on the plane)

Begin the second measurement in the same way, by pressing the  or by using the zapper.



During the measurement, the display provides a graphical representation of the measurement in progress.

Complete the measuring process with the  key, or with the zapper. If no keys are pressed, the measurement process ends automatically after 15 seconds.



After the reversal measurement is completed, the display shows the readout for the current measurement taking account of the ZERO OFFSET.



Note:

The value of the ZERO OFFSET determined by a reversal measurement corresponds to the deviation of the zero point of the wylerLEVEL compared to the absolute zero point. The readout on the display corresponds to:

Displayed VALUE =
Value of the device minus the zero offset.

In order to achieve the most precise results possible, the reversal measurement described above should be repeated periodically, particularly if the wylerLEVEL has not been used for a longer period.

4.2 SELECTING THE MEASURING UNIT / UNIT

4.2.1 STANDARD UNIT

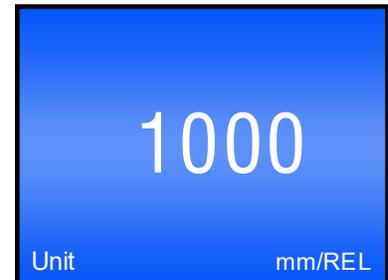
You can change the measuring unit of the inclination values displayed. If you start the function [UNIT], the list of available measuring units will appear. You can select the desired measuring unit by using the **ZERO/SELECT**   keys. To save the selected measuring unit, press the **ENTER**  key. The measuring unit will remain active until you change it again using the procedure outlined above.

4.2.2 UNITS WITH RELATIVE BASE LENGTH

The units mm/REL and "/REL apply to a relative, i.e. selectable base lengths. Once one of these units has been selected, the relative base length must be entered.

Example: **mm/REL** / mm based on the relative base / 2 decimal places.

After selecting the measuring unit in our example, the stored base length of 1000 mm appears.

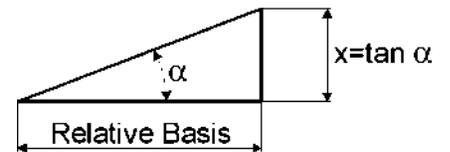


The specified base length can be changed by using the **ZERO/SELECT**   keys. The newly entered value can then be saved by pressing the **ENTER**  key. Pressing the **ON/MODE**  key causes the default value 1000 mm to be applied.

The following measurements now relate to a base length of 1250 mm.



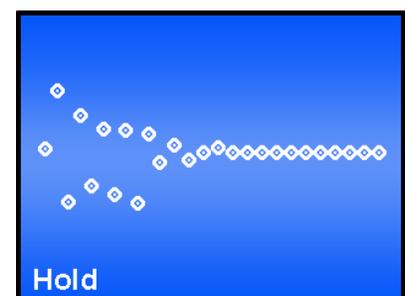
When measuring in Relative Mode, the height X is displayed as linear measure in relation to the base length entered (in **mm** or **inches**).



4.3 HOLD FUNCTION

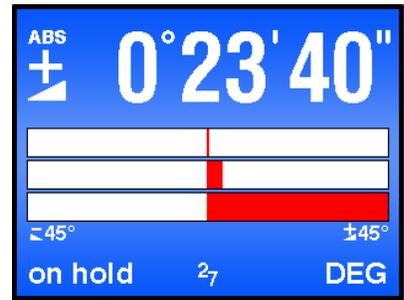
The key function **HOLD**  can be applied in all measuring modes.

Place the wylerLEVEL on a stable base. Now press the **HOLD**  key. While the wylerLEVEL is waiting for a valid measuring value, the display will show a graphic depicting the measuring values read as a set of points. As it is practically impossible to obtain a valid measuring value while handling the device, it can be set in its final position even after activating the key.



Complete the measurement with the  key, or by using the zapper. After 15 seconds the measuring value will be automatically read.

By pressing the  key again, a new valid measuring value will be read.



4.4 SELECTING THE FILTER UNDER DIFFERENT MEASURING CONDITIONS / FILTER

A number of different predefined filters can be selected.

Description of the different filter types:

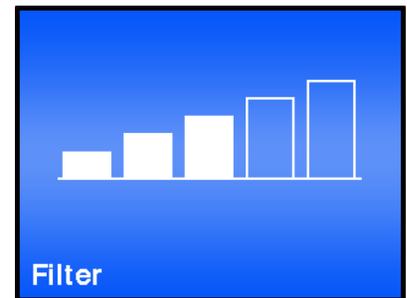
- FILTER 1: No filtering; no integration of the measuring values (T const. = 0.33 sec.)
- FILTER 2: Floating average of 3 measuring values (T const. = 1 sec.)
- FILTER 3: Floating average of 15 measuring values (T variable = 0.33 ... 5 sec.)
- FILTER 4: Floating average of 6 measuring values (T const. = 2 sec.)
- FILTER 5: Floating average of 15 measuring values (T const. = 5 sec.)

T: Response time when changing position. In the case of Filter 3, the change in the measuring value defines the number of values applied for calculating the floating average. With significant changes, the number of values is reduced; with minor fluctuations, the number is increased.

Filter 3 is the default factory setting from WYLER AG.

Use the **ON/MODE**  key, and select menu item [FILTER], and confirm your choice with **ENTER** .

Using the **ZERO/SELECT**   keys, you can select the desired filter type, and confirm with **ENTER** .



The measuring device returns to Measuring mode.

4.5 ABSOLUTE MEASUREMENT / RELATIVE MEASUREMENT

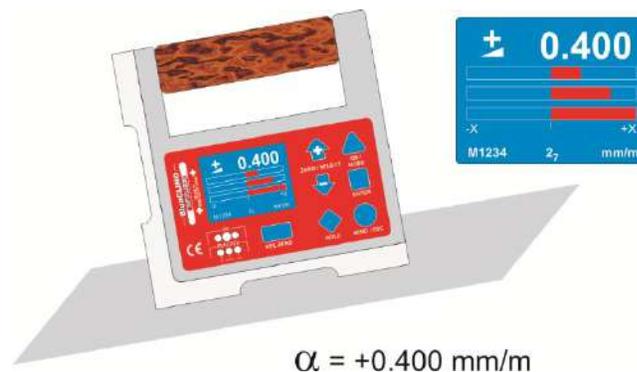
4.5.1 ABSOLUTE MEASUREMENT

As a factory setting, the wylerLEVEL is programmed for absolute measurement (default setting).

If this is not the case, select the function [Absolute]. After this function has been confirmed with the **ENTER**  key, the device is ready for measurement in ABSOLUTE mode.

The measuring value indicated corresponds to the

Value of the wylerLEVEL minus ZERO - OFFSET



4.5.2 RELATIVE MEASUREMENT / REL ZERO

Important preliminary remark:

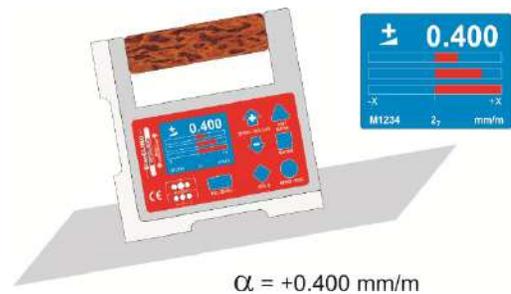
The REL ZERO OFFSET determined in the case of a relative measurement is superposed to the ZERO OFFSET, e.g. determined by a reversal measurement.

The REL ZERO OFFSET is stored in the wylerLEVEL, and can be recalled repeatedly. When conducting the next relative measurement, the REL ZERO OFFSET that is displayed is the one that was entered or determined the last time the device was used. The value can either be confirmed, replaced with a new entry, or set to zero.

$$\text{Value displayed} = \text{Value of the device} - \text{ZERO-OFFSET} - \text{REL ZERO OFFSET}$$

Abbreviated procedure with the   key.

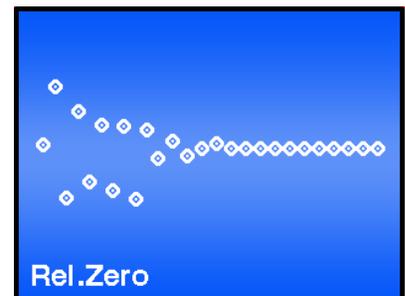
Place the device on the reference plane. The device indicates the value +0.400 mm/m. This corresponds to the absolute inclination of the reference plane.

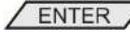


Place the wylerLEVEL in position, and press the   key.

After 15 seconds, the measuring value will automatically be read.

During the measurement, the display shows a graphic depiction of the measurement in progress.

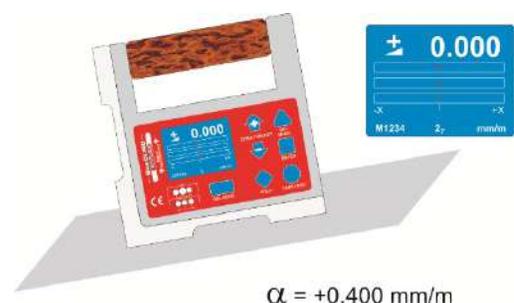


Complete the measurement with the   key, or with the zapper. If no key is pressed, the measurement will be completed after 15 seconds.

The screen now shows the display for the current measurement, taking account of the ZERO OFFSET.

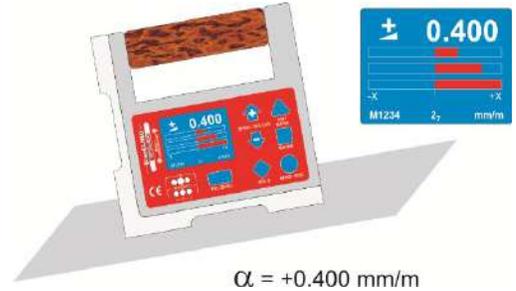


The value displayed is "0" and represents the position of the reference defined.



The full procedure is as follows:

Place the measuring device on the reference plane. The display shows the value +0.400 mm/m. This corresponds to the absolute inclination of the reference plane.



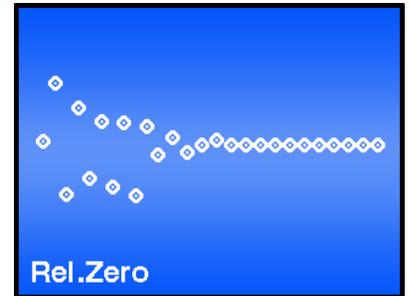
Select the function [REL ZERO] and confirm your choice with .

On the display, the position of the device for the measurement is shown. At this stage, you can use the  key to enable manual entry in order to enter a reference value that you have defined.



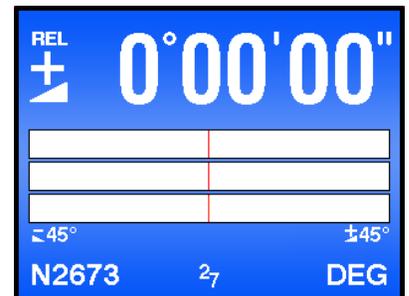
Place the wylerLEVEL in position and press the  key to input the value. Alternatively, the zapper can be used to begin the measurement.

During the measurement, the display shows a graphic depiction of the measurement in progress.

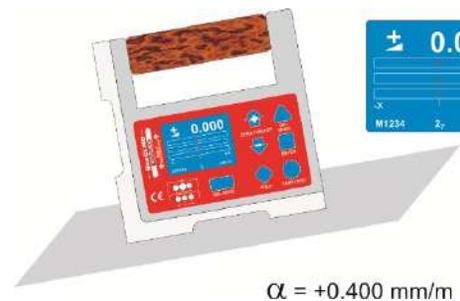


Complete the measurement with the  key, or with the zapper. If no key is pressed, the measurement will be completed after 15 seconds.

The screen now shows the display for the current measurement, taking account of the ZERO OFFSET.



The value displayed is "0" and represents the position of the reference defined.



The values stored in the **ZERO** and/or **Relative Zero** registers can be modified or deleted as follows:

Use the **ON/MODE**  key to select either the function [REL ZERO] or [ABS.ZERO] and confirm your choice with the **ENTER**  key. Press the **ON/MODE**  key again. The saved offset value is now displayed. Press the **ZERO/SELECT**   keys until the desired value is shown. Using the **ON/MODE**  key, the value can be directly set to "0". By pressing the **ENTER**  key, the displayed value is adopted and the procedure is completed. With the **SEND/ESC**  key, the procedure is abandoned without any changes. The wylerLEVEL subsequently returns to Measuring mode.

Use this procedure if you have to set one of these registers to a particular value, e.g. 5°.

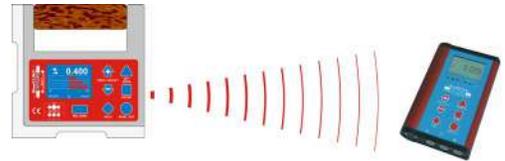
4.6 USING THE DEVICE WITH BLUEMETER SIGMA

In order to be able to use the device with a BlueMETER SIGMA, both devices need to be paired. The procedure is called *joining*. Disconnecting from a connection is called *leaving*. If the device is used with a wylerCONNECT, *joining* and *leaving* is not required.

4.6.1 GROUPING IN WIRELESS MODE / JOIN

A device can be added wirelessly to an existing group via the JOIN function. In doing so, no device can be connected via cable, otherwise a JOIN procedure for cable will be executed. In order to ensure that a device is not already connected with another group, it is advisable to first use the LEAVE function.

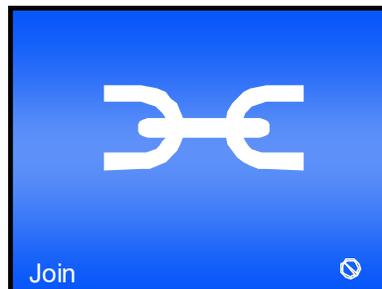
1. On the wylerLEVEL, select the JOIN menu using the **ON/MODE**  key. Confirm with the **ENTER**  key. The second device must also be put in JOIN mode.



2. **Search procedure**

The two devices search for each other. During the search, the green LEDs on both devices will light continuously. The devices remain in search mode until they have detected each other.

During the grouping procedure the following indicator appears on the display:



Note: If communication conditions are less than ideal, the search process can take several minutes.

3. **Group connection**

As soon as the two devices have detected each other, the search process is terminated. This is indicated on both devices, with their green LEDs blinking rapidly (4-5 times per second). The joining can now

- be activated by pressing the **ENTER**  key on one of the devices
- or
- be abandoned by pressing the **ON/MODE**  key.

Note:

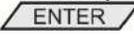
If the OFF LED blinks red, a grouping is not possible. First carry out a LEAVE on the device.

4. The green READY LED briefly blinks as many times as there are devices joined in the measuring group (including the unit you are currently using).

4.6.2 REMOVING A DEVICE FROM A MEASURING GROUP WITH THE LEAVE FUNCTION

Each device can be removed individually from an existing measuring group.

LEAVE PROCEDURE

1. On the wylerLEVEL, use the   key to select the **LEAVE** menu. Confirm with the   key.
2. The wylerLEVEL is removed from the group, and is no longer accessible via wireless data transmission.

4.7 QUICK CALIBRATION (POSSIBLE ONLY WITH DOWEL PIN CALIBRATION)

The wylerLEVEL is equipped with an integrated calibration setup for a quick calibration procedure that allows the device to be calibrated without requiring a complex procedure. On the back of the wylerLEVEL there are precisely milled holes designed to hold dowel pins as calibration aids. These pins are part of the delivery and can be inserted into the holes. With the quick calculation method, the values at +/- 45° as well as the exact zero value can be adjusted. In this way, the device can be calibrated to achieve sufficient precision.

Note: Before a quick calibration can be performed, the local gravity must be set. To do this, use the function [Gravity], which is described in section 5.8. In addition, the relative offset must be turned off. During quick calibration, the absolute offset will be set to zero. Therefore, an absolute ZERO correction must be conducted using a reversal measurement.

The calibration procedure is as follows:

- 1 Start the device, set the local gravity, and put the wylerLEVEL in the Absolute Measuring mode.

Chapters 4.8 and 3.5.1

- 2 Using the **ON/MODE**  key, select the function [QUICK CALIB] and confirm with **ENTER** .

Set correction at +45°.

Insert the accompanying dowel pins in the device so that the calibration value can be read in at +45°. With the dowel pins inserted, place the device laterally on the edge of a measuring and control plate.

- 3 To initiate the calibration, press the **ENTER**  key and remain still. Alternatively, the calibration can be conducted with the use of a zapper.

Using the **ON/MODE**  key, you can now open manual entry in order to input a specific correction value.

The correction value at +45° is determined.

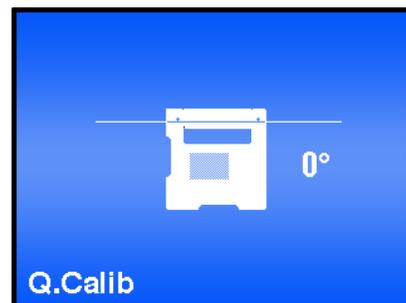
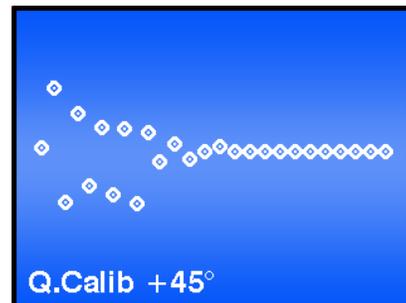


Correction of the value at 0°.

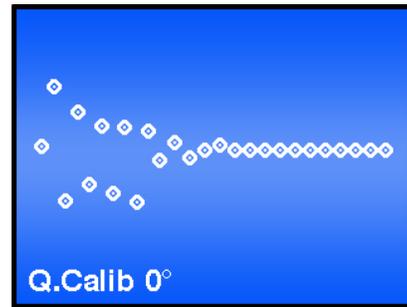
Insert the accompanying dowel pins at the top of the device in such a way that the calibration value at 0° can be read in.

- 4 To initiate the calibration, press the **ENTER**  key, and remain still. Alternatively, the calibration can be conducted with the use of a zapper.

Using the **ON/MODE**  key, you can now open manual entry in order to input a specific correction value.



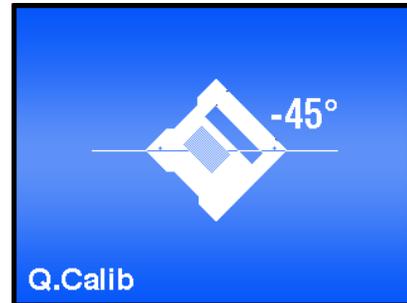
The correction value 0° is determined.



Set correction at -45° .

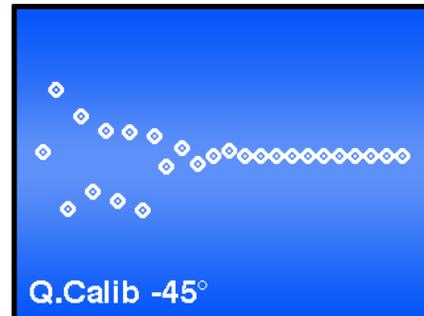
Insert the accompanying dowel pins in the device so that the calibration value can be read in at -45° .

- 5 To initiate the calibration, press the  key, and remain still. Alternatively, the calibration can be conducted with the use of a zapper.



Using the  key, you can now open manual entry in order to input a specific correction value.

The correction value -45° is determined.



- 6 After a successful calibration the device restarts.

- 7 Finally, the correction of the zero point (absolute ZERO) must be determined via a reversal measurement.

- 8 The wylerLEVEL has now been recalibrated and can be used for further measurements.

4.8 TEACH-IN OF THE WYLERTRIGGER

In order to eliminate interference of the zapper signals when several measuring groups are active, the IR trigger can be assigned to a specific measuring group by applying the TEACH-IN function.

TEACH-IN procedure:

- The measuring or display device must be turned on.
- Press and hold the **ZERO/SELECT**  key on the measuring or display device
- Aim the IR zapper toward the measuring or display device
- Using the IR zapper, hold the **trigger** depressed until the two red IR LEDs illuminate

Repeat this procedure on all the measuring and display devices that will be using the same IR triggering. This procedure is Wyler TRIGGER carried out on our devices prior to them leaving the factory.

5. OPTIONS

The options serve as input for the basic settings of the measuring device. Access to the options can be protected by means of a PIN code in order to prevent unauthorized adjustments.

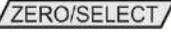
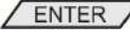
The following options are available:

- **Set PIN Code**
This option allows you to prevent unauthorized changes to your options by means of a PIN code.
- **Display Settings**
This option allows you to make changes to basic settings such as brightness and color scheme.
- **Logscale**
Use this option to switch logarithmic scaling on or off.
- **Programmable Keys**
Using this option allows you to switch the scale functions of the <ZERO/SELECT> keys and the function of the <REL:ZERO> key on or off.
- **Functions ON/OFF**
Use this option to switch individual functions on or off. Functions that have been switched off no longer appear in the main menu.
- **Hide Disabled Functions ON/OFF**
If this option is active, functions that have been switched off will not be displayed.
- **Radio ON/OFF**
Using this option, wireless communication can be activated or deactivated.
- **Gravitation**
Using this option gravitation correction can be switched on and off, and the local gravitational force can be entered.
- **Version**
This option displays the firmware version.
- **Reset Quick Calibration**
The values obtained during quick-calibration are overwritten with the factory-set values (only with the Quick Calibration option).
- **Factory Reset**
A full Factory Reset returns the device to its ex-works state. All customized settings are lost.
- **Function Check**
A function check of the device is conducted.

5.1 SETTING PIN CODE

In order to protect the settings on the wylerLEVEL against unauthorized changes, you can set an access control PIN code.

Using the   key, select the menu item [Options] and confirm your choice with  . Now select [Set Pin Code] and confirm with  .

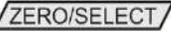
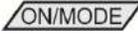
Use the    keys to switch the blocking of options to ON, and confirm with the   key.

You can now enter your PIN code. The value can be adjusted using the    keys. Pressing the   key causes the default number 00000 to be adopted. Confirm your input with the   key.



The measuring device returns to Measuring mode.

If the Pin Code option is active, the code must be entered before the list of options will be displayed:

Entering the PIN code: The value can be adjusted using the    keys. Pressing the   key causes the default value of 00000 to be adopted. Confirm your input with the   key.



From the factory, the Pin Code is deactivated. The default value is 00000.

5.2 DISPLAY SETTINGS

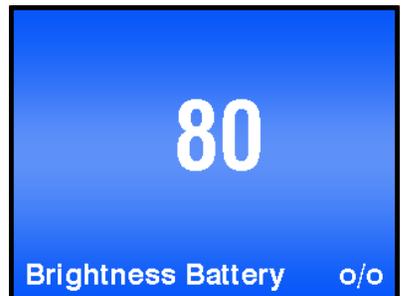
The brightness of the display, including the brightness in power management mode, and the color scheme can all be adjusted. The wylerLEVEL runs in power management mode if the device is not connected to an external power supply, and the device is operating on battery power. Brightness is expressed as a percentage of maximum brightness. Since reduced brightness requires substantially less power, in power management mode, a brightness of 50% is recommended in power management mode. In the color scheme you can select the background color. The text color changes between black and white, depending on the brightness of the display. The default background is blue.

Using the **ON/MODE**  key, select the menu item [Options] and confirm the selection with **ENTER** . Now select [Display Settings] and confirm with **ENTER** .

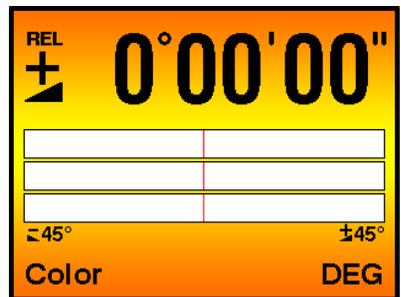


Using the **ZERO/SELECT**   keys, select the Display Settings that you want to change and confirm your choice with the **ENTER**  key.

In brightness adjustments, you can increase or reduce the brightness using the **ZERO/SELECT**   keys. The available range is from 10% to 100%. Pressing the **ON/MODE**  key results in the default value of 50% being adopted. Confirm the new value with the **ENTER**  key.



In the color adjustments, you can select the preferred background color by using the **ZERO/SELECT**   keys. Confirm the choice with the **ENTER**  key.



The measuring device returns to Measuring mode.

5.3 LOGSCALE

Use this option to switch logarithmic scaling on or off.

Using the **ON/MODE**  key, select the menu item [Options] and confirm your choice with **ENTER** . Now select [Logscale] and confirm with **ENTER** .

Switch logarithmic scaling on or off with the **ZERO/SELECT**   keys confirm with **ENTER** .



The measuring device returns to Measuring mode.

5.4 PROGRAMMABLE KEYS

The function of the **ZERO/SELECT**   keys and the **RELZERO**  key can be switched on or off.

Using the **ON/MODE**  key, select the menu item [Options] and confirm your choice with **ENTER** . Now select [Programmable Keys] and confirm with **ENTER** .

Using the **ZERO/SELECT**   keys, select the key that you wish to activate or deactivate and confirm your choice with the **ENTER**  key.

You can activate or deactivate the selected key by using the **ZERO/SELECT**   keys. The display indicates the selected state – ON or OFF. Confirm with the **ENTER**  key.

The list of programmable keys is shown again. To switch another key on or off, proceed as described above. To save the settings, select "Ok" and confirm your choice with the **ENTER**  key.

The measuring device returns to Measuring mode.



5.5 FUNCTIONS ON/OFF

The built-in menu functions can be switched on or off. Thus, the menu displayed can be adjusted to meet the needs of the user.

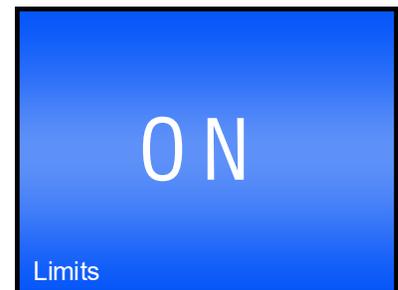
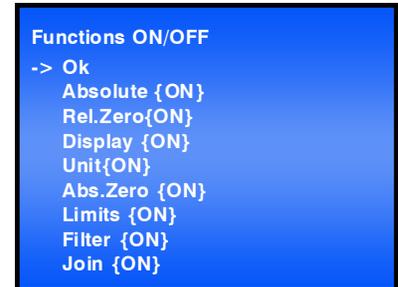
Using the  key, select the menu item [Options] and confirm your choice with . Select [Functions ON/OFF] and confirm with .

Using the  keys, select the function that you wish to switch on or off and confirm your choice with the  key.

With the  keys, you can switch the selection function on or off. The display indicates the state that you have selected. Confirm with the  key.

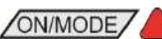
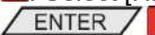
The list of switchable functions appears again. To switch another function on or off, proceed as described above. To save the settings, select "Ok" and confirm your choice with the  key.

The measuring device returns to Measuring mode.



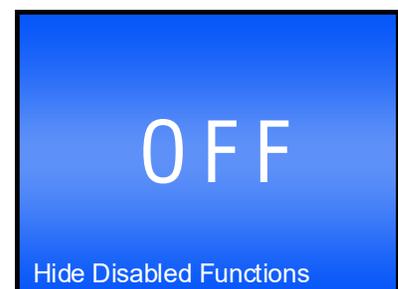
5.6 HIDE DISABLED FUNCTIONS ON/OFF

This setting allows you to hide functions that have been disabled. The list of functions shows only those functions that are enabled. If this setting is not active, functions that have been disabled appear in the list of functions, but in gray font.

Using the  key, select the menu item [Options] and confirm your choice with . Select [Hide Disabled Functions ON/OFF] and confirm with .

Switch the setting "Hide disabled Functions ON or OFF with the  keys and confirm with .

The measuring device returns to Measuring mode.



5.7 RADIO ON/OFF

This adjustment allows you to switch wireless data transmission on or off.

Using the **ON/MODE**  key, select the menu item [Options] and confirm your choice with **ENTER** . Select [Radio ON/OFF] and confirm with **ENTER** .

Switch wireless transmission ON or OFF using the **ZERO/SELECT**   keys and confirm with the **ENTER**  key,

The measuring device returns to Measuring mode.



5.8 GRAVITATION

The inclination displayed by the wylerLEVEL is based on gravitational force. However, this force is not consistent around the globe, rather it varies with latitude and altitude above sea level. Furthermore, variations in the density of the lithosphere cause additional local deviations.

The table below lists the values of gravity in a number of cities:

Amsterdam	9.813	Istanbul	9.808	Paris	9.809
Athens	9.807	Havana	9.788	Rio de Janeiro	9.788
Auckland, NZ	9.799	Helsinki	9.819	Rome	9.803
Bangkok	9.783	Kuwait	9.793	San Francisco	9.800
Brussels	9.811	Lisbon	9.801	Singapore	9.781
Buenos Aires	9.797	London	9.812	Stockholm	9.818
Calcutta	9.788	Los Angeles	9.796	Sydney	9.797
Cape Town	9.796	Madrid	9.800	Taipei	9.790
Chicago	9.803	Manila	9.784	Tokyo	9.798
Copenhagen	9.815	Mexico City	9.779	Vancouver, BC	9.809
Nicosia	9.797	New York	9.802	Washington, DC	9.801
Jakarta	9.781	Oslo	9.819	Wellington, NZ	9.803
Frankfurt	9.810	Ottawa	9.806	Zurich	9.807

The wylerLEVEL has been calibrated at the WYLER AG head office. The inclinations displayed are exact only in that location. In other locations, the displayed value needs to be corrected. i.e. If the wylerLEVEL is set up to correct for the local gravity, the measured inclination will be corrected accordingly prior to being displayed.

The correction results from the following formula:

$$\alpha_{eff} = \arcsin\left(\frac{g_c}{g_m} \sin(\alpha_m)\right)$$

whereby

g_c	gravity at the place of calibration
α_m	displayed angle at place of measurement
g_m	gravity at the location of measurement
α_{eff}	effective angle

In order to switch gravitational correction ON or OFF, proceed as follows:

Using the **ON/MODE**  key, select the menu item [Options] and confirm your choice with **ENTER** . Select [Gravity] and confirm with **ENTER** .

Switch gravitational correction on by using the **ZERO/SELECT**   keys and confirm with **ENTER** .



Now you need to enter the value of the local gravity. The value can be set using the **ZERO/SELECT**   keys. Using the **ON/MODE**  key causes the standard value of 9.807 m/s² to be adopted. Use the **ENTER**  key to confirm your input.



The measuring device returns to Measuring mode.

5.9 FIRMWARE VERSION

This option causes the installed firmware version and configuration to be displayed

Using the **ON/MODE**  key, select the menu item [Options] and confirm your choice with **ENTER** . Select [Version] and confirm with **ENTER** .

The following information is displayed:

- Name, type and measuring range of the device
- Serial number of the device
- Firmware version
- Bluetooth module version

This information screen closes after 10 seconds, or once the **ENTER**  key is pressed.

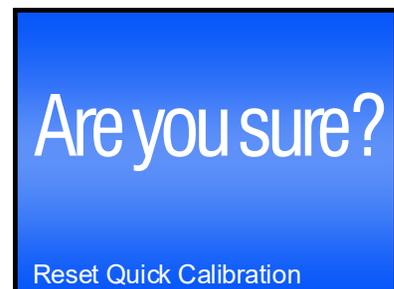
The measuring device returns to Measuring mode.

5.10 RESET QUICK CALIBRATION (POSSIBLE ONLY WITH DOWEL PIN CALIBRATION)

The quick-calibration data is deleted and replaced by the factory default values.

Using the **ON/MODE**  key, select the menu item [Options] and confirm your selection with **ENTER** . Select [Reset Quick Calibration] and confirm with **ENTER** .

To prevent an accidental reset, you are prompted with the question "Are you sure?" Press the **ENTER**  key if you really wish to delete the quick calibration data. After 10 seconds, or if the **SEND/ESC**  key is pressed, the measuring device returns to Measuring mode.

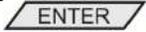


The measuring device returns to Measuring mode.

5.11 FACTORY RESET

Factory Reset returns all settings to the same state they left the factory with.
The wylerLEVEL is set to the following standard configuration:

Standard values:	
Measuring mode:	Absolute
Measuring unit:	DEC xx°xx'xx"
Relative base:	1000 mm, 10"
Absolute Zero point (ZERO-OFFSET):	0
Relative Zero point (REL ZERO-OFFSET):	0
Filter	No. 3
Display	Spirit level
Limits	OFF;
Upper limit	0
Lower limit	0
Scale	Maximum range
Join	Not joined
Pin code	OFF; code = 00000
Display settings	Color white; Saturation 100%; Saturation Power Save 50%;
Logscale	OFF
Programmable keys	All keys enabled;
Functions	All functions enabled;
Hide disabled functions	OFF
Radio	ON, if available
Gravitation	OFF; value = 9.807 kg·m/s ²

Using the  key, select the menu item [Options] and confirm your choice with the  key. Select [Factory Reset] and confirm with .

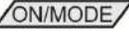
To prevent an accidental reset, you are prompted with the question "Are you sure?" Press the  key if you really wish to delete the quick calibration data. After 10 seconds, or if the  key is pressed, the measuring device returns to Measuring mode.

The measuring device returns to Measuring mode.



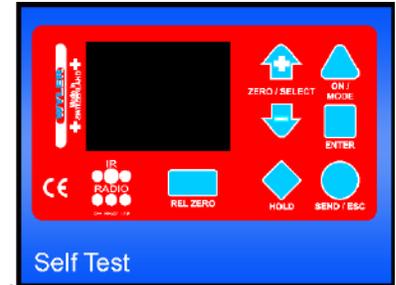
5.12 FUNCTION CHECK

When the device starts, a system test is conducted, checking the most important functions. In addition to this test, the functioning of the keys and LEDs can be checked.

Using the  key, select the menu item [Options] and confirm your choice with . Select [Self-Test] and confirm with .

The display will show an image of the wylrLEVEL, including the keys and LEDs. If a key is pressed or the wylrTRIGGER / BlueZAPPER is used, both the real LEDs those shown on the display will light. Additionally, the key that was pressed will be marked on the display. Each key will create an individual pattern. In the course of this, the real LEDs and those on the display must be identical. If this is not the case, either the key or an LED is defective.

After 10 seconds, if no key is activated the device leaves function check mode.



The measuring device returns to Measuring mode.

6. APPENDIX

6.1 ERROR MESSAGES

When the wylerLEVEL starts, it conducts a function test. If an error is detected, the device **must be returned to the dealer**. Proper functioning cannot be guaranteed. The following error messages can occur:

- Display blinks mottled gray: Program memory is defective
- Display blinks mottled gray twice Display error

- **ERROR 1** General device error
- **ERROR 2** Calibration data unavailable
- **ERROR 3** Sensor not detected
- **ERROR 4** Bluetooth not detected
- **ERROR 5** Faulty flash memory
- **ERROR 6** Faulty EEPROM

6.1.1 BATTERIES

As end user, you are obligated under law (battery ordinance) to return all used batteries; disposal as household waste is prohibited.

Batteries containing toxic substances are labelled with accompanying symbols and indicating the prohibition of disposal as household waste.

You can return your used batteries free of charge at the collection center in your community, at our affiliates, or wherever batteries are sold. In doing so, you are fulfilling your legal obligations and helping to protect the environment.

6.1.2 DIRECTIVE ON WASTE ELECTRICAL & ELECTRONIC EQUIPMENT (WEEE)

	<p>Electrical equipment marked with this symbol may not be disposed of in European public disposal systems after 12 August of 2005. In conformity with European local and national regulations (EU Directive 2002/96/EC), European electrical equipment users must now return old or end-of life equipment to the Producer for disposal at no charge to the user.</p> <p>Note: <i>For return for recycling, please contact the equipment producer or supplier for instructions on how to return end-of-life equipment for proper disposal.</i></p> <p>Important document. Retain with product records.</p>
<p>GERMAN</p> <p>Elektrogeräte, die mit diesem Symbol gekennzeichnet sind, dürfen in Europa nach dem 12. August 2005 nicht mehr über die öffentliche Abfallentsorgung entsorgt werden. In Übereinstimmung mit lokalen und nationalen europäischen Bestimmungen (EU-Richtlinie 2002/96/EC), müssen Benutzer von Elektrogeräten in Europa ab diesem Zeitpunkt alte bzw. zu verschrottende Geräte zur Entsorgung kostenfrei an den Hersteller zurückgeben.</p> <p>Hinweis: <i>Bitte wenden Sie sich an den Hersteller bzw. an den Händler, von dem Sie das Gerät bezogen haben, um Informationen zur Rückgabe des Altgeräts zur ordnungsgemäßen Entsorgung zu erhalten.</i></p> <p>Wichtige Informationen. Bitte zusammen mit den Produktinformationen aufbewahren.</p>	
<p>FRENCH</p> <p>A partir du 12 août 2005, il est interdit de mettre au rebut le matériel électrique marqué de ce symbole par les voies habituelles de déchetterie publique. Conformément à la réglementation européenne (directive UE 2002/96/EC), les utilisateurs de matériel électrique en Europe doivent désormais retourner le matériel usé ou périmé au fabricant pour élimination, sans frais pour l'utilisateur.</p> <p>Remarque : <i>Veillez vous adresser au fabricant ou au fournisseur du matériel pour les instructions de retour du matériel usé ou périmé aux fins d'élimination conforme.</i></p> <p>Ce document est important. Conservez-le dans le dossier du produit.</p>	
<p>ITALIAN</p> <p>Le apparecchiature elettriche con apposto questo simbolo non possono essere smaltite nelle discariche pubbliche europee successivamente al 12 agosto 2005. In conformità alle normative europee locali e nazionali (Direttiva UE 2002/96/EC), gli utilizzatori europei di apparecchiature elettriche devono restituire al produttore le apparecchiature vecchie o a fine vita per lo smaltimento senza alcun costo a carico dell'utilizzatore.</p> <p>Nota: <i>Per conoscere le modalità di restituzione delle apparecchiature a fine vita da riciclare, contattare il produttore o il fornitore dell'apparecchiatura per un corretto smaltimento.</i></p> <p>Documento importante. Conservare con la documentazione del prodotto.</p>	
<p>DANISH</p> <p>Elektriske apparater, der er mærket med dette symbol, må ikke bortskaffes i europæiske offentlige affaldssystemer efter den 12. august 2005. I henhold til europæiske lokale og nationale regler (EU-direktiv 2002/96/EF) skal europæiske brugere af elektriske apparater nu returnere gamle eller udtjente apparater til producenten med henblik på bortskaffelse uden omkostninger for brugeren.</p> <p>Bemærk: <i>I forbindelse med returnering til genbrug skal du kontakte producenten eller leverandøren af apparatet for at få instruktioner om, hvordan udtjente apparater bortskaffes korrekt.</i></p> <p>Vigtigt dokument. Opbevares sammen med produktdokumenterne.</p>	

SWEDISH

Elektronikutrustning som är märkt med denna symbol kanske inte kan lämnas in på europeiska offentliga sopstationer efter 2005-08-12. Enligt europeiska lokala och nationella föreskrifter (EU-direktiv 2002/96/EC) måste användare av elektronikutrustning i Europa nu återlämna gammal eller utrangerad utrustning till tillverkaren för kassering utan kostnad för användaren.

Obs! Om du ska återlämna utrustning för återvinning ska du kontakta tillverkaren av utrustningen eller återförsäljaren för att få anvisningar om hur du återlämnar kasserad utrustning för att den ska bortskaffas på rätt sätt.

Viktigt dokument. Spara tillsammans med dina produktbeskrivningar.

SPANISH

A partir del 12 de agosto de 2005, los equipos eléctricos que lleven este símbolo no deberán ser desechados en los puntos limpios europeos. De conformidad con las normativas europeas locales y nacionales (Directiva de la UE 2002/96/EC), a partir de esa fecha, los usuarios europeos de equipos eléctricos deberán devolver los equipos usados u obsoletos al fabricante de los mismos para su reciclado, sin coste alguno para el usuario.

Nota: *Sírvase ponerse en contacto con el fabricante o proveedor de los equipos para solicitar instrucciones sobre cómo devolver los equipos obsoletos para su correcto reciclado.*

Documento importante. Guardar junto con los registros de los equipos.

DUTCH

Elektrische apparatuur die is voorzien van dit symbool mag na 12 augustus 2005 niet meer worden afgevoerd naar Europese openbare afvalsystemen. Conform Europese lokale en nationale wetgeving (EU-richtlijn 2002/96/EC) dienen gebruikers van elektrische apparaten voortaan hun oude of afgedankte apparatuur kosteloos voor recycling of vernietiging naar de producent terug te brengen.

Nota: *Als u apparatuur voor recycling terugbrengt, moet u contact opnemen met de producent of leverancier voor instructies voor het terugbrengen van de afgedankte apparatuur voor een juiste verwerking.*

Belangrijk document. Bewaar het bij de productpapieren.

POLISH

Sprzęt elektryczny oznaczony takim symbolem nie może być likwidowany w europejskich systemach utylizacji po dniu 12 sierpnia 2005. Zgodnie z europejskimi, lokalnymi i państwowymi przepisami prawa (Dyrektywa Unii Europejskiej 2002/96/EC), użytkownicy sprzętu elektrycznego w Europie muszą obecnie przekazywać Producentowi stary sprzęt lub sprzęt po okresie użytkowania do bezpłatnej utylizacji.

Uwaga: *Aby przekazać sprzęt do recyklingu, należy zwrócić się do producenta lub dostawcy sprzętu w celu uzyskania instrukcji dotyczących procedur przekazywania do utylizacji sprzętu po okresie użytkowania.*

Ważny dokument. Zachować z dokumentacją produktu.

PORTUGUESE

Qualquer equipamento eléctrico que ostente este símbolo não poderá ser eliminado através dos sistemas públicos europeus de tratamento de resíduos sólidos a partir de 12 de Agosto de 2005. De acordo com as normas locais e europeias (Directiva Europeia 2002/96/EC), os utilizadores europeus de equipamentos eléctricos deverão agora devolver os seus equipamentos velhos ou em fim de vida ao produtor para o respectivo tratamento sem quaisquer custos para o utilizador.

Nota: *No que toca à devolução para reciclagem, por favor, contacte o produtor ou fornecedor do equipamento para instruções de devolução de equipamento em fim de vida para a sua correcta eliminação.*

Documento importante. Mantenha junto dos registos do produto.

6.2 DECLARATIONS OF CONFORMITY AND APPROVALS

6.2.1 MANUFACTURER'S DECLARATION OF CONFORMITY (DoC)

We,

Name: WYLER AG
Im Hoelderli
CH-8405 Winterthur / Switzerland
Tel: +41 52 233 66 66
Fax: +41 52 233 20 53
Homepage: <http://www.wylerag.com>
E-Mail: wyler@wylerag.com

declare under our sole responsibility, that the product:

wylerLEVEL Inclination Measuring Instrument with
Bluetooth ® wireless technology,

WYLER Art.No: **018F** _ _ _ _ _

The letter "F" indicates: with integrated Bluetooth module.

to which this declaration relates, is in conformity with the essential requirements, the relevant requirements of the R&TTE Directive 1999/5/EC, and the EMC Directive 2004/108/EC (15.12.2004).

The product complies with the following standards and other normative documents:

Bluetooth Module 2.4GHz: details see below under part F2

General EMC Requirements: EN 61326-1 for measurement, control & laboratory
Generic standards EMC: EN 61000-6-3 Emission, residential, commercial &
light-industrial environments

CISPR 11 (EN55011) Radiation (emission),
including FCC Part 15 Digital Devices

Generic standards EMC: EN 61000-6-2 Immunity for industrial environments
EN 61000-4-3 Immunity, additional
EN 61000-4-2/ -4/ -5/ -6/ -11 Immunity, additional

Data Transmission Equipment, 2.4GHz, Wideband transmission systems, ERM:
EN 300328 frequency & spurious emissions
EN 301489-1 Basic standards for EMC & ERM
EN 301489-17 "

Safeties: external Power Supply +24 Volt from WYLER AG,
otherwise it must comply with **EN 61010-1** !

For information: On the basis of this DoC, the products will bear the following mark:



Place & Date of issue:
CH-Winterthur, 01.08.2010

Signed by the manufacturer:
Mr. H. E. Hinnen

Title: Managing Director Engineering / R&D

6.2.2 BLUETOOTH MODULE MANUFACTURER'S DECLARATION OF CONFORMITY

The wylerLEVEL is equipped with OEM Serial Port Adapter 332i with Bluetooth ® wireless technology

Abstract from the connectBlue Datasheet "**OEM SERIAL PORT ADAPTER™**"

cB-OEMSPA312 / 332, cB-0902

Electrical & Mechanical Datasheet:

Release 2009-12; Document version: 1.13; Document number: cB Product-0503-01

Product: cB-OEMSPA332i / with internal antenna
Bluetooth Type: Class 1
Bluetooth Specification: 2.0
Regulatory ID: cB-0902-0202
FCC - ID: PVH090202L
IC - ID: 5325A-090202L



We, **connectBlue AB**, of
Norra Vallgatan 64 3V
SE-211 22 Malmö, Sweden

declare under our sole responsibility that our products:

cB-OEMSPA312i/x (cB-0069, cB-0070, cB-0071, cB-0072, cB-0073, cB-0074, cB-0075, cB-0076),
cB-OEMSPA332i/x (cB-0077, cB-0078, cB-0079, cB-0080, cB-0081, cB-0082, cB-0083, cB-0084),
OEM Module Adapter III (cB-0068).

to which this declaration relates, conforms to the following product specifications:

R&TTE Directive 1999/5/EC

EN 300 328 V1.7.1 (2006-10)

EMC

EN 301 489-1 V1.8.1 (2008-04)

EN 301 489-17 V1.3.2 (2008-04)

EN 61000-6-2 (2005)

Safety Compliance

EN 60950-1:2006 and/or IEC 60950-1:2005 (2nd Edition)

Medical Electrical Equipment

IEC 60601-1-2 (2001)

2009-12-08 Malmö, Sweden

Mats Andersson

CTO of connectBlue AB

If a cB-OEMSPA332i/x is used within EU a notification must be made to each of the national authorities responsible for radio spectrum management of the intention to place radio equipment that uses frequency bands whose use is not harmonized throughout the EU, on its national market.

More information at: <http://europa.eu.int/comm/enterprise/rtte/gener.htm>



wylerLEVEL instrument is equipped with OEM Serial Port Adapter 332i with Bluetooth ® wireless technology

Manufacturer: connectBlue AB
Norra Vallgatan 64
SE-211 22 Malmö, Sweden



Product Name: OEM SPA332i, with internal antenna (SMD-Type)
OEM Module ID: cB-0902-0202
Type : Bluetooth -Class 1
RF-Output Power: + 16.9dBm (49mW)
Antenna: integral (SMD)
Qualified Bluetooth Product, with Bluetooth ID: B011309
Type Approval: R&TTE (Europe)/ FCC/CFR 47 part 15 unlicensed modular transmitter approval
IC (Industry Canada)

6.2.3 FCC COMPLIANCE

FCC Statement for cB-0902-0202

This device contains
FCC ID: **PVH090202L**
IC: **5325A-0902021**

In accordance with 47 CFR § 15.19 the end product shall bear the following statement in a conspicuous location on the device:

“This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.”

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or televisions reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

IC Statement for cB-0902-0202

Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.”

Any changes at the integrated antenna are strictly forbidden.

6.2.4 COUNTRY SPECIFIC INFORMATION FOR BLUETOOTH RADIO LINK (>10MW RF-POWER)

List of European Countries without Restrictions (ISM-Band; Class 1) :

General	Hereby, Wyler AG, CH-8405 WINTERTHUR, declares that "BlueSYSTEM" and its components (2.400 - 2.4835 GHz) are in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
GB	Hereby, Wyler AG, CH-8405 WINTERTHUR, declares that "BlueSYSTEM" and its components (2.400 - 2.4835 GHz) are in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
NL	Hierbij verklaart Wyler AG, CH-8405 WINTERTHUR dat "BlueSYSTEM" en zijn componenten (2.400 - 2.4835 GHz) in overeenstemming zijn met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
SE	Härmed intygar Wyler AG, CH-8405 WINTERTHUR att "BlueSYSTEM" och deras komponenter (2.400 - 2.4835 GHz) stämmer överens med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
DE	Hiermit erklärt Wyler AG, CH-8405 WINTERTHUR, dass sich „BlueSYSTEM“ und seine Geräte (2.400 - 2.4835 GHz) in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befinden.
CZ	Tímto firma Wyler AG, CH-8405 Winterthur, deklaruje, že " BlueSYSTEM" a jeho součásti, jsou v souladu s nezbytnými požadavky a s ostatními příslušnými podmínkami směrnice 1999/5/EC.
CH	Hiermit erklärt Wyler AG, CH-8405 WINTERTHUR, dass sich „BlueSYSTEM“ und seine Geräte (2.400 - 2.4835 GHz) in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befinden.
NO	Herved erklærer Wyler AG, CH-8405 WINTERTHUR, at „BlueSYSTEM“ og deres komponenter (2.400 - 2.4835 GHz) stemmer overens med de vesentlige egenskapskrav og øvrige relevante bestemmelser som fremgår av direktiv 1999/5/EG.



List of European Countries with Restrictions (ISM-Band, Class 1):

FR	<p>Par la présente Wyler AG, CH-8405 WINTERTOURE déclare que les instruments "BlueSYSTEM et ses composants (2.400 - 2.4835 GHz) sont conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.</p> <p>Attention: En France (07/2005) les contraintes géographiques sont a respecter : L'utilisation de l'équipement bluetooth (>10mW) à l'extérieur des bâtiments sur le domaine public n'est pas possible</p> <p>Attention: In France (07/2005) the geographic restrictions must be respected. The use of Bluetooth™ equipment (>10 mW) outside of buildings in the public domain is not possible.</p>
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List of Countries with Notification:

JPN	<p>Hereby, Obishi Co., Ltd, JP-940-1164 Nagaoka-City Niigata, declares that "BlueSYSTEM" and its components (2.400 - 2.4835 GHz) are in compliance with the essential requirements and other relevant provisions of ARIB Standard – T66, Version 2.1 .</p>
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List of Countries with Pending Notification:

- **Russia**
- **China**
- **Taiwan**
- **South Korea**
- **India**
- **Thailand**

6.3 TECHNICAL DATA

Data sheets for the respective devices can be downloaded from the homepage: <http://wylereg.com>.

6.4 SERVICE AND MAINTENANCE AGREEMENTS

6.4.1 REPAIR OF MEASURING AND DISPLAY DEVICES

Normally any devices 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 of the customer.

Express Repair Service, ERS

Many customers cannot do without their devices for longer periods of time, as they are needed on a daily basis. For these customers, WYLER AG has created a new service called "Express Repair Service, ERS." Employing this service, the shipping time from the user to WYLER AG and back, and thus the entire turnaround time, can be greatly reduced.



In simplified terms, the model works like this:

- The customer submits the repair request to the local WYLER partner in his/her country
- The WYLER partner informs the customer of the option of using the ERS service, outlining the advantages and consequences of this service, such as:
 - Reduced turnaround time
 - Required acceptance to repair without quote up to 65% of the price for a new device
 - Suitable packing for air transport
 - Cost of the ERS
- If the customer elects to use the ERS, the customer informs the local WYLER partner or WYLER AG directly providing the necessary information.
- The customer receives all information and instructions necessary for smooth handling of the shipping. The customer only has to pack the product suitably, fill in a form for the **TNT courier service**, and notify the local TNT office when ready for pick-up. Everything else happens automatically.
- Products reaching WYLER AG under this service will be with **top priority**, and the device will be returned using the same carrier.
- Invoicing will be handled through the WYLER partner in your country.

Make use of this service in order to have your WYLER device back at your disposal as soon as possible. If you have any questions, please contact WYLER AG or your local distributor. We will be glad to help you use the ERS successfully.

6.4.2 SERVICE AND MAINTENANCE AGREEMENTS

Measuring systems are becoming more and more complex, and have to be continuously monitored with respect to quality and reliability. For this purpose, WYLER AG offers the option of a **SERVICE AGREEMENT** with the purchase of new devices.

Such a **SERVICE AGREEMENT** offers customers the following services:

- **Complete inspection** of the device/system, including any required re-adjustment every two years.
- Delivery includes an **internationally recognized Calibration Certificate SCS** for the entire system, with declaration of the relevant measuring information. The respective measuring results and their traceability are a constituent part of the certificate.
- **Top priority handling** if a repair is required (actual repair work is not a part of the service agreement, and will be quoted separately).
- **Retrofitting** with technical enhancements.
- **Costs of packing and shipping** of the devices from the customer to WYLER and back, either directly or via the WYLER distributor.
- **Extension of the warranty period to 24 months:** If a maintenance agreement is signed within 6 months of purchasing a new device, the warranty period is extended to 24 months.



Options:

According to the customer's requirements, the re-calibration interval can be shortened (annual re-calibration), or extended (re-calibration every three years).

The following services are **excluded** from all service agreements:

- The contract does not include any repair work. If it is determined during the inspection or re-calibration process that the device requires repairs, such work will be quoted separately to the customer.

We are here to help you maintain the accuracy and smooth operation of your valuable and important device!

We would be pleased to offer you a service agreement adapted to your specific needs.



WYLER AG
Im Holderli
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Switzerland

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