

EN

G 1110

barometer | altimeter



Members of GHM GROUP:

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1 About this documentation

1.1 Foreword

Read this document carefully and familiarise yourself with the operation of the product before you use it. Keep this document ready to hand and in the immediate vicinity of the product so that it is available to the personnel/user for reference at all times in case of doubt.

The product was developed according to the state of the art and fulfils the requirements of the applicable European and national Directives. All corresponding documents are available from the manufacturer.

Only technically qualified persons are permitted to carry out commissioning, operation, maintenance and decommissioning. The qualified personnel must have carefully read and understood the operating manual before beginning any work.

1.2 Purpose of the document

- This document describes the operation of the product.
- It provides important information for operating safely and efficiently with the product.
- In addition to the quick reference guide with all relevant legal and safety content in hard copy, this document is a detailed reference option for the product.

1.3 Legal notices

The liability and warranty of the manufacturer for damages and consequential damages are voided with misuse, disregarding this document, disregarding safety notices, assignment of inadequately qualified technical personnel and arbitrary modifications of the product.

Only carry out the maintenance and service tasks on this product that are described in this documentation. In the process, adhere to the specified steps. For your own safety, only use original spare parts and accessories of the manufacturer. We assume no liability for the use of other products and resulting damage.

This document is entrusted to the recipient for personal use only. Any impermissible transfer, duplication, translation into other languages or excerpts from this operating manual are prohibited.

The manufacturer assumes no liability for print errors.

1.4 Correctness of content

The contents of this document were checked for corrected and are subject to a continuous correction and updating process. This does not rule out potential errors. In the event that errors are discovered or in case of suggestions for improvement, please inform us immediately via the indicated contact information in order to help us make this document even more user-friendly.

1.5 Layout of this document

Description

Each chapter is explained at the beginning in the description.

Prerequisite

All mandatory prerequisites are then listed for each step.

Instruction

Tasks to be carried out by the personnel / user are represented as numbered instructions. Adhere to the sequence of the specified instructions.

Representation

Shows an illustrative instruction or a configuration of the product.

Formula

Some instructions include a formula for a general understanding of a configuration, programming or a setting of the product.

Outcome of an action

Result, consequence or effect of an instruction.

Emphases

In order to simplify legibility and provide a clearer overview, various sections / information are emphasised.

- *Display elements*
- *Mechanical controls*
- **Product functions**
- **Product labels**
- Cross-reference [▶ 4]
- *Foot notes*

1.6 Further information

Software version of the product:

- V1.1 or later

2 Safety

2.1 Explanation of safety symbols



DANGER

This symbol warns of imminent danger, which can result in death, severe bodily injury, or severe property damage in case of non-observance.



CAUTION

This symbol warns of potential dangers or harmful situations, which can cause damage to the device or to the environment in case of non-observance.



NOTE

This symbol indicates processes, which can have a direct influence on operation or can trigger an unforeseen reaction in case of non-observance.

2.2 Safety instructions



NOTE

This product does not belong in children's hands!

2.3 Foreseeable misuse

The fault-free function and operational safety of the product can only be guaranteed if applicable safety precautions and the device-specific safety instructions for this document are observed.

If these notices are disregarded, personal injury or death, as well as property damage can occur.



DANGER

Incorrect area of application!

In order to prevent erratic behaviour of the product, personal injury and property damage, the product must be used exclusively as described in the chapter Description [► 8] in the operating manual.

- The product is not suitable for use in explosion-prone areas!
- The product must not be used for diagnostic or other medical purposes on patients!
- For measurements requiring devices that are subject to authorisation or special approvals, this product is not a substitute for such products and can only be used as an aid in preparatory or comparison measurements!

2.4 Intended use

The G 1110 measures the absolute pressure in the air.

The ambient pressure is measured directly via the integrated sensor. Pressure equalisation between the unit and the environment takes place via a water-impermeable membrane on the front side. Relative measurements can also be conducted with the integrated special function *Null*.

Applications include:

- Barometric measurements (e.g. weather)
- Elevation determination

The device must only be used under the conditions and for the purposes for which it was designed.

It must be handled with care and used according to the technical data (do not throw, strike, etc.). Suitable measures must be used to protect the pressure equalisation opening and be protected from dirt.



NOTE

Complete evacuation see Vacuum measurements [▶ 17].

2.5 Qualified personnel

For commissioning, operation and maintenance, the relevant personnel must have adequate knowledge of the measuring process and the significance of the measurements. This document makes a valuable contribution to this. The instructions in this document must be understood, observed and followed.

In order to avoid any risks arising from interpretation of the measurements in the concrete application, the user must have additional expertise. The user is solely liable for damages/danger resulting from misinterpretation due to inadequate expertise.

3 Description

3.1 Scope of delivery

Please check to ensure the completeness of the product after opening the package. You should find the following components:

- Quick reference guide
- Handheld measuring device, ready for operation, including batteries
- Test protocol



NOTE

Individual components may vary depending on which set you have selected.

3.2 Functional description

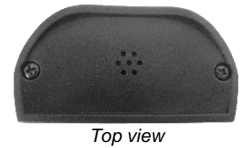
The product offers precision, speed and reliability in a compact, ergonomic housing. Additional impressive features include the waterproof design in accordance with IP 67 and the 3-line illuminated display, which offers a 180° rotated display at the push of a button. A high-quality, position-independent sensor is the key component. The operating elements are used to switch the product on and off and for configuration.

The following basic functions are also provided:

- Min/max value display
- Freeze measurement (hold function)
- Zero function
- Switching of the display to head-up









4 The product at a glance

4.1 The G 1111



4.2 Display elements

Display

 Battery indicator	Evaluation of the battery status
 Unit display	Display of the units or Min/Max/Hold information text
 Main display	Measurement of the current pressure or value for min/max/hold
 Auxiliary display	Measurement of the current pressure in Min/Max/Hold mode
 Bar display	Trend display in 7 steps  falling (strong / medium / slight)  stable  rising (slight / medium / strong)

4.3 Operating elements



On / Off button

Press briefly	Switch on the product Activate / deactivate lighting
Long press	Switch off the product Reject changes in a menu

**Up / Down button**

Press briefly

Display of the min/max value

Change value of the selected parameter

Long press

Reset the min/max value of the current measurement

Both simultaneously

Rotate display, overhead display

**Function key**

Press briefly

Freeze measurement (Hold)

Return to measurement display

Call up next parameter

Long press, 2s

Start menu configuration, $CONF$ appears in the display

Close menu, changes are saved

Long press, 4s

Depending on the selected special function: Activation of the Tare function $nULL$ or rapid measurement with mean value RVr

5 Operation

5.1 Commissioning

5.1.1 Explanation

Description	The product is switched on with the <i>On/Off button</i> . It may be necessary to configure the product after switching on. See Configuration [► 11].													
Prerequisite	– Sufficiently full batteries are inserted in the product.													
Instruction	– Press the <i>On/Off button</i> .													
Outcome of an action	<table border="0"> <tr> <td style="vertical-align: top;"><i>P_{OFF}</i></td> <td style="vertical-align: top;">Automatic shut-off</td> <td style="vertical-align: top;">Automatic shut-off activated. The product is switched off if no buttons have been pressed after the adjusted time</td> </tr> <tr> <td style="vertical-align: top;"><i>P_{r.oF}</i></td> <td style="vertical-align: top;">Offset correction</td> <td style="vertical-align: top;">Calibration of the pressure sensor by the customer</td> </tr> <tr> <td style="vertical-align: top;"><i>P_{r..5L}</i></td> <td style="vertical-align: top;">Gradient correction</td> <td style="vertical-align: top;">Calibration of the pressure sensor by the customer</td> </tr> <tr> <td style="vertical-align: top;"><i>SE_{R.L}</i></td> <td style="vertical-align: top;">Nautical norm correction</td> <td style="vertical-align: top;">Nautical norm correction active. Display air pressure compensated to sea level</td> </tr> </table>		<i>P_{OFF}</i>	Automatic shut-off	Automatic shut-off activated. The product is switched off if no buttons have been pressed after the adjusted time	<i>P_{r.oF}</i>	Offset correction	Calibration of the pressure sensor by the customer	<i>P_{r..5L}</i>	Gradient correction	Calibration of the pressure sensor by the customer	<i>SE_{R.L}</i>	Nautical norm correction	Nautical norm correction active. Display air pressure compensated to sea level
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<i>SE_{R.L}</i>	Nautical norm correction	Nautical norm correction active. Display air pressure compensated to sea level												
	– The product is now ready for measurement.													

5.2 Configuration

5.2.1 Explanation

The following steps describe how to adapt the product for your purposes.



NOTE






There are various configuration parameters available depending on the product version and configuration. These can vary depending on the product version and configuration.

5.2.2 Opening the configuration menu

Description	In order to configure the product, you must first open the Configuration menu. The menu is opened as shown in the illustration.
Prerequisite	– The product is switched on.
Instruction	<ol style="list-style-type: none"> 1. Press the <i>Function key</i> for 2 seconds to open the Configuration menu. 2. <i>CONF</i> appears in the display. Release the <i>Function key</i>. 3. By briefly pressing the <i>Function key</i>, you can scroll through the parameters. Select the parameter you would like to configure. 4. When you have selected the desired parameter, change the parameter to the desired value with the <i>Up button</i> or the <i>Down button</i>.

- The changes are saved after running through the entire **Configuration** menu. **Star** appears in the display. The **Configuration** menu can be exited from any arbitrary parameter by pressing and holding the *Function key* for 2 seconds. The changes made up that point are saved.

Representation

Call up menu	Next parameter	Change value	Save changes	Discard changes
				
2s		Press: Single step Hold: Fast change	2s	2s Product is switched off

Outcome of an action



The **Configuration** menu is closed after the last parameter.

NOTE

If the product is switched off without saving the configuration, the last save value is reproduced on the next start-up of the product.

5.2.3 Configuring parameters of the configuration menu

Description



- The **Configuration** menu is open. See Opening the configuration menu [▶ 11].

Prerequisite

Instruction

- Select the desired parameter you would like to configure.
- Adjust the desired configuration in the selected parameter with the *Up button* or *Down button*.
- The available configuration options are listed for each parameter in the following representation.


Representation

Parameter	Values	Meaning
		
Display unit		
Unit		
	hPa	Barometer in [hPa]
	mbar	Barometer in [mbar]
	PSi	Barometer in [psi]
	mmHg	Barometer in [mmHg]
	m	Altimeter/Elevation display in [m]
	ft	Altimeter/ Elevation display in [feet]

Activatable special functions

Func

null

Function key 

At barometer display: tare function

At altimeter display: setting the altitude

AVR 0:02 / AVR
0:05 / AVR 0:10Rapid measurement with mean value over 2 s / 5 s
/ 10 s activatable

Measuring rate

rPLe

Selection of the measurement speed

SLo

Slow

FRSt

Fast (not recommended for altimeter display)

Nautical norm correction

SEAL

no

Inactive, display measured air pressure directly

YES

Active, display air pressure compensated to sea level

ALt

-500 .. 9000

Height above sea level in m for correction

Trend display

tEnd

oFF

Bar display and tendency value display deactivated

1_5 / 60_5

Time base for bar display 1 second (0.2 hPa / bar level corresponds to ~1.7 m / 5 ft at sea level) or 60 seconds (12 hPa / bar level corresponds to ~100 m / 328 ft at sea level)

1_h / 3_h

Time base for bar display 1 hour (1 hPa / bar level) or 3 hours (3 hPa / bar level) for usual meteorological assessments.

The value will be renew every minute..

Additional information

Lcd.2

oFF

No additional information in auxiliary display

°C

Temperature in °C

°F

Temperature in °F

With activated *tEnd* display additionally:

<i>tEnd</i>	Trend value
<i>°C.tE</i>	Temperature in °C und trend value
<i>°F.tE</i>	Temperature in °F und trend value
<i>°C.P.t</i>	Temperature in °C, trend value and air pressure (only available at altimeter display units)
<i>°F.P.t</i>	Temperature in °F, trend value and air pressure (only available at altimeter display units)

Shut-off time

PoFF

<i>oFF</i>	No automatic shut-off
<i>0:15 0:30 1:00 4:00 12:00</i>	Automatic shut-off after a selected time in hours and minutes, during which no buttons have been pressed

Backlight

L.tE

<i>oFF</i>	Backlight deactivated
<i>0:15 0:30 1:00 4:00</i>	Automatic shut-off of the backlight after a selected time in minutes and seconds, during which no buttons have been pressed
<i>oN</i>	No automatic shut off of the backlight

Factory settings

in.t

<i>no</i>	Use current configuration
<i>YES</i>	Reset product to factory settings. <i>in.t donE</i> appears in the display

Outcome of an action

The changed value is saved and the **Configuration** menu is closed. *Star* appears in the display. If necessary, the product is restarted automatically in order to adopt the changed values.

5.2.4 Open the adjustment menu

Description In order to change sensor calibration, you must first open the **adjustment menu** menu. The menu is opened as shown in the illustration.

Prerequisite – The product is switched off.



NOTE

The adjustment menu cannot be called up for altimeter display units - select a pressure display unit to make the settings.

–

Instruction

1. Press and hold the *Down button*.
2. Press the *On/Off button* to switch on the product.
3. Release the *On/Off button* after 1 second and then the *Down button* in order to call up the **adjustment menu**. The display shows the first parameter.
4. By briefly pressing the *Function key*, you can scroll through the parameters. Select the parameter you would like to configure.
5. When you have selected the desired parameter, change the parameter to the desired value with the *Up button* or the *Down button*.
6. The changes are saved after running through the entire **adjustment menu**. *Star* appears in the display. The **adjustment menu** can be exited from any arbitrary parameter by pressing and holding the *Function key* for 2 seconds. The changes made up that point are saved.

Representation

Call up menu



Hold



1s



Release



Release

Outcome of an action The **adjustment menu** is closed after the last parameter.

5.2.5 Parameters of the adjustment menu

Description

Zero point

- For an optimal zero point calibration, a vacuum pump and a precise reference device are needed.
- The zero point correction is used together with the gradient correction primarily for compensation of sensor deviations. The entry takes place in the display unit.

Gradient

- A pressure reference is necessary for the gradient adjustment, e.g. in the form of a pressure source and a reference display device.
- The gradient correction is used together with the zero point correction primarily for compensation of sensor deviations.




Prerequisite – The **adjustment menu** has been opened. See Open the adjustment menu [▶ 14].

Instruction

1. Select the desired parameter you would like to configure.
2. Adjust the desired configuration in the selected parameter with the *Up button* or *Down button*.

3. The available configuration options are listed for each parameter in the following representation.

Representation

Parameter	Values	Meaning
	 	
	Zero point correction	
$Pr.oF$	0.0	No offset
$Pr.oF$	-5.0 .. 5.0	Offset active
	Gradient compensation specification	
$Pr.SL$	0	No slope
$Pr.SL$	-5.00 .. 5.00	Slope active

Formula

Sensor zero point correction offset $Pr.oF$

A zero point shift can be made for the measurement.

Displayed value = measured value – offset

Standard setting: 0.0, i.e. no correction is made.

Sensor gradient correction $Pr.SL$

The gradient of the measurement can be influenced with this factor (factor is in %):

Displayed value = measured value * (1+Pr.SL/100)

Standard setting: 0.000, i.e. no correction is made.

Outcome of an action

The changed value is saved and the **adjustment menu** is closed. **Star** appears in the display.



NOTE

If the product is switched off without saving the configuration, the last saved values are reproduced on the next start-up of the product.

6 Measurement Basics

6.1 General information about absolute pressure measurement

The device measures absolute pressure. However, this should not be confused with the "sea level air pressure" indicated by weather stations. The altitude-based air pressure decrease is calculated for these pressure specifications. The device is capable of correcting this air pressure altitude correction.

Prerequisites

- In the **Configuration** menu, the parameter value *SEAL* must be set to *YES*.
- In the **Configuration** menu, the actual altitude above nautical norm must be entered in the parameter value *RLT*.

The nautical norm correction must be deactivated for vacuum measurements.

6.2 Special functions

With the special functions that can be selected via the **Configuration menu**, the device can be optimised for special measuring tasks. After it is switched on, the device starts up in standard measuring mode, the relevant special function is started by pressing and holding the *Function key* for 4 s.

6.2.1 *NULL* Tare function / Altimeter altitude adjustment

Prerequisite

The special function *Func NULL* has been selected in the configuration menu.

Barometer display: The display can be zeroed by pressing the *Function key* for 4 s.

If the tare function is activated, *NULL* blinks in the lower display. The tare function can be reset by pressing the *Function key* again for 4 s.

Altimeter display: In the altimeter operating mode, after calling up the tare function, the user is prompted to enter the current altitude.



NOTE

The tare function is independent of the zero point correction accessible via the settings menu.

6.2.2 *AVr 0:02 / AVr 0:05 / AVr 0:10*

Fast measurement with mean value over 2 s / 5 s / 10 s

Mean value mode for measurement of heavily fluctuating pressures.

Prerequisite

In the **Configuration mode**, a special function *AVr 0:02*, *AVr 0:05* or *AVr 0:10* has been selected.

By pressing and holding the *Function key* for 4 s. the measurement with mean value can be activated.

The different mean value times of 2, 5 or 10 seconds can be selected depending on the requirement.

The first parameter is shown in the auxiliary display.

Special case

If the Tare function is activated when called up, this special function *AVr* can be reset by pressing and holding the *Function key* for 4 s. In order to reactivate the Tare, the special function must be switched in the configuration menu.

6.3 Use of the trend indicator

6.3.1 Meteorology: weather forecasting

Observation of variable weather conditions by assessing the rate of change of air pressure.

To do this, set the device to:

<i>Unit</i>	<i>hPa</i>	(international standard)
<i>Func</i>	<i>null</i>	(no signification)
<i>rPAtE</i>	<i>SLo</i>	(power saving during continuous operation)
<i>SER.L</i>	<i>YES</i>	
<i>Alt</i>		altitude of the location above sea level
<i>tEnd</i>	<i>1_h</i> or <i>3_h</i>	1 hour (1 hPa / bar level) or 3 hour (3 hPa / bar level)
<i>Lcd.2</i>	<i>°C.tE</i>	
<i>PoFF</i>	<i>oFF</i>	continuous operation

This results in the following display, for example:



display unit hPa

current pressure at sea level

trend: + 0,4 hPa per hour

□■□ stable (trend lower 1 hPa)

6.3.2 Hiking, cycling, flying, motor sports: use as a variometer

A variometer or inclinometer indicates the change in altitude per unit of time, i.e. the rate of ascent or descent. Common units are [ft/min] or [m/s] for flight and motor sports, or [m/h] for example in hiking/running.



NOTE

The output value of the tendency display in the setting *1_S* or *60_S* shows the current value for the tendency based on the measurements of the last 5 seconds, scaled to the selected setting. In the *60_S* setting, the resolution is reduced to 1 m or 5 t.

To do this, set the device to:

<i>Unit</i>	<i>ft</i> or <i>m</i>	(altimeter)
<i>Func</i>	<i>null</i>	for convenient correction of the current altitude
<i>rPAtE</i>	<i>SLo</i>	(power saving during continuous operation)
<i>SER.L</i>	<i>no</i>	
<i>tEnd</i>	<i>1_5</i> or <i>60_5</i>	(time base 1 second for m/s or 60 seconds for ft/min)
<i>Lcd.2</i>	<i>tEnd</i>	or for more information: <i>°C.P.t</i> or <i>°F.P.t</i>
<i>PoFF</i>	<i>oFF</i>	continuous operation

This results in the following display, for example:



display unit m or m/s

current altitude above sea level

trend: - 2,8 m per s

□■□ slightly falling

6.4 Protection of sensors with use of filter membranes

The product and the sensor are effectively protected by a filter membrane. This prevents the product from being destroyed by water, for example.

The membrane is located under the pressure equalisation openings:



Front view with
pressure equalisation openings



NOTE

The membrane provides good protection against water penetration.

If the membrane is wetted by water, the pressure balance between the environment and the device can be impaired, which can lead to sluggish response and falsified measurement results.

The membrane can be freed from a large part of the water by shaking it downwards and blowing it out carefully. To ensure proper functioning, the membrane must be completely dry..



NOTE

Do not attempt to remove dust or other foreign objects from the pressure equalisation openings with a wire or other pointed object. This may damage the membrane, compromising protection against dust and water ingress.

Shaking downwards and blowing out carefully can remove most of the foreign matter from the membrane.

7 Operation and maintenance

7.1 Operating and maintenance notices



NOTE

Pressure equalisation opening must be protected from soiling.

7.2 Battery

7.2.1 Battery indicator

If the empty frame in the battery display blinks, the batteries are depleted and must be replaced. However, the device will still operate for a certain length of time.

If the *bAt* display text appears in the main display, the battery voltage is no longer adequate for operation of the product. The battery is fully depleted.

7.2.2 Changing battery



NOTE

Unnecessary screwing places the water-tightness of the product, among other things, at risk and should be avoided.

Proceed as follows to replace the batteries.

- The product is switched off.

Description
Prerequisites
Instruction

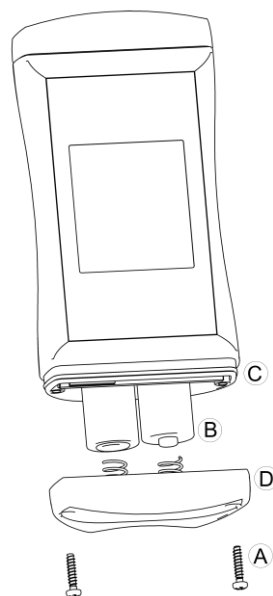


Fig. 1: Changing battery

1. Unscrews the Phillips screws (A) and remove the cover.
2. Carefully replace the two Mignon AA batteries (B). Ensure that the polarity is correct! It must be possible to insert the batteries in the correct position without using force.
3. The O-ring (C) must be undamaged, clean and positioned at the intended depth. In order to facilitate assembly and avoid damage, a suitable grease can be applied.
4. Fit the cover on evenly. The O-ring must remain at the intended depth!
5. Tighten the Phillips screws (A).

Outcome of an action The product is now ready for use again.

7.3 Calibration and adjustment service

7.3.1 Certificates

The certificates are categorised as ISO calibration certificates and DAkkS calibration certificates. The purpose of the calibration is to verify the precision of the measuring device by comparing it with a traceable reference.



NOTE

The ISO standard 9001 is applied for the iso-calibration certificates. These certificates are an affordable alternative to the DAkkS calibration certificates and provide information of the traceable reference, a list of individual values and documentation.



NOTE

The DAkkS calibration is based on DIN EN ISO/17025, the accreditation basis is recognised worldwide. These certificates offer high-quality calibration and consistently high quality. DAkkS calibration certificates can only be issued by accredited calibration laboratories which have demonstrated their expertise in accordance with DIN EN ISO/IEC 17025. The DAkkS calibration includes any necessary adjustment with the purpose of minimising a deviation of the measuring device.

DAkkS calibration certificates are accompanied with a list of individual measurements before and after the adjustment, documentation and, if applicable, graphic representation, calculation of the expanded measuring uncertainty and traceability to the national standard.



NOTE

The product is delivered with a test report. This confirms that the measuring device has been adjusted and tested.



NOTE

Only the manufacturer can check the basic settings and make corrections if necessary.

8 Error and system messages

Display	Meaning	Possible causes	Remedy
----	Calculation not possible	Measurement data acquisition is running	Waiting for data collection
No display, unclear characters or no response when buttons are pressed	Battery depleted System error Product is defective	Battery depleted Error in the product Product is defective	Replace battery Send in for repair
<i>bAt</i>	Battery depleted	Battery depleted	Replace battery
<i>bAt Lo</i>	Battery depleted	Battery depleted	Replace battery
<i>Err.1</i>	Measuring range exceeded	Measurement too high Product is defective	Stay within allowable measurement range Send in for repair
<i>Err.2</i>	Measuring range is undercut	Measurement too low Product is defective	Stay within allowable measurement range Send in for repair
<i>Err.3</i>	Display range has been exceeded	Incorrect display unit Value not displayable	Correct setting
<i>Err.4</i>	Display range has been undercut	Incorrect display unit Value not displayable	Correct setting
<i>545 Err</i>	System error	Error in the product	Switch product on/off Replace batteries Send in for repair

9 Disposal

Separation by material and recycling of device components and packaging must take place at the time of disposal. The valid regional statutory regulations and directives applicable at the time must be observed.



NOTE

The device must not be disposed of with household waste. Return it to us, freight pre-paid. We will then arrange for the proper and environmentally-friendly disposal.

Private end users in Germany have the possibility of dropping off the product at the municipal collection centre.

Please dispose of empty batteries at the collection points intended for this purpose.



NOTE

Fill in the return form available from the information base online at www.ghm-group.de and sent it in with the product.

10 Technical data

Measuring range	Barometer	300.0 .. 1100.0 hPa (mbar) abs. 4.350 .. 15.950 PSI abs. 225.0 .. 825.0 mmHg (Torr) abs.
	Altimeter	-500.0 .. 9000.0 m -1640 .. 19999 ft
	Temperature	-20.0 .. 50.0 °C -4.0 .. 122.0 °F
Accuracy	Barometer	± 1 hPa typical (at T: 0 .. 30 °C) ± 0.25 % FSS max. corresponds to ± 2 hPa
	Altimeter	typ. ± 1 m relative (over a short period at constant ambient pressure @ 25°C)
	Temperature	typ. ± 0.5 °C @ 25°C
Measuring cycle		<i>RR5L</i> : approx. 10 measurements per second <i>SL0</i> : approx. 1 measurement per second
Overload		4000 hPa abs.
Pressure connection		No connection, integrated sensor Pressure equalisation via diaphragm-protected opening
Display		3-line segment LCD, additional symbols, illuminated (adjustable white, permanent illumination)
Standard function		Min/Max/Hold Auto-power-Off function / if activated, switches the product off automatically Trend display, time base selectable (1s, 60s, 1h, 3h) <u>Only with altimeter function:</u> The altitude metres covered are calculated (ascent <i>RR5L</i> , descent <i>dE5L</i> , resolution 1m)
Additional functions		<i>nULL</i> : Tare function <i>AVr</i> : Averaging over 2 s / 5 s / 10 s As altimeter: switchable variometer display with units ft/h, m/s, m/h
Calibration		Zero point and gradient adjustment
Housing		Break-proof ABS housing
	Protection rating	IP67
	Dimensions Weight	108 * 54 * 28 mm (L*W*H) 140 g, incl. battery
Operating conditions		-20 to 50 °C; 0 to 95 % r.h. (short-term condensation possible)
Storage temperature		-20 to 70 °C
Current supply		2*AA battery (included in the scope of delivery)
	Current requirement/ Battery life	approx. 1 mA (slow measurement SLO) Operating time approx. 3000 h
	Battery indicator	4-stage battery status indicator, Charge indicator for low charge level: "BAT LO"
Auto-power-OFF function		The device switches off automatically if this is activated

Directives and standards	<p>The devices conform to the following Directives of the Council for the harmonisation of legal regulations of the Member States:</p> <p>2014/30/EU EMC Directive 2011/65/EU RoHS</p> <p>Applied harmonised standards:</p> <p>EN 61326-1:2013 Emission limits: Class B Immunity according to Table 2 Additional error: < 1 % FS</p> <p>EN 50581:2012</p> <p><i>The device is intended for mobile use and/or stationary operation in the scope of the specified operating conditions without further limitations.</i></p>
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11 Spare parts and accessories

A selection of spare parts and accessories for this product is listed below.

Article

Number	Name	Description
601060	GKK 1100	Case with nap foam, 340 x 275 x 83 mm
611373	ST-G1000	Protective device sleeve
475820	GCLIP1000	Self-adhesive metal belt clip

A complete list of all accessories- and spare parts is available in our product catalogue or on our home page. We can also provide further information by phone.

Contact

Internet:www.greisinger.de

Tel: +49 94029383-52

12 Ordering code

G 1110 - ¹

1.	Set-Option	
		Device only
	SET	Measuring device, suitcase GKK 1002
	WPD	Measuring device, suitcase GKK 1002, WPD5 calibration certificate

13 Service

13.1 Manufacturer

If you have any questions, please do not hesitate to contact us:

Contact

GHM Messtechnik GmbH
GHM GROUP - Greisinger
Hans-Sachs-Str. 26
93128 Regenstauf | GERMANY
Email: info@greisinger.de | www.greisinger.de
WEEE reg. no. DE 93889386



13.2 Repairs processing

Defective products are repaired professionally and quickly in our service centre.

Contact

GHM Messtechnik GmbH
GHM GROUP - Greisinger
Hans-Sachs-Str.26
Service Centre
93128 Regenstauf | GERMANY
Tel: +49 94029383-39
Fax: +49 94029383-33
service@greisinger.de



NOTE

Fill in the return form available from the information base online at www.ghm-group.de and sent it in with the product.