GREISINGER
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Operating manual

EN

G 1114

Vacuum meter | barometer

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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.

- 1234 Display elements
- *Mechanical controls*
- ***Product functions***
- **Product labels**
- Cross-reference [▷ p. 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 [▷ p. 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 1114 measures the absolute pressure in the air, clean water or in non-corrosive/non-ionising gases. A direct measurement of the environmental pressure can take place or the measurement pressure is taken with a suitable hose connected to the port. Relative measurements can also be conducted with the integrated special function nULL.

Applications include:

- Barometric measurements (e.g. weather)
- Vacuum measurements (up to 0 hPa abs., negative pressure via hose or even with complete device evacuation)
- Pneumatic measurements (up to 14000 hPa abs. or 14 bar abs.)

The pressure connection is made at the supplied interchangeable pressure connection ports with suitable hoses - 4 different connection options are available as standard, many other connection options can be used easily and reliable with G 1/8 adapters.

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 connections and be protected from dirt.

NOTE

Complete evacuation see Vacuum measurements [p. 16].

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

The pressure connection of gas hoses is selectable.

- UT connection for 6 x 1 mm hoses (4 mm inside, e.g. PVC hoses GDZ-01) and 8 x 1 mm (6 mm inside, e.g. silicon hoses for quick connection in heating service GDZ-31)
- QC6 Quick-Connect for 6 x 1 mm (Ø 4 mm inside) PVC, PE, PUR, PA hoses
- QC6 screw connection for 6 x 1 mm (Ø 4 mm inside) PVC, PE, PUR, PA hoses
- MCM mini-quick coupling connection for quick couplers

NOTE

The pressure connection can be changed out at any time at the G 1/8 inch universal port. You can choose the most practical connection type for your application - the basic device remains the same.

4 The product at a glance

4.1 The G 1114

LCD Display

Connection variants

Top view

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

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 measure-ment
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 AVr

4.4 Connections

Universal connection	Interchangeable pressure connection via G1/8" thread.

5 Operation

5.1 Commissioning

5.1.1 Explanation

Description

The product is switched on with the *On/Off button*. It may be necessary to configure the product after switching on. See Configuration [▷ p. 11].

Prerequisite

– Sufficiently full batteries are inserted in the product.

Instruction

– Press the *On/Off button*.

Outcome of an action

PoFF	Automatic shut-off	Automatic shut-off activated. The product is switched off if no buttons have been pressed after the adjusted time
Pr.oF	Offset correction	Calibration of the pressure sensor by the customer
Pr.SL	Gradient correction	Calibration of the pressure sensor by the customer
SEA.L	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

1. Press the *Function key* for 2 seconds to open the ***Configuration*** menu.
2. ConF appears in the display. Release the *Function key*.
3. By briefly pressing the *Function key*, 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 *Up button* or the *Down button*.
5. The changes are saved after running through the entire ***Configuration*** menu. Stor 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

Prerequisite

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

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
		
Anzeigeeinheit		
Unit		
	hPa	
	mbar	
	bar	
	PSI	
	mmHG	
Activatable special functions		
Func		
	nuLL	Tare function available
	AVR 0:02 / AVR 0:05 / AVR 0: 10	Rapid measurement with mean value over 2 s / 5 s / 10 s activatable
Measuring rate		
rAtE		Selection of the measurement speed
	SLo	Slow
	FASt	Fast

Nautical norm correction		
SEA.L		
	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
Shut-off time		
PoFF		
	oFF	No automatic shut-off
	0:15 0:30 1:00 4:00 12:00	Automatic shut-off after a selected time in hours and minutes, during which no buttons have been pressed
Backlight		
Li tE		
	oFF	Backlight deactivated
	0:15 0:30 1:00 4:00	Automatic shut-off of the backlight after a selected time in minutes and seconds, during which no buttons have been pressed
	on	No automatic shut off of the backlight
Factory settings		
Ini t		
	no	Use current configuration
	YES	Reset product to factory settings. Ini t donE appears in the display

Outcome of an action

The changed value is saved and the ***Configuration*** menu is closed. Stor 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.

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***. Stor 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 [▸ p. 13].

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	No offset
Pr.oF	-500 .. 500	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. Stor 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 Vacuum measurements

The device is especially suitable to measure rough vacuum via the pressure port very fast. But if the complete device is evacuated the following has to be considered:

CAUTION

Damage possible by fast complete evacuation!

Due to the water tight construction a complete evacuation of the device may degrade water protection. The keypad/display screen may break loose. If the device should still be used for this application, the following options are available:

– Remove the o-ring of the battery compartment! The Instrument then is no more water protected! Changing battery [▷ p. 20].

– Specialized variants G 1111-VAC!

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

Prerequisite

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

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.

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 rVr 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 Pressure connections

NOTE

Suitable hoses must be used for vacuum measurements, silicon is suitable as a hose material due to the low rigidity.

6.4 UT operation

Universal hose connection for 6 x 1 mm (4 mm inside) and 8 x 1 mm (6 mm inside) hoses.

***Fig. 4:* UT connection**

The universal hose connection is suitable for plastic and silicon hoses with an outer diameter of 6 mm, for which purpose the hoses are simply connected to the upper part. Rubber/silicon hoses with a larger diameter (e.g. 8 mm) can also be connected. They are fit on the lower part for this purpose.

CAUTION

Air pressure!

With higher pressures greater than 1 bar, the hoses must be secured to prevent unintended loosening. Suitable GDZ hose clamps are used for this purpose.

- 6x1 mm PVC GDZ-01. Up to 5 bar rel., vacuum-suitable!
- 6x1 mm PE GDZ-02. Up to 10 bar rel., vacuum-suitable!
- 6x1 mm PUR GDZ-03. Up to 9 bar rel., vacuum-suitable!

6.5 QC6 operation

Quick-Connect for Ø 6 mm hoses.

Fig. 5: **QC6 Quick-Connect**

The practical quick-change connection is only suitable for plastic hoses with 6 mm outer diameter. The hose end must be clean and undamaged for connection. It is fit by simply pushing it in until the mechanical stop is reached. It is disconnected by simultaneously pressing the ring on the upper end of the connection and pulling the hose.

6.6 ST6 operation

Screw connection for 6 x 1 mm (Ø 4 mm inside) plastic hoses.

Fig. 6: **ST6 screw connection**

The secure screw connection is only suitable for plastic hoses with 6 mm outer diameter (Ø 4 mm inside). The hose end must be clean and undamaged for connection. The union nut must be loosened before connection. Then the hose is pushed onto the hose nipple up to the mechanical stop. The union nut is hand-tightened to secure the connection. Disconnection takes place by loosening the union nut and pulling on the hose.

6.7 MCM operation

Mini-quick-coupler plug connector.

Fig. 7: **MCM mini-quick-coupler plug connector**

Compatible quick-couplers with nominal width 2.7 mm can be used:

Fig. 8: **quick-coupler**

6.8 Replacement of pressure hoses

The pressure connections are screwed into the product with a standard G 1/8 inch thread with end seal. All common pressure connections with this design can be connected.

NOTE

Use a suitable tool for tightening and observe the maximum torque of 2 Nm!

6.9 Protection of sensors with use of filter membranes

The product and the sensor can be protected easy and effectively with the use of filter membranes (e.g. adhesive membrane for UT connections, GDZ-35). This can prevent destruction of the product, for example, from penetration of potting compound in vacuum-casting applications: In the worst case scenario, only the connection has to be replaced.

7 Operation and maintenance

7.1 Operating and maintenance notices

NOTE

Pressure connections 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.

Description

Proceed as follows to replace the batteries.

Prerequisites

– The product is switched off.

Instruction

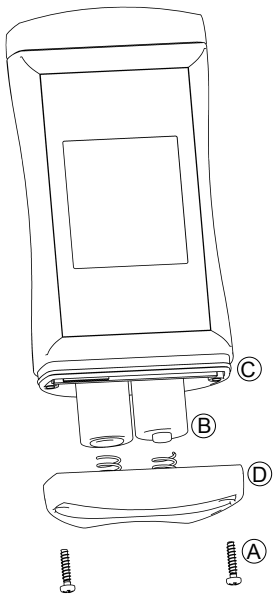

Fig. 9: **Batteriewechsel**

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 area 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	Battery depleted	Replace battery
	System error	Error in the product	Send in for repair
	Product is defective	Product is defective	
bAt	Battery depleted	Battery depleted	Replace battery
bAt Lo	Battery depleted	Battery depleted	Replace battery
Err.1	Measuring range exceeded	Measurement too high	The measurement is above the permissible range
		Product is defective	Send in for repair
Err.2	Measuring range is undercut	Measurement too low	The measurement is below the permissible range
		Product is defective	Send in for repair
Err.4	Display range has been undercut	Incorrect display unit	Correct setting
		Incorrect resolution	Deactivate function
SYS Err	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 prepaid. 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		0 .. 14000 hPa (mbar) abs. 0.00 .. 200.90 PSI abs. 0 .. 10500 mmHg (Torr) abs.
Accuracy		< ± 0.1 % MW respectively ± 0.02 % FSS typical (at T: 5 .. 30 °C) ± 0.5 % MW ± 0.1 % FSS max.
Measuring cycle		FASt: approx. 25 measurements per second SLo: approx. 2.5 measurements per second
Overload		20000 hPa abs.
Pressure connection		1 hose connection, interchangeable with G1/8 universal port
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
Additional functions		nuLL: Tare function AVr: Averaging over 2 s / 5 s / 10 s
Calibration		Zero point and gradient adjustment
Housing		Break-proof ABS housing
	Protection rating	IP67
	Dimensions L*W*H [mm] and weight	108 * 54 * 28 mm without Pressure connector 140 g, incl. battery and measuring cell
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. 0.6 mA (slow measurement SLO) Operating time approx. 5000 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		The devices conform to the following Directives of the Council for the harmonisation of legal regulations of the Member States: 2014/30/EU EMC Directive 2011/65/EU RoHS Applied harmonised standards: EN 61326-1:2013 Emission limits: Class B Immunity according to Table 1 Additional error: < 1 % FS EN 50581:2012 The device is intended for mobile use and/or stationary operation in the scope of the specified operating conditions without further limitations.

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
	G 1/8 inch connections	GDZ-UT, GDZ-QC6, GDZ-ST6, GDZ-MCM
	Hoses	GDZ-01, GDZ-02, GDZ-03, GDZ-04, GDZ-31
601576	GDZ-18	Hose clamp for hoses with 6 mm outer diameter
480328	GDZ-35	Self-adhesive filter membrane Ø 7 mm, 10 pcs for use with -UT

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 1114

G11xx 1 2 □–□

2.	Pressure connection	
	UT	1/8 inch port, incl. connections for 6x1 mm (4 mm inside) and 8x1 mm (6 mm inside) hoses.
	QC6	1/8 inch port, incl. quick-fit connector for hose outer Ø 6 mm
	ST6	1/8 inch port, incl. screw connector for hose outer Ø 6 mm
	MCM	1/8 inch port incl. mini-quick-coupler plug connector
1.	Set option	
		Device only
	SET	Measuring device, incl. 6 x 1 mm 1 m hose, GKK 1002 case

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

CE

13.2 Repairs processing

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

Open hours and contact

Monday to Thursday from 8:00 to 16:00
Friday from 8:00 to 13:00
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.

13.3 Sales offices

North Sales Office

Post code:	00000 – 25999 | 27000 – 34999 37000 – 39999 | 98000 – 99999
Email:	vertrieb-nord@ghm-messtechnik.de
Tel:	+49 4067073-0
Fax:	+49 4067073-288

West Sales Office

Post code:	26000 – 26999 | 35000 – 36999 40000 – 69999
Email:	vertrieb-west@ghm-messtechnik.de
Tel:	+49 2191 9672-0
Fax:	+49 2191 9672-40

South Sales Office

Post code:	70000 – 97999
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13.4 Sales subsidiaries

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