



humimeter.com[®]

by Schaller Messtechnik

User manual



floor screed moisture meter

humimeter GE1

Version 1.0_en

© Schaller GmbH
2015

Evaluation scale of measuring value

For some calibration curves, the measuring value shown on the display is evaluated in 4 different increments. This evaluation scale bases on the experience of Schaller GmbH. As the increments can differ according to the craft resp. business, a plausibility check is recommended.

At increasing moisture, the 4 increments are:


dry -> optimum -> moist -> wet

The evaluation scale differs depending on the material!

Design of GE1 basic device (article no. 13400)





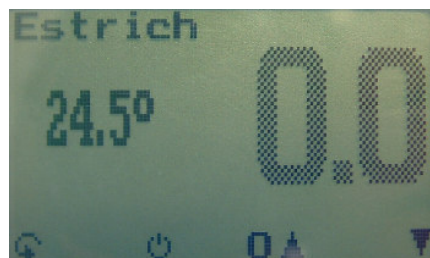
Measuring procedure GE1 basic device

To switch on the instrument, press the  key for three seconds.

After showing the logo, the measuring window opens and the current measuring values are displayed.



Now you can select the desired calibration curve by pressing  or . The calibration curves saved in the device can be found in the list below.



Look for some representative positions that are suitable for monitoring the floor screed moisture. The thickness of concrete in these places has to be at least 30mm.

Please make sure that there are no pipes, electric cables or iron gratings in this area. Metal objects within the measuring field of 30mm lead to incorrect measuring values.

Before measuring, clean the measuring area with a broad scraper. The measuring device has to rest on the concrete with its full surface without any air space. The measuring area must not be polluted by grit.

Select the calibration curve that best fits your material to measure using the arrow keys. For a list of material types and corresponding densities, please see the chart below.

Please ensure that the measuring instrument has nearly the same temperature than the material to measure.

Press the measuring instrument with downward measuring surface with a pressure of approx. 4kg onto the cleaned measuring area. The water content is displayed immediately.

The interpretation of the shown floor screed water content needs the experience of the user, based on the recommendations of the floor screed producer.

The thickness of floor screed can differ. The humimeter GE1 always measures the supreme layer of 30 mm.

If the thickness of floor screed is less than 30 mm, iron gratings, heating pipes and other metal can cause an incorrect measuring value. Therefore please look for a measuring position without any metal in the measuring field.

The device displays an average value of a layer of 30 mm. The moisture of deeper layers may be considerably higher than that value.

The water content of deeper layers can only be determined by the CM method or in a drying chamber.

List of calibration curves

calibration curve	description	density	measuring range
floor screed	cement screed normally compacted	approx. 2000kg/m ³	0.5 to 4.5%
CM floor screed	cement screed normally compacted conversion in CM %	approx. 2000kg/m ³	0.2 to 4.0%
concrete	concrete normally compacted	approx. 2400kg/m ³	0.5 to 5.0%
anhydrite floor screed	anhydrite floor screed normally compacted	approx. 2600kg/m ³	0.5 to 5.0%
Digit		-----	0 to 100
reference	! only for device check!	-----	-----

Information regarding measurements with GE1 basic device

Screed and concrete

The degree of drying and the moisture dispersal can differ significantly. Therefore we recommend to find out the wettest area by effecting a large number of measurements with the humimeter GF2. Then knock off the bottom layer of the wettest area and effect a final evaluation by drying in a drying chamber or via CM device.



Density ranges:

Concrete: between 2200kg/m³ and 2600kg/m³

Floor screed: between 1800kg/m³ and 2200kg/m³

Anhydrite floor screed: 2600kg/m³

CM method

Another common method of determining the moisture **of the bottom layer of screed** is the CM method. The accuracy of the CM method depends on various parameters and is not suited for a comparison with the humimeter GF2 resp. for material calibration. In the following chart of producers of CM devices you can find comparative values of measurements in drying chamber in weight% to CM% for some concrete types. Please find comparative values for other concrete types in the user manual of your CM device.

CM calibration curve

The CM floor screed calibration curve is a conversion from water content into CM %. The measurement values of this calibration curve are guidance values and do not replace the CM method. However, via the non-destructive measuring process of the GF2 the measurement is simplified. Subsequently a CM measurement according to the norm is recommended

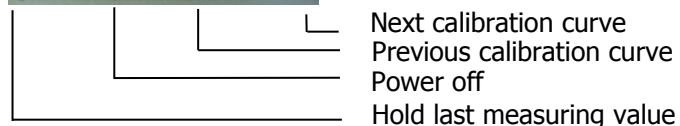
cement screed	weight %	1.8	2.2	2.7	3.2	3.6	4.1	4.5	5.0
	CM %	0.7	1.0	1.4	1.8	2.1	2.5	2.9	3.2
anhydrite floor	weight %	0.1	0.3	0.6	1.0	1.4	1.8	2.2	2.5
	CM %	0.1	0.3	0.6	1.0	1.4	1.8	2.2	2.5
concrete B15,B25,B35	weight %		1.3	1.9	2.5	3.2	3.8	4.4	5.0
	CM %		0.3	0.8	1.3	1.7	2.2	2.7	3.2

If your CM device shows a cement screed moisture value of 1.8 CM%, this value corresponds to 3.2 weight% corresponding to the norm method in the drying chamber.

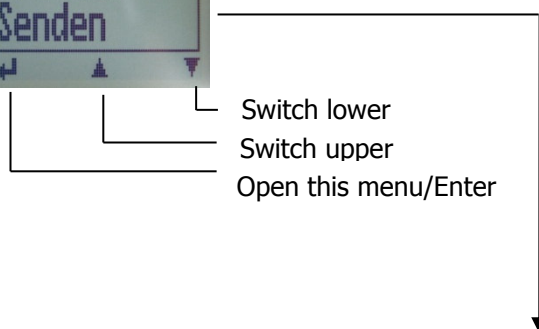
Menu level overview



Type selection menu








Service menu















<p><i>Options</i></p> <p><i>Status</i></p>	<p><i>Options</i></p> <p>Language</p> <p>Unlock</p> <p>°C/°F</p> <p>Calib.</p> <p>Userlevel</p> <p>Materialcalib.</p> <p>Password</p> <p>Reset</p> <p><i>Status</i></p>
--	---

Keypad symbols

Measuring window:

-  Rolling Menu
-  Power ON / OFF
-  Switch upper
-  Switch lower
-  Hold

Menu:

-  Enter
-  Switch upper
-  Switch lower
-  Exit
-  Enter numbers
-  Enter letters
-  Next or right
-  Left
-  Yes
-  No
-  Shift
-  OK

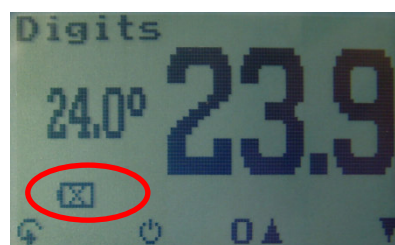
Changing the batteries

The delivery of your humimeter GE1 contains 4 enclosed batteries. Please insert resp. change the batteries as follows:

- 1.) At first remove the rubber protection cover. For that, hold the rubber protection cover at the upper side and pull it over.
- 2.) Press with your finger onto the arrow of the battery cap und pull it back.
- 3.) Remove the empty batteries.
- 4.) Put four new 1.5V Alkaline AA batteries in the device. Make sure that the position of the battery poles is correct.
- 5.) Press down the batteries and close the cap.
- 6.) Mount the rubber protection cover again.



If the battery symbol appears in the measuring window resp. if a critical charge of battery is shown in the status (!), the batteries have to be changed IMMEDIATELY. If you do not use your humimeter device for a longer period, remove the batteries. For eventual resulting damages we cannot provide any warranty.




Operating the instrument

Switching on: Press  for three seconds.



Changing the calibration curve: press  or .

Switching off

Press the  key in the measuring window for 5 seconds. The instrument switches off after releasing the key. The instrument switches off automatically after approx. four minutes.

Activation of the “super user” function


2 times  - *Options* – Unlock


Enter the 4-digit password by using the  button (standard is the 4-digit serial number) and confirm by pressing the  button.

Changing the Userlevel



Changing from advanced user to single user:

Make sure that you have activated the “super user” functions according to the instructions above. Afterwards change to the menu and choose „Options“.

In the submenu please select „o Userlevel“ (2 times  - *Options* – o *Userlevel*)

Confirm by pressing the  button. Now the single user is activated.

Changing from single user to advanced user:

Keep both the buttons  and  pressed directly after switching on the device. Your humimeter automatically starts the main menu. Activate the “super user” functions according to the instructions above.

Navigate to “*Options* – o *Userlevel*” and confirm by pressing the  button.

Notes

A series of horizontal dashed lines for writing notes.

Device maintenance instructions

To provide a long life of your device please do not expose it to strong mechanical loads or heat e.g. dropping it or direct sunlight exposure.

Clean your device using a **dry cloth**. Any kind of wet cleaning or cleaning agents may damage the device.

The instrument is not rainproof. Keep it in dry areas. When the device isn't used for a longer period (2 months) or when the batteries are empty, they should be removed to prevent a leakage of the battery acid.

Exemption from liability

For misreadings and wrong measurements and of this resulting damage we refuse any liability. This is a device for quick determination of moisture. The moisture depends on multiple conditions and multiple materials. Therefore we recommend a plausibility check of the measuring results. Each device includes a serial number and the guarantee stamp. If those are broken, no claims for guarantee can be made. In case of a faulty device, please contact Schaller GmbH (www.humimeter.com) or our dealer.

Technical data humimeter GE1 (article no. 13400)

Measuring depth	30 mm
Minimum material thickness	30 mm
Resolution	0.1% water content; 0.1°C ; 0.3°F
Measuring range	0% to 100% water content (dependent on the material)
Operating temperature	0°C to +50°C
Storage temperature	-20°C to +60°C
Temperature compensation	automatically
Menu languages	English, German, French, Italian, Spanish, Russian
Power supply	4 pcs. of 1.5Volt AA <u>Alkaline</u> batteries (900 measurements)
Auto Switch Off	after approx. 4 minutes (adjustable)
Power consumption	60 mA (with light)
Display	matrix display, lighted
Dimensions	150 x 75 x 30 mm
Weight	270g (with batteries)
Degree of protection	IP 40
Scope of supply	humimeter GE1, 4 x 1.5Volt AA Alkaline batteries

!IMPORTANT! Please read

Most common reasons for measuring errors

- In case of dew on the measuring device resp. on the sensor make sure to wait until it is completely dry again. Switching on resp. using a dewy device may lead to wrong measuring results and in the worst case may destroy the device.
- Direct sunlight exposure causes the display of wrong temperature and resulting wrong water content.
- A temperature difference between measuring device and material to measure strongly influences the measuring value. Therefore let the device adjust to the surrounding temperature.
- Wrong calibration curve: double-check the selection of the right calibration curve
- It is obligatory that the measuring instrument rests on an even measuring area without any air space! In addition, the measuring area has to be cleaned from sand or anything similar.
- The measuring depth is 30 mm. Deeper layers with a possibly higher water content cannot be measured!
- Calibrated for hardened and conditioned building materials
- Electric cables, insulation or iron gratings in the measuring field lead to measuring errors!
- Wrong calibration due to changed material composition because of various additives e.g. insulation material, chemical substances