



CAISSON

Measuring equipment

GM-200 HYDROMETER

INTRODUCTION

The hydrometer is used to measure the moisture content of concrete, plaster, cement, EPS, and also wood.

The undeniable advantages of the method are:

- high resolution,
- ease of use,
- non-destructive measurement.

The compact frame size, ergonomic shape and nonslip rubber on the edges of the device ensure a firm grip and convenient use.

The installed accelerometer allows for proper alignment of the device for measurement thus increasing the comfort of its use.



TECHNICAL DETAILS

Dimensions:	142 x 79 x 24 mm
Weight:	200 g (with battery pack)
Power source:	two AA batteries
Average operating time:	20 hours (with full batteries)
Display:	monochrome with a resolution of 128 x 63 pixels, backlit
Automatic screen orientation	
Operating temperature:	5°C to 40°C
9 measurement scales	



1 - status bar; 2 - measurement result; 3 - name of the selected scale;
4 - „SELECT MATERIAL” button; 5 - „ON” button; 6 - „SELECT DISPLAY” button.

INSTRUCTION

1. Turning the hygrometer ON

Press the „ON” button to turn the device on. The hygrometer will start automatically, without calibration. When the device turns on, the display will show the latest-selected scale. If the battery level is too low, such information will be displayed and then the device will turn off.

2. Turning the hygrometer OFF

If the device is not used for a longer time, it shuts down automatically, so as to extend the life of the batteries. To manually turn the device off, press and hold the “SELECT MATERIAL” button. During every shut down, the latest-selected settings (scale, language, alarm thresholds) are saved.

3. Measurement

The device analyses the dielectric properties of the material by measuring the electric field emitted by a metal ball. Dielectric properties depend on moisture content, bulk density of the material and metal elements. **CAUTION! If metal parts (i.e. nails, screws) are present within the measurement area, the results will be biased towards higher values.** The results of the measurement are displayed on the screen. The hygrometer has 9 scales that can be used to determine the moisture content of the material. The selected scale is displayed at the bottom of the screen. To perform a measurement, press the metal ball to the material and press and hold the “ON” button. **CAUTION! The angle between the moisture meter and the area under investigation should be in the range of 45 ° to 90 °. After releasing the ,ON’ button, the Moisture Meter will automatically enter ,HOLD’ mode.**



4. Scale selection

The device is equipped with multiple scales, which eliminates the need to use adjustment tables. This makes measurements not only more precise, but also easier. The selected scale is displayed at the bottom of the screen. To change the measurement scale, briefly press the “SELECT MATERIAL” button. **CAUTION! When the device turns on, the display will show the latest selected scale.**

Table 1. Names and descriptions of the measurement scales available in GM-200

Scale No.	Scale name	Description
1	Relative Scale [%]	Basic scale. Shows the relative humidity of the material.
2	Anhydrite Screed [Wt%]	This scale is meant for moisture measurements in anhydrite floors. Data are in weight percent water.
3	Anhydrite Screed [CM%]	This scale is used to measure the moisture content of anhydrite. The displayed value is an approximate value that can be also determined with the Carbide Method (CM).
4	Cement screed [Wt%]	This scale is used to measure the moisture content of cement screed. The content of water is expressed as a percentage of weight.
5	Cement screed [CM%]	This scale is used to measure the moisture content of cement screed. The displayed value is an approximate value that can be also determined with the Carbide Method (CM).
6	Concrete [Wt%]	This scale is used to measure the moisture content of concrete. The content of water is expressed as a percentage of weight.
7	Gipsputz [Wt%]	This scale is used to measure the moisture content of gypsum plaster. The content of water is expressed as a percentage of weight.
8	Hardwood / Oak [Wt%]	This scale is used to measure the moisture content of wood with a density of 0.6-0.9 [10^3 kg/m^3] (i.e. oak). The content of water is expressed as a percentage.
9	Softwood / Spruce [Wt%]	This scale is used to measure the moisture content of wood with a density of 0.4-0.55 [10^3 kg/m^3] (i.e. spruce). The content of water is expressed as a percentage.

5. „HOLD” function

The Hold function displays the last measured value. It is activated automatically when the “ON” button is release. When the device switches to the Hold mode, the following symbol appears at the top of the display on the status bar.



6. Menu

The operating menu allows for changing alarm thresholds for the respective measurement scales and selecting at language. To access the operating menu, press and hold down the “SELECT MATERIAL” and “SELECT DISPLAY” buttons. Use the “SELECT MATERIAL” and “SELECT DISPLAY” buttons to navigate the menu. Use the “ON” switch to change menu levels and to confirm the settings. **CAUTION! Critical parameters are protected against unintended modification with the use of an additional warning and request for confirmation.** To navigate to the parent menu, press “Back” and briefly press the “ON” button. To exit to the main window, confirm the “Back” option of the top level menu.



GM-200 in menu modes.

- 1 - Select the previous menu item or decrease a value;
- 2 - Confirm the selected option or value;
- 3 - proceed to the next menu item or increase a value.

7. Alarm

Exceeding the set value will trigger a sound alarm. For each scale an individual alarm threshold can be set. Alarm thresholds are set in the operating menu. To change the setting for the material of choice, select the “Alarm Level” item in the operating menu and press the “ON” button. After selecting the scale, press the “ON” button once again to set the alarm threshold. After changing the alarm threshold, confirm the value by pressing the “ON” button. To protect against accidental changes, it is necessary to confirm the action by pressing the „ON” button once again. To cancel the change, press the “SELECT MATERIAL” button. Alarm thresholds are stored in the memory, even if the batteries are removed. If the “Factory Settings” (Werkseinstellungen) option is selected, all the changes will be replaced with the factory settings.



8. Language selection

The software has been designed to allow the user to choose between different languages. The language is changed from the menu. To open the language selection menu, select the Language item in the operating menu and confirm by pressing “ON”. Select the language and confirm by pressing “ON”. To protect against accidental changes, it is necessary to confirm the action To confirm the change press the “ON” button once again, press “SELECT MATERIAL” to cancel. Language settings are stored in the memory, even if the batteries are removed.

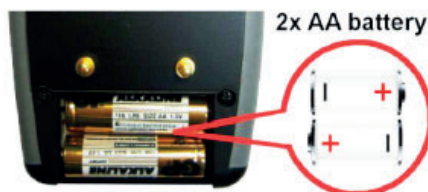
9. Restore factory settings

Factory reset will undo all the changes of the alarm thresholds. To restore the factory settings, select the “Factory Settings” (Werkseinstellungen) item from the menu and confirm by pressing the “ON” button. To protect against accidental changes, it is necessary to confirm the action To confirm the change press the “ON” button once again, press “SELECT MATERIAL” to cancel.

10. Power supply

The GM-200 hygrometer is powered by two AA batteries. You may use either disposable or rechargeable batteries. The Battery status indicates the battery charge level. If an empty battery icon is displayed, replace the batteries. Batteries should be replaced with a new set of batteries of the same kind. Do not use a rechargeable battery in combination with a disposable battery or a partially discharged battery with a full battery.

The figure below shows the location of the batteries in the battery compartment.



11. Warranty

Notwithstanding the statutory warranty claims, CAISSON provides a warranty in accordance with the laws of the Customer’s country for a period of at least two years from the date of sale of the device to the end user. The warranty covers only those faults which are caused by defects in material or workmanship. A warranty claim must be accompanied by a proof of purchase with the date of sale specified. Warranty repairs shall be performed only by an authorized distributor of CAISSON.

The following are excluded from the warranty:

- misuse,
- use of force, damage caused by external factors or foreign bodies such as sand or water,
- damage caused by failure to comply with the instructions for use,
- normal wear and tear.

The warranty also excludes devices that are partially or entirely disassembled.