

# Operating Instructions



## Active Electrode

### B 55 BL



EN



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## 0.1 Publication Statement

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GANN Mess- u. Regeltechnik GmbH, Gerlingen, Germany.  
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## 0.2 General Notes

This measuring device fulfils the requirements of the applicable European and national directives (2004/108/EC) and standards (EN61010). Appropriate declarations and documentation are held by the manufacturer. To ensure trouble-free operation of the measuring device and operational reliability, the user must carefully read the operating instructions. The measuring device may only be operated under the climatic conditions specified. These conditions can be found in Chapter 3.1 "Technical data". This measuring device may likewise only be used under the conditions and for the purposes it was designed for. Operational reliability and functionality are no longer ensured if the device is modified or adapted. Gann Mess- u. Regeltechnik GmbH is not liable for any damage arising from such modifications or adaptations. The risk is borne by the user alone.

- Using appropriate means, make always sure that there are no electrical cables, water pipes, or other utility lines at the location, at which the measurement is to be carried out.
- The device must not be stored or operated in aggressive air or air containing solvents!
- Material that is frozen or has wet surfaces cannot be measured.
- The notes and tables in these instructions on permitted or normal humidity conditions in practice and the general definitions of terms have been taken from the specialist literature. No responsibility can therefore be taken by the manufacturer for the correctness of this information. The conclusions to be drawn from the measurement results are related to the individual conditions and the knowledge drawn from professional experience for each user.

- The measuring device may be operated in residential and commercial areas, as the stricter class B for emitted interference (EMC) has been adhered to.
- The device may not be operated in the immediate area of medical equipment (heart pacemakers, etc.).
- The measuring device may only be properly used as described in these instructions. Keep the device and accessories out of the reach of children!
- Measurements must not be carried out on metallic surfaces.

Gann Mess- u. Regeltechnik GmbH accepts no liability for damage resulting from non-adherence to the operating instructions or by not taking proper care during transport, storage or operation of the device, even if this requirement for care is not specifically addressed in the operating instructions.

### **0.3 WEEE Directive 2002/96/EC Law on Electrical and Electronic Equipment**

Disposal of packaging, battery, and device must be undertaken in accordance with the legal requirements at a recycling centre.

The device was manufactured after 1 October, 2009

# 1 Introduction

## 1.1 Description

The active electrode B 55 BL is an electronic building moisture meter based on the dielectric-constant / high-frequency measurement principle, with a 3-line LCD display and a flexibly applicable ball probe for non-destructive detection of moisture in all types of building materials, as well as the moisture distribution in walls, ceilings and floors.

The active electrode B 55 BL has to be connected with the BL UNI 10.

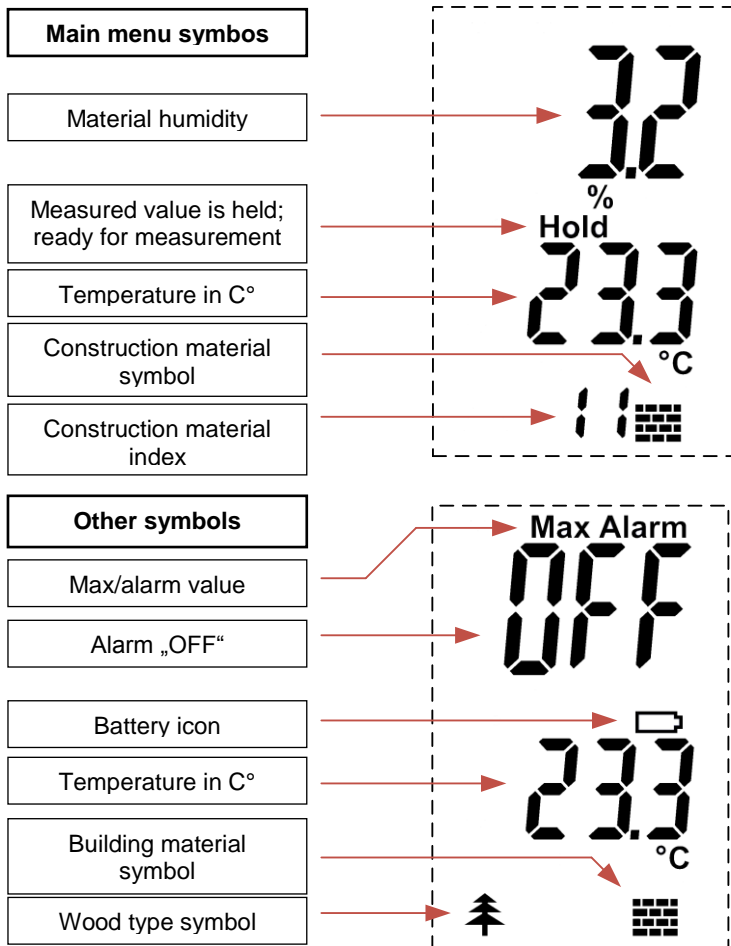
The B 55 BL is an ideal pretester for use with all "CM" devices.

## 1.2 Device Layout





### 1.3 Display Symbols



## 2 Basic Functions

### 2.1 Setting Menus

By repeatedly pressing the "**Up**" and "**Down**" keys the following menus can be selected in sequence (sequence using the "**Down**" key; the menus are accessed in the opposite direction using the "**Up**" key):

1. **Measuring menu** (main menu): The measuring process can be performed from here.
2. **Type selection**: The material type can be selected here.
3. **Alarm value setting**: This allows the user to set a measurement value threshold that will trigger an acoustic signal when exceeded.
4. **Maximum value**: The largest measured value is displayed.

#### 2.1.1 Measuring Menu (Main Menu)

The last measured value is shown together with the comment "**Hold**". The instrument temperature and the current type are also shown on the display.

A new measurement can be started in this menu by pressing the "**M**" key.

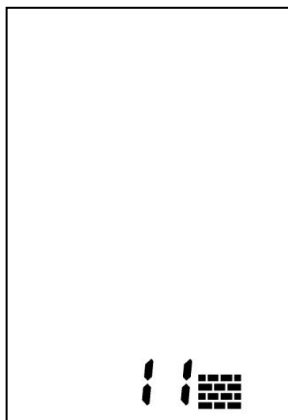
The "**Hold**" icon disappears from the display during the measurement. After the "**M**" key is released, the measured value is stored. The "**Hold**" icon is displayed again.

If the new measured value is greater than the previous maximum, "**Max**" flashes on the display. The "**M**" key is pressed briefly to store the new value. A new measurement can be started without altering

the previous maximum by pressing "**M**" *longer* if the value is not to be stored.

If the alarm function is turned on, a warning signal sounds when the adjustable alarm value has been exceeded, and the measurement value flashes. At the same time, the selected alarm value is shown in the third line of the display.

### 2.1.2 Material Setting



Angezeigt wird die eingestellte Materialkennzahl mit dem Symbol für Holzfeuchte bzw. Materialfeuchte

Kennzahl und Materialsymbol

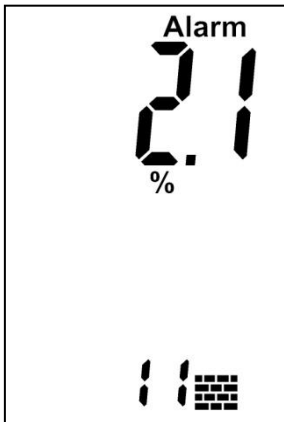
Abbildung 2-1 Materialauswahl

Press the "**M**" key (measure key) *briefly* to change the preset for the material.

The material ID flashes and can be set using the "**Up**" and "**Down**" keys. Press the "**M**" key again *briefly* to save the change.

The material table can be found in the Annex.

### 2.1.3 Alarm Value Setting



The alarm can be activated or deactivated from this menu. The alarm value can also be set.

Material icon and ID

Figure 2-2 Alarm menu

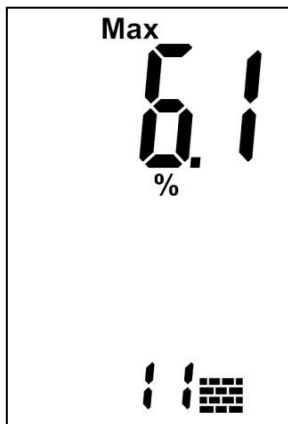
If no maximum value is stored, or if it is deleted, the “OFF” icon appears.

To enter a new maximum value or to activate the function, *briefly* press the “M” key. The display begins to flash. Pressing *longer* on the “M” key activates the alarm value. The alarm value for each material ID set in measuring mode can be entered separately by using the “Up” and “Down” keys. After the desired value has been set, or a previously available one (re)activated, press *briefly* on the “M” key to confirm the entry. The instrument will return to standby mode.

**If 0 is chosen as the material ID, the display will show in digits, without percentage data.**

**Bei Auswahl der Material-Kennzahl 0 erfolgt die Anzeige in Digit ohne %- Angabe.**

### 2.1.4 Maximal Value



The largest measured value of a series is displayed with the display icon "Max".

Material icon and ID

Figure 2-3 Maximum value menu

To delete a maximum value, the displayed value must be selected by *briefly* pressing the "M" key (measure key).

The value flashes and can now be deleted by pressing the "M" key *longer*.

After that, only the "Max" symbol flashes. Another *brief* press on the "M" key confirms the input and returns the instrument to standby mode.

A new measurement can then be carried out using the "M" key.

## 3 Specifications

### 3.1 Technical Specifications

Display:	3-line display
Display resolution:	0,1 %
Storage conditions:	+ 5 to + 40° C - 10 to + 60° C (kurzzeitig)
Operating conditions:	0 bis + 50° C - 10 to + 60° C (kurzzeitig)
Dimensions:	220 x 40 x 30 (L x B x H) mm
Weight:	ca. 174 g

### 3.2 Prohibited Environmental Conditions

- Condensation, air humidity continuously too high (> 85 %) and wetness
- Permanent presence of dust and combustible gases, fumes or solutions
- Ambient temperatures continuously too high (> +50 °C)
- Ambient temperatures continuously too low (< 0 °C)

### **3.3 Measuring Range**

0 to 199 digits (see table for conversion values)

Building moisture: 0.4% to 6.0% wt. (depending on material)

Building materials: Cement screed, anhydrite screed, concrete, cement mortar, lime mortar, mixed plaster, gypsum plaster

## 4 Application notes

### 4.1 General Notes

The active electrode B 55 BL is a dielectric moisture meter für determining the moisture and moisture distribution in building materials, such as masonry, concrete, screed, wood, insulation etc.

Measurement is based on the measurement principle of the capacitive electrical field. The measurement field forms between the active ball at the upper part of the instrument and the substrate mass to be measured. The change in the electrical field by the material and moisture is registered and digitally displayed (as digits or weight percentage).

The measurement is a relative one, which means that the difference between the dry and moist building material is shown.

An inference as to the absolute moisture by percentage of weight or by moisture per CM percentage is possible only during the normal course of drying.

One influencing factor to be considered is the raw density of the building material to be tested. In general, for dry and moist building materials, as the raw density increases, the displayed value rises correspondingly (see also Chapter 4.4, page 20).



## 4.2 Orientation Values

The following data serve as a an orientation guide for anticipated display values:

### Residential spaces

dry	20 - 40 digits
moist	80 - 140 digits

### Cellars (old buildings)

dry	40 - 60 digits
moist	100 - 150 digits

### Caution:

Dew point underflow or condensation on the surface which is measured can cause higher values and thus make the wall appear more moist than it really is!

Therefore it is useful to carry out an additional room air detection and dew point calculation with the active electrode TF-IR BL. This can prevent misinterpretation.

Depending on raw density, readings over 130 digits indicate that condensation is beginning.

Depending on the height of the covering, metal in the subsurface (iron reinforcements, wires, pipes, stucco bars, etc.) can raise the measurement value. This should be considered when evaluating the displayed values in relation to the covering.

### 4.3 Handling the Active Electrode B 55 BL

To prevent any influence from the hand of the operator who is performing the measurement, during the measurement and inspection process, only the rear half can be covered by the hand. The front half (display/ball) of the instrument must remain free.

#### **Handling the instrument properly:**

While measuring, always grip the instrument by the lower end of its housing.



Figure 4-1 Correct handling

**Improper handling of the instrument:**

During measurement, the hand influences the measurement field of the ball electrode and thereby changes the measurement value, as shown below.



**Figure 4-2 Improper handling**

**Measuring**

Press the measurement key “M”, and scan the area to be inspected. The electrode must rest firmly on the building material and be held as vertically as possible (about 90°) to the area. In corner areas, a margin of about 8-10 ca from the edge or angle should be maintained.

#### 4.4 Display Digits in Percentage by Weight or CM-Percent

Reading in digits	40	50	60	70	80	90	100	110	120	130
Cement screed wt. %	1,8	2,2	2,7	3,2	3,6	4,1	4,5	5,0	5,5	5,9
CM %	0,7	1,0	1,4	1,8	2,1	2,5	2,9	3,2	3,6	4,0
Anhydrite screed in wt. %	0,1	0,3	0,6	1,0	1,4	1,8	2,2	2,5	2,9	3,3
CM %	0,1	0,3	0,6	1,0	1,4	1,8	2,2	2,5	2,9	3,3
Concrete B15, B25, B35 wt. %		1,3	1,9	2,5	3,2	3,8	4,4	5,0	5,6	6,2
CM %		0,3	0,8	1,3	1,7	2,2	2,7	3,2	3,7	4,2
Cement mortar in wt. %	1,8	2,7	3,5	4,6	6,0	7,0	7,8			
CM %	0,6	1,5	2,3	3,1	4,0	4,8	5,6			
Lime mortar in wt. %	0,6	2,0	3,3	4,5						
CM %	0,6	2,0	3,3	4,5						
Lime-cement mortar in wt. %	2,2	3,6	5,0	6,4	7,8	9,2	10,6	11,0		
CM %	1,5	2,7	4,0	5,2	6,4	7,6	8,8	10,0		
Gypsum plaster in wt. %	0,3	0,5	1,0	2,0	3,5	6,5	10,0			
CM %	0,3	0,5	1,0	2,0	3,5	6,5	10,0			

The weight percentages and CM percentages calculated and directly displayed by the instrument are benchmarks. They relate to a normal drying process with natural reductions in moisture between the accessible depth, depending on the raw density. If the building material dries too quickly (due to warm air, dehumidifiers, floor heating, etc.) too low a measurement value may be displayed because of the low moisture of the surface.

The depth effect is largely dependent on the respective raw density and surface moisture. Normal plaster and screed thicknesses are used when programming the values into the instrument.

**Caution:**

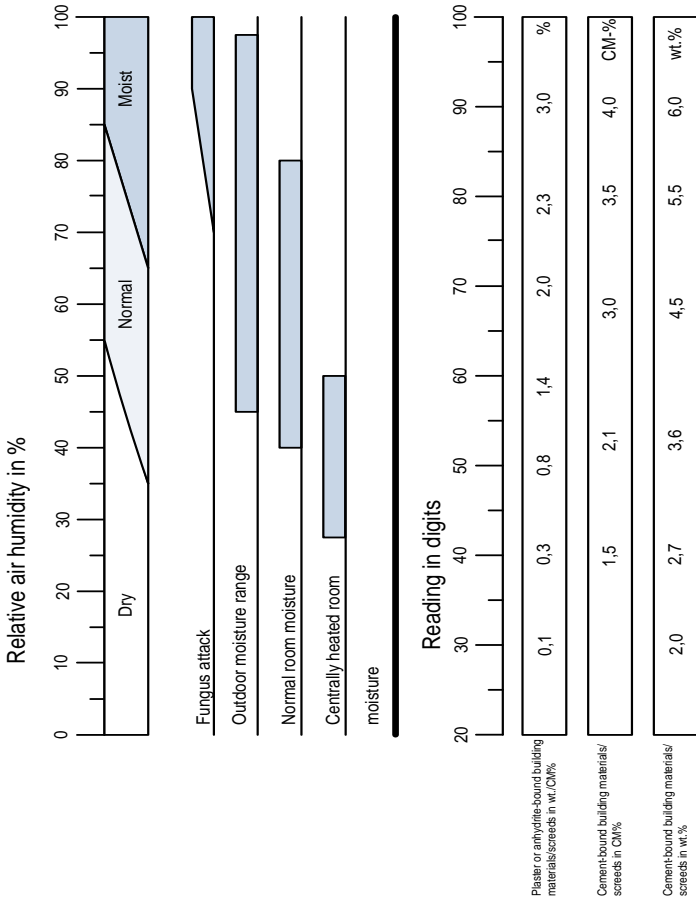
The notes and charts on allowable or common moisture conditions in practice and general definitions given in these instructions were taken from the technical literature. The instrument's manufacturer can therefore not guarantee their accuracy. The conclusions drawn from the measurement results depend on each user's individual requirements and practical, professional empiricism.

## 5 Appendix

### 5.1 Materials Table

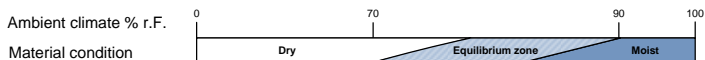
0	Reading in digits
11	Cement screed in wt. %
12	Anhydrite screed in wt. %
13	Concrete in wt. %
14	Cement mortar in wt. %
15	Lime mortar in wt. %
16	Mixed plaster in wt. %
17	Gypsum plaster in wt. %
18	Cement screed in CM%
50	Anhydrite screed in CM%
54	Gypsum plaster in CM%
55	Lime mortar in CM%
58	Cement mortar in CM%
72	Mixed plaster in CM%
73	Concrete in CM%

## 5.2 Comparison Graph of Humidity – Material Moisture Content



## Notes on graph in Section 5.2:

The zones shown in the graph indicate:



### **Pale zone: Dry**

Equilibrium moisture.

### **Hatched zone: Equilibrium zone**

Caution! Non-diffusing coverings or adhesives should not be used.  
Please ask the respective manufacturer.

### **Dark zone: Moist**

Machining or processing at very high risk!



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