Hydromette COMPACT LB

Operating Instructions

Stand 11/08

Contents Page

General

The GANN Hydromette COMPACT LB is a dielectric moisture sensor to locate remoistenings and moisture distribution in building materials such as, for example, brickwork, concrete, screed, wood, insulating materials, etc.

The measurement is based on the priciple of a capacitive electrical field. It is set up between the ball sensor and the material to be tested. The electrical field is affected by the density and by the moisture content of the building material tested. If the density of the tested material remains constant, changes in the capacity field can be matched, therefore, to a change of the moisture content.

Changes of the electrical field, caused by varying density or varying moisture content, are detected by these measuring instruments and digitally displayed. The indicating range extends from 0 to 199 digits. The readings are relative, i.e. they indicate the difference between dry and wet building materials. This permits to locate distribution and concentrations of moisture in walls, ceilings and floors.

An approximate inference on the actual moisture content in percents of dry weight or CM-% from the readings in digits, is only possible at regular progress of drying (see table below).

Approximate Percentage Readings at <u>Average Density</u> of the Building Materials

Reading (Digits)	**40**	**50**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**
% of weight	1.8	2.2	2.7	3.2	3.6	4.1	4.5	5.0	5.5	5.9
Concrete Flooring										
% CM	0.7	1.0	1.4	1.8	2.1	2.5	2.9	3.2	3.6	4.0
% of weight	0.1	0.3	0.6	1.0	1.4	1.8	2.2	2.5	2.9	3.3
Anhydrite Screed										
% CM	0.1	0.3	0.6	1.0	1.4	1.8	2.2	2.5	2.9	3.3
		1.3	1.9	2.5	3.2	3.8	4.4	5.0	5.6	6.2
% of weight										
Concrete B15, B25, B35		0.3	0.8	1.3	1.7	2.2	2.7	3.2	3.7	4.2
% CM										
% of weight	1.8	2.7	3.5	4.6	6.0	7.0	7.8			
Cement Mortar										
% CM	0.6	1.5	2.3	3.1	4.0	4.8	5.6			
% of weight	0.6	2.0	3.3	4.5						
Lime Mortar										
% CM	0.6	2.0	3.3	4.5						
Lime- % of weight	2.2	3.6	5.0	6.4	7.8	9.2	10.6	11.0		
Cement Plaster										
Mixture % CM	1.5	2.7	4.0	5.2	6.4	7.6	8.8	10.0		
% of weight	0.3	0.5	1.0	2.0	3.5	6.5	10.0			
Gypsum Plaster										
% CM	0.3	0.5	1.0	2.0	3.5	6.5	10.0			

Building and insulating materials not mentioned in the table

Building materials like bricks, lime sand bricks etc. cannot be measured with the usual accuracy because of the different densities, impurities by minderals and burning time. This does not mean, however, that results obtained by comparative measurements are not meaningful.

The same applies to insulating materials like rock wool and glass wool or plastic foams. Wet insulating materials are clearly identified from 50 to 160 digits. It is not possible, however, to convert the readings to percents of dry weight or volume.It is of importance that the insulating material has a reasonably solid and even surface. When taking measurements, the ball sensor must not be pressed into the material. Only a safe contact with the surface is required.

By differently high readings obtained in scanning mode, the extension of an area with high moisture content (water damage) can be defined. By comparative measurements on dry interior and moist external wall, the drying progress can be verified.

The bulk density of the building material to be measured is a parameter that has to be considered. High bulk densities lead to higher readings independent of of the actual moisture content.

Relation of Displayed Digit Values to Specific Weight and Moisture Condition of Set Building Materials

Bulk density kg / m³	Corresponding Relative Air Humidity 30–––––––50–––––––60–––––––70–––––––80–––––––90–––––––100 Display in Digits very dry	normal dry	semi-dry	moist	very moist	wet
up to 600	**10 - 20**	**20 - 40**	**40 - 60**	**60 - 90**	**90 - 110**	**more than 110**
600 - 1200	**20 - 30**	**30 - 50**	**50 - 70**	**70 - 100**	**100 - 120**	**more than 120**
1200 - 1800	**20 - 40**	**40 - 60**	**60 - 80**	**80 - 110**	**110 - 130**	**more than 130**
above 1800	**30 - 50**	**50 - 70**	**70 - 90**	**90 - 120**	**120 - 140**	**more than 140**

Adjusting length of the rod

By contrariwise turning the two sections of the rod, the mechanical interlocking can be disengaged and the rod adjusted to the desired length between 80 cm and 120 cm. Then turn the two sections again back to fix the new length. Only half a turn of the rod is required in either case.
Don't use force!

Handling

After pressing the switch button beneath the LC display, the reading displayed and the measuring activity remain switched on for about three minutes. Switching-off is performed automatically. Care should be taken that the switch button is not kept depressed while storing this moisture indicator. When being not in use for a longer period, the battery should be removed. In order to avoid influencing of the measurement by the hand of the operator, the COMPACT LB must be held only by its plastic handle during measurement. The front part towards the ball sensor and the metallic tube must not be in physical contact with any material. Only the ball sensor should have contact with the material tested.

Battery change

The battery should be changed when a second decimal point is displayed (e.g. 1.8.8). For this purpose unscrew the two cross-recessed screws on the side of the handle – not those aside the LC display – and remove the front part by slight tilting movements. Then pull the battery out of the handle by cautiously pulling on the black-red battery lead. Disconnect the battery from its clip, connect the new 9 V dry cell, and insert it into the handle. Take care that no cable will be clamped. Refit the front part of the handle by means of the two cross-recessed screws.

Measurement

Move the ball sensor in scanning mode over the material to be tested, in firm contact with it. To obtain the best results, the sensor rod should be held at an angle of 90° to the surface to be measured. In corners or angular ranges measurement is only possible up to a distance of approx. 8 – 10 cm from the edge.

Warning

There is a **danger of injury** if the metal ball comes into contact with live parts. Do not use this moisture indicator in the immediate vicinity of equipment equally sensitive to high frequencies (e.g. functioning medicinal devices).

Checking

Take hold of the COMPACT LB by its handle and hold the ball sensor in the air. Upon pressing the measuring key a value between – 5.0 and +5.0 should be displayed.

The list below gives a rough idea of the readings that can be expected in practice.

Wood	dry	25 – 40 digits
	humid	80 – 140 digits
Living area brickwork	dry	25 – 40 digits
	humid	100 – 150 digits
Basement brickwork	dry	60 – 80 digits
	humid	100 – 150 digits

Depending on the bulk density, readings of more than 130 digits may indicate the presence of free water. In case of covered metal parts (reinforcing steel, pipes, power lines, plaster supporting strips, etc.), even if the environment is otherwise dry, the reading jumps to approx. 80 digits (if the covering is very thin, even higher). This should be taken into account when assessing the displayed readings.

Schematical representation of the measuring field