پترو فرهان گستر جنوب

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Vision on quality
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# TQC CONCRETE MOISTURE METER
LI9200

MANUAL

## 1 PRODUCT DESCRIPTION

The TQC Concrete moisture meter is a non-destructive moisture meter for concrete. By means of measuring the electrical impedance the moisture content of concrete can easily be determined by just pressing the instrument against the concrete surface.

The electrical impedance is measured through generating a low frequency electric field between 8 electrodes at the bottom of the instrument. Depending on the moisture content the measurements are made to a depth of several centimetres.

TQC Concrete Moisture meters are ideal to quickly test large concrete floors or constructions which have to be painted or where (wooden) floorings are being installed.

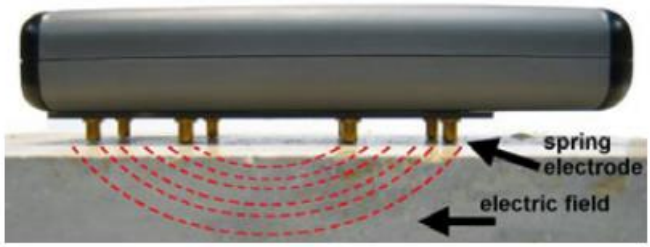
Four scales allow flexible use of the instrument as an accurate measuring device or just as a detector to find moisture traces or leakage.

### 1.1 Specifications

| | |
|---|---|
| Dimensions: | 147x89x33mm |
| Power supply: | 2xAA battery |
| Average working time on one battery set : | 20 hours |
| Display: | monochrome 128x64 pixels, size 61x33mm with backlight |
| Operating temperature range: | 5°C to 40°C |
| Accuracy: | ±0.5% |
| Scales: | Concrete, Carbide Method, Relative Scale, 15. Scale |

### 1.2 Details

LI9200 meter calculates moisture of analyzed material by measuring its electrical impedance. The relation between moisture in certain material and its impedance is directly proportional. Impedance is measured through generating low frequency electric field between electrodes. The meter measures low intensity alternating current flowing through electric field and on that basis calculates moisture of tested material.




### 1.3 Constraints:

Concrete Moisture Meter LI9200 does not detect concrete moisture through electricity conducting materials like metal coverings/ linings, PE-rubber or any wet surfaces.
Moisture Meter LI9200 should not be used to measure concrete moisture on surfaces which are topped with a thick layer of floor covering material like wood.
Meter measurement outcomes show the actual moisture at a time of measurement.

## 2 WHAT'S IN THE BOX?

Concrete moisture meter, soft pouch, manual

## 3 PREPARATIONS

### 3.1 Preparing the surface

All concrete heating/drying equipment should be switched off at least 96 hours before taking the final measurements. Otherwise the outcome may not reflect the actual moisture level or displacement of moisture in tested material.
Before the measurement may be taken, the analyzed surface should be cleaned- there should not be any foreign substances like plastic films, dust etc.. In case of measuring concrete floors all covering materials like: concrete additives, primers, paints, etc., should be removed in order to reveal pure concrete that is going to be measured. All cleaning and cover-removing works should be finished at least 48 hours before taking the measurement.
LI9200 meter should not be used to measure concrete on which there is water in a liquid state.
Measurements should be avoided in areas exposed to direct sunlight or other sources of heat.

### 3.2 Preparing the instrument

Picture below illustrates meter's front and back panel with most important elements marked:

- To turn on the meter press ON/HOLD button.

- To set the scale press SET button.
  There are 4 available scales:

| | | | |
|---|---|---|---|
| 1. | | Concrete | 0-6% H2O |
| 2. | ~ | Carbide Method | 0-4% H2O |
| 3. | | Relative Scale | 0-100% |
| 4. | ~ | 15. Scale | 0.3-15.3m |

Name of chosen scale will appear in the ***scale indicator*** field.
To see detailed description of each scale go to *Available scales* section.

- To set the mode of measurement press ON/HOLD button.
  There are 2 available modes:
  - Normal
  - Max. Hold

The display color will change depending on which mode was chosen.
To see detailed description of each mode go to *Modes & functions* section.

Press the meter against the tested surface until all spring electrodes are completely blocked.
**! Caution:** Do not press the device too intensely as this may harm the electrodes.
**! Caution:** Fingers SHOULD NOT touch the sensor plate and electrodes while measuring.

The meter should be held in the middle while measuring (as shown on the picture)

It is recommended to repeat the measurement in a few points situated next to each other as moisture has a tendency of uneven distribution. If the measurements vary, only the highest outcomes should be used.

To switch off the meter press ON/HOLD button for around 2 seconds.

## 4 PERFORM A MEASUREMENT

Press the meter against the tested surface until all spring electrodes are completely blocked.

**! Caution:** Do not press the device too intensely as this may harm the electrodes.

**! Caution:** Fingers SHOULD NOT touch the sensor plate and electrodes while measuring.

The meter should be held in the middle while measuring (as shown on the picture)

It is recommended to repeat the measurement in a few points situated next

### 3.2 Preparing the instrument

Picture below illustrates meter's front and back panel with most important elements marked:

- To turn on the meter press ON/HOLD button.
- To set the scale press SET button.

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Name of chosen scale will appear in the ***scale indicator*** field.
To see detailed description of each scale go to *Available scales* section.

***Max. Hold mode***

If the measured area is not easily reachable and it is impossible to read the value while measuring, the ***Max. Hold*** mode may be used. After choosing that mode the measured value is not refreshed continuously. The meter will show only the highest value gained from numerous measurements.

**! Caution:** Even single touching of sensor plate or electrodes during this mode will cause a highly inaccurate outcome. That in turn will result in the need of repeating the whole measurement process.
The measurement in that set may be repeated by switching the mode into Normal and then into Max. Hold again.

***Auto turn-off***
In order to maximize batteries lifetime, the meter automatically turns off after 12 minutes. This function is always active and can't be switched off.

***Service info***
This mode enables to check some meter service information which include:

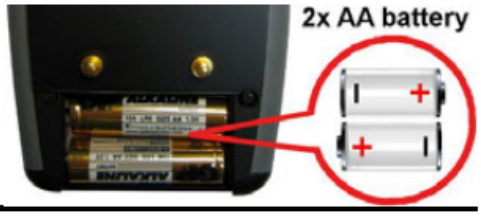
- Total working time
- Quantity of switching-on
- Software version
- Date of production
- Batteries voltage

This mode may be accessed by pressing and holding the SET button for 5 seconds and then by pressing ON/HOLD button simultaneously. All the information will be shown as long as the SET button will be held.

## 5 CHANGING BATTERIES

LI9200 meter is battery powered. It uses 2 AA type batteries. Both, rechargeable and standard batteries may be used.
Battery status shows the remaining capacity of the batteries. If the currently used batteries are almost out of charge, the battery icon will show empty.
While changing batteries into new ones **both batteries** should be replaced. Replace only with 2 of the same type of batteries and only fully charged ones.

Battery arrangement scheme is shown in the picture:




## 6 MAINTENANCE

- Though robust in design, this instrument is precision-machined. Never drop it or knock it over
- Always clean the instrument after use.
- Clean the instrument using a soft dry cloth. Never clean the instrument by any mechanical means such as a wire brush or abrasive paper. This may cause, just like the use of aggressive cleaning agents, permanent damage.
- Do not use compressed air to clean the instrument.
- Always keep the instrument in its case when not in use.

## 7 DISCLAIMER

The right of technical modifications is reserved.

The information given in this manual is not intended to be exhaustive and any person using the product for any purpose other than that specifically recommended in this manual without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. Whilst we endeavour to ensure that all advice we give about the product (whether in this manual or otherwise) is correct we have no control over either the quality or condition of the product or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability whatsoever or howsoever arising for the performance of the product or for any loss or damage (other than death or personal injury resulting from our negligence) arising out of the use of the product. The information contained in this manual is liable to modification from time to time in the light of experience and our policy of continuous product development.

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