

## Operating Instructions

### Description:

The electronic moisture meter 011 is used to determine in a matter of seconds the moisture in snow.

**Materials:** snow

**Measuring range:** 0-100 % water content

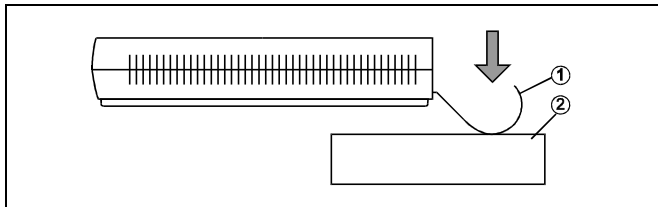
snow temperature range -30 - +40 °C

working temperature range -30 - +40 °C

storage temperature range -30 - +70 °C

**ATTENTION: avoid dew water!**

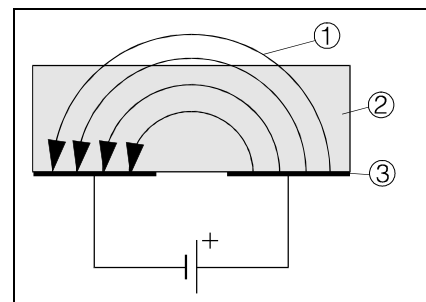
### Method of operation



The measuring electrodes ① of the meter are pushed during the measuring process on the material to be measured ② so that a high frequency electrical field is able to pass through the material. A micro processor receives the measured signals and determines from the measured value the percentage water content taking into account the set offset adjustment.

### Measuring principle:

The meter works in accordance with the principle of an opened plate capacitor. The capacity of the capacitor depends on the material- (dielectric)-constant of the material in between the plates. Compared with air ( $\epsilon_r = 1$ ), water has a very high dielectric-constant ( $\epsilon_r = 80$ ). The water content of a wet material can therefore be determined by determining the dielectric constant of this material.



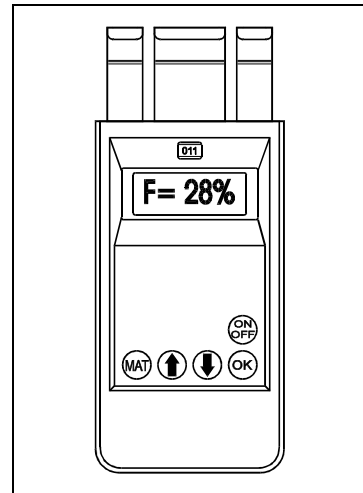
① field lines

② material to be measured

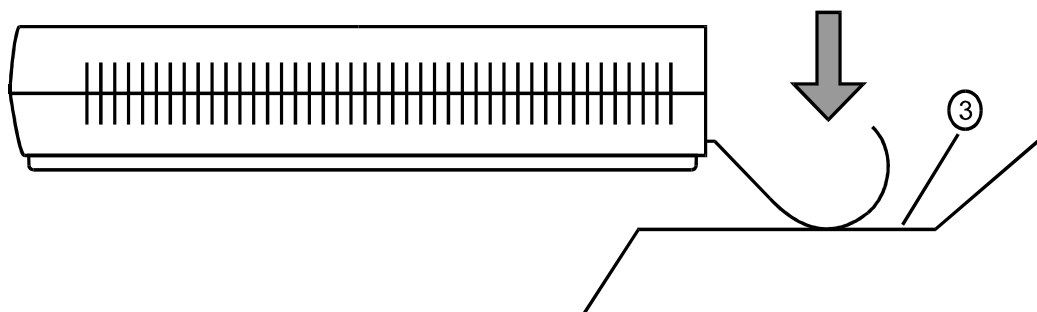
③ plate capacitor

### Safety tips:

- Follow the operation instruction
- Only use the meter as directed
- Keep the meter away from live and current carrying parts
- Keep the meter dry
- Avoid impacts
- Protect the meter from heat
- Keep a meter clean and try to prevent dirt from entering the case housing
- The meter must be repaired or serviced only by qualified specialists



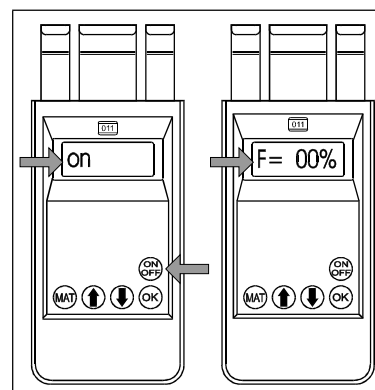
## Measurement Preparation



- look for an **even, smooth surface** ③ (minimum size for the measurement 10 x 10 cm)
- **minimum distance of the electrodes** from the edge of the surface: 1 cm

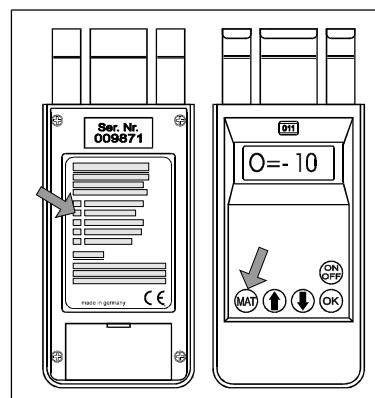
## Turn on the meter

- pushing the ON/OFF-button, the display shows „on“, now hold the meter into the air so that the zero point measurement and correction can be carried out
- if there is a zero-point error the instrument shows “ZH-ERROR” or “ZL-ERROR”
- release ON/OFF-button, in the display the adjusted Offset is shown for a short time, e.g. „O= -10“, if the adjusted offset is -10.
- then, the display shows for example „F= 28%“ the meter is ready for use



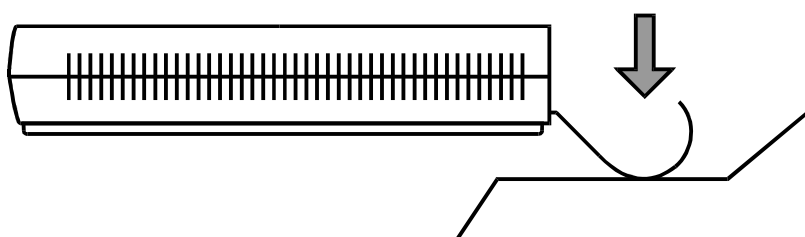
## Offset adjustment

- turn the meter on and then push the „MODE“ button. The meter shows „O=- 10“ in the display if the adjusted offset was -10
- with the arrow buttons the corresponding offset can be adjusted
- finally the „OK“ button has to be pushed to confirm the adjustment.



## Measuring

- hold the meter on the snow without making an impression.
- read the moisture value



## Turn off the meter

- push ON/OFF-button until the display shows „off“
- after releasing the ON/OFF-button, the meter is turned off

**If no measurement is carried out for one minute, the meter turns off automatically**

## Checking measuring quality

We recommend carrying out regular periodical controlling check measurements, as different local circumstances may need different adjustments.

## Battery

The meter works with a commercial 9V block battery. The capacity of this one is continuously controlled. If the battery is running low the display shows a „B“ instead of the „%“ on the final position.

## Change battery

- Open the battery box for example with a small screw driver
- take out the battery
- insert new battery and connect it to the battery clip with the correct polarity

## Attention!

In accordance with battery legislation, all used batteries must be disposed of in special battery collection bins.

**The disposal of old or used batteries as part of normal waste is not allowed!**

## Optional extras

- test block to check the sensitivity of the moisture meter (state the type of the meter)
- special calibration of the moisture meter
- different types of moisture meters

Our operating instructions are intended for guidance and to provide information on our products and their uses. They should not be taken to imply special characteristics or suitability for any specific purpose, other than those stated.

We constantly work to improve our products and reserve the right to alter our products and operating instructions without advanced notification.

DOSER MESSTECHNIK GMBH & CO.KG - Kemptener Straße 73 - D-87629 Füssen - Germany  
Tel: +49 (0) 8362 9159-402 - Fax: +49 (0) 8362 9159-407 - [info@doser.de](mailto:info@doser.de) - [www.doser.de](http://www.doser.de)

