Paper Moisture Tester KH-70 Instruction Manual

SWITCH-ON

By pressing this key once, if the device is off, the unit is switched on.

SWITCH-OFF

By pressing this key once, if the device is on, the unit is switched off.
Or: Automatically after approx. 2 minutes.

ALARM FUNCTION

The KH-70 has the possibility to give an acoustic alarm in case
of an user selectable alarm threshold is reached or exceeded. By pressing this key and hold , the actual alarm threshold value (L6 – L36) is shown in the display. To de-activate the alarm function, the unit has to be switched off. After 2 sec. the unit is ready to take measurements.

HOLD – FUNCTION:

If this key is being pressed before measurement is taken, the measured value is kept „frozen". Now it is possible to take measurements at places where the values can't be read directly.
The activated HOLD function is indicated with a colon ":" at the left side of the display. By pressing this key again, the HOLD-function is de-activated.

INSTALLING BATTERY

- Open the battery lid on the backside of the meter.
- Install a 9 volt L6R22.
- Close the lid.

A low voltage is indicated "▭" at the left ; upper side on the display when the battery needs to be replaced. A new battery should be inserted to achieve correct measuring results.

ENVIRONMENT PROTECTION

According to the regulations for battery dispose, all batteries must be returned to the trade or to battery collecting points. You are not allowed to dispose batteries through the household waste.

ONLY FOR EU COUNTRIES

Do not dispose of electrical tools together with household waste material ! In observance of European Directive 2002/96/ EC on waste electrical and electronic equipment and its implementation in accordance with national law, electric tools that have reach the end of their life must be collected separately and returned to an environmentally recycling facility.

SELECTION OF CARDBOARD GROUPS OR PAPER GROUPS

Depending on the specific weight of the paper, different groups of paper are applied. Group P3 is used for papers of 80 gr. For lighter papers one should choose P2 or P1, equivalently P4 – P6 for heavier paper qualities.

MEASURING TAKEN ON CARDBOARDS:

To measure cardboard, the cardboard-groups C1 – C6 are chosen. Choose the groups from the equivalent structures shown in the drawing beneath.

C

C1	3.6 mm	2 Sheets
C2	6.5 mm	3 Sheets
C3	2.8 mm	3 Sheets
C4	1.5 mm	6 Sheets
C5	1.0 mm	3 Sheets
C6	2.0 mm	6 Sheets

P

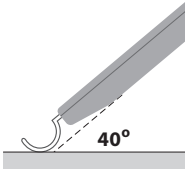
P1	Filter paper, Tissue paper
P2	Semi-chemical pulp, crepe paper, Test liner
P3	Packaging paper, Fluting paper, 80 g/sqm
P4	Kraft paper
P5	Offset paper
P6	customer-specified calibration curves

Note: Due to different contents and various measuring conditions, the necessary calibration curve may deviate from the saved one. After the unit has been switched on, the previous selected density is indicated in the display P1-P6 and C1-C6. After 2 sec. the unit is ready to take measurements.

MEASURING PROCEDURE

After selecting the appropriate material-group the unit must be hold up in the air for automatic 0-correction. After about 2 sec. "00.0" is displayed and the unit ready for measuring.

Hold the spring electrodes without excessive force and in a approx. 40° angel to the material.



All of the 3 measuring springs must be in good contact with the material to be measured.
Measurements may be taken in different spots of the material, or the measuring springs could be slided across the material.

ATTENTION: In principle, care has to be taken regarding the base underneath. No metal parts should be near. The best measuring results are obtained, when the material to be measured is hold up in the air, or a Styrofoam base with a minimum thickness of 50 mm is being put beneath the material to be measured.

MEASUREMENTS TAKEN ON PAPER:

A metal base or metal parts in the surroundings cause unfavourable influences to the measuring results. Care has to be taken that air gaps between the layers are avoided as much as possible. For measurements taken on turning rolls, these should be taken after the copper brushes; just to avoid electrostatic discharges over the unit.

THIN MATERIALS

For single materials, thinner than 10 mm, the sensitivity of the meter is normally not enough. However, comparing measurements to determine wet spots in the material can still be performed.

To obtain a more accurate measuring result we recommend measurements in a pile without air spaces between the single parts and with a minimum thickness of 20 mm for the pile.

BASE

With material thickness < 50 mm the base material is very important.
Avoid a metal base. The best results are achieved if the material to be measured is hold into the air. Polystyrene material with a minimum thickness of 20 mm can also be used.

WET SURFACES

In case of material with wet surface a PVC-foil can be used between the material and measuring springs electrodes.

REFERENCE MEASUREMENT

How to locate wet spots:

1. Set the Material code to C1 or P1
2. Hold the spring electrodes to a surface you know is dry
3. The received value corresponds to a "dry material" and could be used as reference value
4. Now it is possible to locate moist and leakage using the reference value
5. By moving the measurement springs over the surface you could quickly locate the leakage and find out about the extent of the moist damage

TECHNICAL SPECIFICATIONS

Measuring method	High frequency dielectric constant measurement
Measuring range Paper materials	0-30 % moisture content (H2O)
Measuring range Cardboard	0-175% moisture content (H2O)
Working conditions, temp/ RH	-10 to +60°C / 0-90% (non condensing)
Accuracy	+/- 2%
Resolution	0,1%
Field penetration depth	Approx.. 50 mm
Max. storage temperature	-20 to +60°C
Power supply	9 V alkali battery
Display	LCD digital
Dimensions	150 x 72 x 25 mm
Weight approx.	150 g. incl. battery
Housing material	ABS
Sensor material	Chrome plated steel
Carrying case	Soft

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