
NOTES


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1.0 INTRODUCTION

1. Put the measuring device on a flat surface.
2. Make sure that the measuring chamber is completely empty. It is important that no material is left in the measuring chamber when you turn on the device.




3. Switch on the humimeter FS1 by pressing the power button () for 3 sec.





4. As the next step, please do the self calibration. The word "calibrate" will show up on your display. Accept by pressing the button.



5. In case a menu point is shown, press the left button () until you reach the measuring window.



6. Select the right calibration curve for your material under test using the buttons  or .

7. Fill up the measuring device with the sample material. The filling needs to be done slowly and constantly to ensure reproducible results. The measuring chamber has to be filled up to the edge!!



Important:

Place the measuring device on a flat surface, or hold it in your hand vertically by the filling. The filling needs to be done slowly and constantly. DO NOT SHOVEL OUT OF THE BUNCH!!!

8. The display shows the measuring result.
9. Empty the humimeter and ensure that no grain rests are accumulated in the measuring chamber.



NOTES

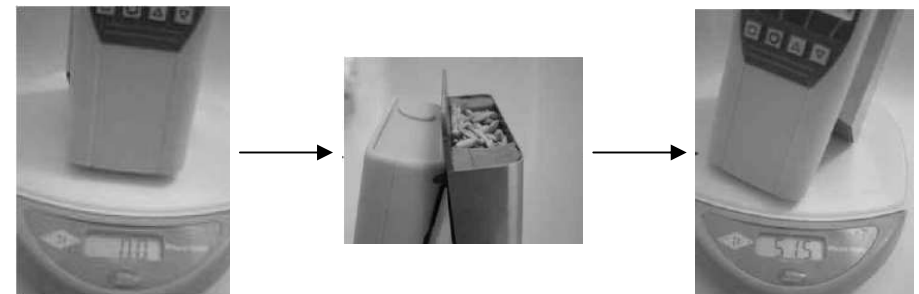
NOTES

2.0 CALIBRATION CURVES

Name of Calibration curve	Material under test	hectolitre	Measuring range
70 corn	corn	70	10 up to 25%
corn 75	corn	75	10 up to 25%
80 corn	corn	80	10 up to 25%
rye	rye		10 up to 20%
80 Whe/Tri	Weizen / Triticale	70	10 up to 23%
Whe/Tri 75	Weizen / Triticale	75	10 up to 23%
80 Whe/Tri	Weizen / Triticale	80	10 up to 23%
60 barley	barley	60	10 up to 23%
barley 65	barley	65	10 up to 23%
70 barley	barley	70	10 up to 23%
oats 40	oats	40	10 up to 18%
50 oats	oats	50	10 up to 18%
rapese 65	rapese	65	5 up to 15%
soybean	soybean		8 up to 18%
sunflower	sunflower		8 up to 18%
horsebean	horsebean		5 up to 20%
rice peeled	rice peeled		9 up to 18%
reference	-----	-----	-----

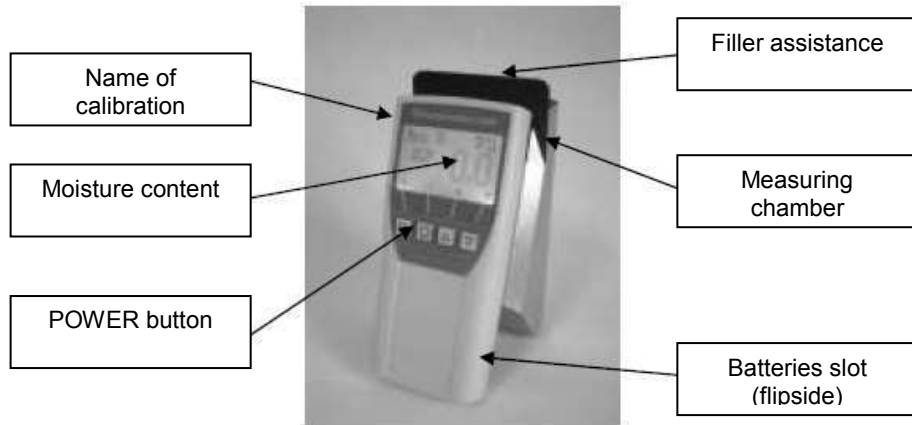
- Reference: To test the humimeter FS1.
- Grey measuring values are no valid measurement values.

3.0 CRUDE HECTOLITRE APPOINTMENT



Put the empty device on the scale → turn on the scale → fill up the device with the material under test → discard at the edge of the measuring chamber → put the filled device on the scale → read out the value of the scale → select the right calibration curve.





4.0 DESIGN OF THE DEVICE



4.1 Menu

There are 2 menu levels.

The symbols show the key functions in the different menus.

1. Type Selection :    

To enter the second menu level you have to press the both arrow keys when you turn on the device

2. Main menu:
Options
Date / Time
Language
Unlock
°C / °F
Password
Reset
Materialcalib.
Status

10.0 WARRANTY

Electromatic Equipment Co., Inc. (Electromatic) warrants to the original purchaser that this product is of merchantable quality and confirms in kind and quality with the descriptions and specifications thereof. Product failure or malfunction arising out of any defect in workmanship or material in the product existing at the time of delivery thereof which manifests itself within one year from the sale of such product, shall be remedied by repair or replacement of such product, at Electromatic's option, except where unauthorized repair, disassembly, tampering, abuse or misapplication has taken place, as determined by Electromatic. All returns for warranty or non-warranty repairs and/or replacement must be authorized by Electromatic, in advance, with all repacking and shipping expenses to the address below to be borne by the purchaser.

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9.0 TECHNICAL DATA








Resolution of the display	0,1% water content 0,5°C temperature
Measuring range	5 up to 30 %
Operation temperature	0°C up to 40°C
Storage temperature	-20°C up to 60°C
Temperature compensation	Automatically
Power supply	4 pcs. 1.5 Volt AA Alkaline batteries (1800 measurements)
Auto Switch OFF	After app.5 minutes
Current consumption	30 mA (with light)
Display	128 x 64 matrix display (lighted)
Dimensions	260 x 70 x 250 mm
Weight	app. 360 g (with batteries)
Degree of protection	IP 40
Scope of supply	measuring device HMC-FS1 4 x 1.5Volt AA Alkaline Batteries
Optional accessories	Plastic case Digital scale 1000g Measuring cup 0.5 litre

4.2 Keypad symbols

Measuring window:

-  : Power ON / OFF
-  : Switch upper
-  : Switch lower
-  : Hold

Menu:

-  : Enter
-  : Switch upper
-  : Switch lower
-  : Exit
-  : Yes
-  : No
-  : OK

5.0 MOST COMMON REASONS FOR MISS READINGS

- **Product temperature out of application range**

Material **below 0°C** resp. **above 40°C** (32 to 104 °F) may cause faulty measurements. The storage of cold material in a warm storage area usually creates condensed water which may lead to major measuring errors.

- **Not adjusted material**

Let your humimeter FS1 acclimate to the surrounding temperature of the material for approximately half an hour.

A very high temperature difference has a negative effect on the stability of the measurement result.

- **Wrong calibration curve**

Before you measure your sample, double check the correct selection of the calibration curve.

- **Wrong hectolitre range**

- **Wet or mouldy material**

- **Frozen measuring material.**

6.0 DEVICE MAINTENANCE INSTRUCTIONS

To provide a long lives of your device please do not expose it to strong mechanical loads or heat e.g. dropping it or direct sunlight exposure.

Clean your device using a **dry cloth**. The measuring chamber needs to be cleaned with a **dry and soft brush**.

Any kind of wet cleaning damages the device. The instrument is not rainproof. Keep it in dry areas.

We recommend an interval ISO-conforming device check with the drying method.

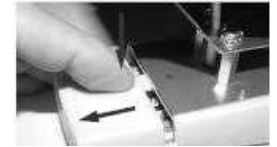
Electromatic will also provide for a fee a test with a calibration certificate.

7.0 CHANGING BATTERIES

Your new device is provided with batteries.

Changes the batteries:

1. Press with your finger onto the arrow of the battery cap and pull it back.
2. Remove the empty batteries.
3. Put four new batteries in the device. Make sure the position of the battery poles is correct.
4. Press down the batteries and close the cap.



8.0 DETERMINATION OF THE MATERIAL MOISTURE

The principle is a comparison measurement with the drying out method according to DIN 10350: 1967 09. Take the measured sample and weigh it. Dry it out in an oven and weigh it again. Following formula can be taken to determine the absolute moisture:

Note: The dried material may not be used any more for measuring purposes!

$$\%F = \frac{M_n - M_t}{M_n} \times 100$$

M_n : Mass with average moisture content

M_t : Mass of the dried sample

%F : Calculated absolute moisture

Exemption from liability

For miss-readings and wrong measurements and of this resulting damage we refuse any liability. This is a device for quick determination of moisture. The moisture depends on multiple conditions and multiple materials. Therefore we recommend a plausibility check of the measuring results. Each device includes a serial number and the guarantee stamp. If those are broken, no claims for guarantee can be made. In case of a faulty device, please contact Electromatic.

FS1

COMPACT GRAIN MOISTURE METER

