

---

---

---

**NOTES**

---






---

---

**TABLE OF CONTENTS**

1.0	Introduction .....	2
2.0	Calibration curves .....	4
3.0	Design of the device .....	5
	3.1 Menu	
	3.2 Keypad symbols	
4.0	Most common reasons for miss readings .....	8
5.0	Device maintenance instructions .....	8
6.0	Changing batteries .....	9
7.0	Determination of the material moisture .....	9
8.0	Technical data .....	10
10.0	Warranty .....	11

## 1.0 INTRODUCTION

1. Place the empty provided cup (0.5 litre) on the scale and turn the scale on. It shows 0.0 gram.
2. Fill up the cup with the sample material (+/- 1.0g). The fill quantity is shown on the upper left corner on the display of the humimeter FS2.
3. 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.
4. Switch on the humimeter FS2 by pressing the power button (  ) for 3 sec.
5. As the next step, please do the self calibration. The word "calibrate" will show up on your display. Accept by pressing the  button.
6. In case a menu point is shown, press the left button (  ) until you reach the measuring window.
7. Select the right calibration curve for your material under test using the buttons  or .



## 9.0 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.

THE FOREGOING WARRANTY'S IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE OR APPLICATION. ELECTROMATIC SHALL NOT BE RESPONSIBLE NOR LIABLE FOR ANY CONSEQUENTIAL DAMAGE, OF ANY KIND OR NATURE, RESULTING FROM THE USE OF SUPPLIED EQUIPMENT, WHETHER SUCH DAMAGE OCCURS OR IS DISCOVERED BEFORE, UPON OR AFTER REPLACEMENT OR REPAIR, AND WHETHER OR NOT SUCH DAMAGE IS CAUSED BY MANUFACTURER'S OR SUPPLIER'S NEGLIGENCE WITHIN ONE YEAR FROM INVOICE DATE.

Some State jurisdictions or States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. The duration of any implied warranty, including, without limitation, fitness for any particular purpose and merchantability with respect to this product, is limited to the duration of the foregoing warranty. Some states do not allow limitations on how long an implied warranty lasts but, notwithstanding, this warranty, in the absence of such limitations, shall extend for one year from the date of invoice.

Electromatic Equipment Co., Inc.  
600 Oakland Ave. Cedarhurst, NY 11516 - USA  
Tel: 1-800-645-7330 / Tel: 516-295-4300 / Fax: 516-295-4399

Every precaution has been taken in the preparation of this manual. Electromatic assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of information contained herein. Any brand or product names mentioned herein are used for identification purposes only, and are trademarks or registered trademarks of their respective holders.

## 8.0 TECHNICAL DATA






<b>Resolution of the display</b>	0,1% water content 0,5°C temperature
<b>Measuring range</b>	5 up to 50 % depending on the material
<b>Operation temperature</b>	0°C up to 40°C
<b>Storage temperature</b>	-20°C up to 60°C
<b>Temperature compensation</b>	Automatically
<b>Power supply</b>	4 pcs. 1.5 Volt AA Alkaline batteries (1800 measurements)
<b>Auto Switch OFF</b>	After app. 6 minutes
<b>Current consumption</b>	55 mA (with light)
<b>Display</b>	128 x 64 matrix display (lighted)
<b>Dimensions</b>	260 x 70 x 250 mm
<b>Weight</b>	app. 1.3 kg (with batteries)
<b>Degree of protection</b>	IP 40
<b>Scope of supply</b>	Plastic case Digital scale 1000g Measuring cup 0.5 litre 4 x 1.5Volt AA Alkaline Batteries

8. Fill up the measuring device with the sample material. The filling needs to be done slowly and constantly to ensure reproducible results.




9. The display shows the measuring result.



10. To save the results in the stor menu press the  (  button). The storage was successful when the number in front of the symbol  increased. To reach the store menu please press (  ) until the  appears.



11. To name the saved results press the  button.

12. Empty the humimeter and ensure that no grain rests are accumulated in the measuring chamber.



## 2.0 CALIBRATION CURVES

Name of Calibration curve	Material under test	Fill quantity
300g corn stand.	corn standard	300g
300g corn hand	corn hand reaped	300g
300g rye	rye	300g
300g triticale	triticales	300g
300g whea/spe.pe	wheat / spelt peeled	300g
300g barley	barley	300g
190g oats	oats	190g
300g rape	rape	300g
230g pumpkin	pumpkin seed	230g
310g peas	peas	310g
300g soybean	soybean	300g
277g beetle beans	beetle bean	277g
295g horse bean	horse bean	295g
180g sunflower	sunflower seed	180g
reference	-----	-----

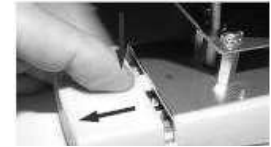
- Reference: To test the humimeter FS2. Do not use for measuring the moisture!

## 6.0 CHANGING BATTERIES

Your new device is provided with batteries.

Change 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.



## 7.0 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.

---

---

---

#### 4.0 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 FS2 adjust 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 fill quantity**

Fill exactly the right weight ( $\pm 1.0$  g) in the measuring chamber.

- **Wet or mouldy material**

- **Frozen measuring material.**

#### 5.0 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.

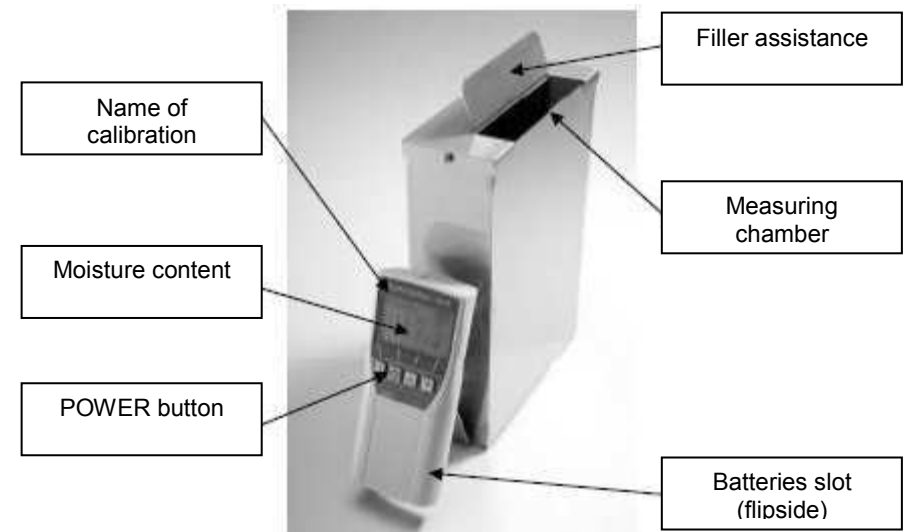
Electromatic will also provide for a fee a test with a calibration certificate.

---

---

---

#### 3.0 DESIGN OF THE DEVICE



---









---

---

### 3.1 Menu

There are 3 menu levels.

The symbols show the key functions in the different menus.

1. Type Selection :    
2. Store Menu :    
3. Main menu:
  - Edit Logs
    - Manual Logs
    - Clear Logs
  - Print Logs
    - Last Log
    - All Logs
    - Clear
  - Send Logs
    - Manual Logs
    - Clear Logs
  - Options
    - Date / Time
    - Language
    - Unlock
    - °C / °F
    - Password
    - Reset
    - Materialcalib.
  - Status









---

---













---

### 3.2 Keypad symbols

#### Measuring window:

-  : Rolling Menu
-  : Power ON / OFF
-  : Switch upper
-  : Switch lower
-  : Save
-  : Hold
-  : Watch the measuring rows
-  : Suppliers data can be added

#### Menu:

-  : Enter
-  : Switch upper
-  : Switch lower
-  : Exit
-  : Enter numbers
-  : Enter letters
-  : Next or right
-  : Left
-  : Yes
-  : No
-  : Shift
-  : OK

# FS2

## GRAIN MOISTURE METER

