8.0 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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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, not withstanding, this warranty, in the absence of such limitations, shall extend for one year from the date of invoice.

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1.0 FIRST SETTING INTO OPERATION

The function of your instrument has been examined and calibrated before delivery. Your measuring device should be supplied with a battery by the manufacturer. If this is not the case, open the battery compartment and stick a 9 V block battery or a charged accumulator onto the connecting contacts. Then put the battery in the battery compartment. Make sure that the power cable does not get caught in the lid.

Press the power switch (**ON**) at the front of the instrument and the display will go on. If this is not the case, check if the batteries are charged.

If you hold your measuring instrument in the air you will see a certain value on the display depending on the switch position (see item “Technical data”).

2.0 MEASURING PROCEDURE

Exact measuring results can best be achieved by adjusting the measuring instrument to the respective product temperature. So you should store the device near the object you wish to measure 15 Minutes before measurement. A temperature difference of more than 5°C (9°F) results in a falsified measured value.

Adjust the switch by shifting it to the correct position (refer to sort of wood chips). Turn on your measuring device and put it on the product with suitable pressure by holding the moisture meter in one hand.

The hole surface of the sensor must lay smooth on wood chips, but chips does not lay onto the sensor plate.

Take care that you hold your measuring instrument with a moderate but sufficient pressure on the product because the compressed density influences the measuring result. Make sure that you always exert the same amount of pressure since the density of the material increases when it is pressed tighter or softer; so you could get different measuring results every time you measure the material. You must not touch the sensor plate or electronic box during the measurement.

The absolute moisture (depending on the wet weight) can immediately be seen on the LC-Display.

The device turns off automatically after 90 seconds or when the measuring range has been exceeded.

7.0 TECHNICAL DATA

Measuring value	material moisture (depending on the wet weight)
Measuring range	up to 30 % (max. 40 % depending on the material)
Dissolution	1,0% material moisture
Depth of measurement	max. 200 mm
Minimum of chips pile	300 mm
Air-setpoint	switch position 3: 2 % (+/-1%)
Working temperature	5°C to 35°C (41°F to 95°F)
Temperature compensation	automatically from 5 to 35°C
Power supply	9V alkaline battery or NiCd accumulator
Drawing of current	5mA, sufficient for about 4000 measuring procedures, when BAT appears on the display, still about 200 measurements are possible
Display	three-digit LC-Display
Dimensions	100 x 140 x 310 mm
Weight	(without battery) approx. 380 grams

6.0 CARE REGULATIONS

In order to guarantee that your measuring device is kept in good condition, please take care that it is not imposed to too much mechanical strain (it should not be dropped or exposed to excessive temperatures). Always use a dry cloth when cleaning your measuring device because it can be destroyed by incoming water or other cleaning agents.

Do not leave your device unattended – put it back into the delivered plastics case after the measuring procedure.

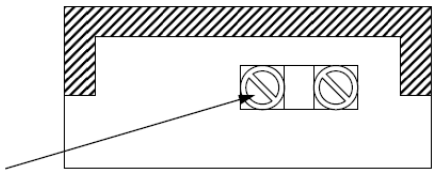
We recommend an ISO-approved examination of the device in regular intervals by applying the kiln drying method. If needed, Electromatic will also carry out a calibration at your expense. In this case a calibration certificate will be issued and delivered.

Zero point adjustment

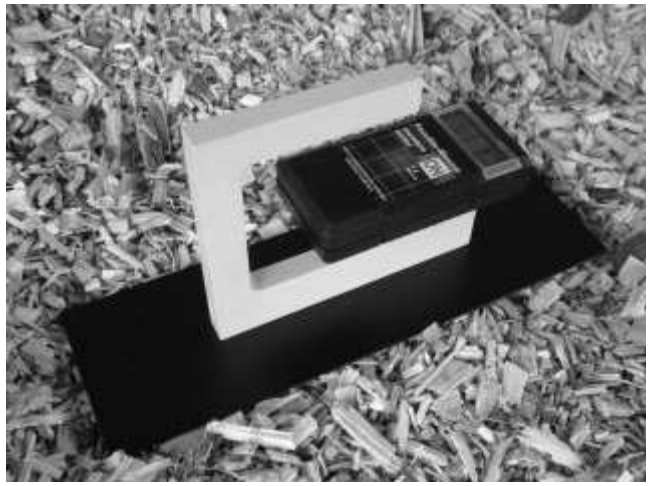
Ambient temperature must be 20 to 25 °C (68 to 77°F). Shift the selector switch to **3**, put off the lid of the battery compartment, take out the battery (which must still be stuck to the connecting contacts). Then put off the serial number tag carefully. Now hold the device into the air with one hand and adjust the inner potentiometer as long as the following values appear on the display:

2 % (at switch position 3)

Put on the serial number tag again, insert the battery and close the lid.



Inner potentiometer



Switch position	Bulk density [kg/m³]	Sort of wood chips	Measuring range
1	100 - 150	softwood low density	40 %
2	150 - 200	softwood	37 %
3	200 - 250	2/3 soft- 1/3 hardwood	34 %
4	250 - 300	2/3 hard- 1/3 softwood	32 %
5	300 - 350	hardwood	30 %
6	350 - 400	hardwood high density	28 %

3.0 MEASURING METHOD

Even if the kiln drying method is the only measuring procedure appropriate for verification according to CEN/TS 14774-1 it is time consuming, in-situ application can very seldom be carried out; the method also has the disadvantage that the samples are destroyed. Electromatic has developed FS_200-HT Wood chips moisture meter – a measuring method which provides exact measuring results within seconds. Yet it is not possible to develop a measuring device that is ideal under every single condition; even FS_200-HT has a certain limited range to provide optimum results. In order to minimize incorrect applications resulting from that fact we have provided you with a list:

Most common reasons for measuring errors

- ***Product temperature NOT between +5 and +35 °C***

  You can not measure wood chips which are contaminated with ice or snow. Before measuring you must conditioning the chips at a temp. > +5 °C.

- ***Product temperature beyond ambient conditions***

  The temperature of the measuring device and of the product should be nearly equal.

- ***Wrong switch position***

- ***Uneven pressing***

- ***Product pile not thick enough***

  If the pile of wood chips is to thin (500mm) you get wrong measuring results.

- ***Electrically conductive material***

  All metallic objects influence the measuring result in a negative way and must no be positioned within a range of 500 mm below the sensor area.

- ***Exceeding of measuring range***

  This can occur depending on the type of product and the position of the selector switch. It is indicated on the display by blinking and means that the measuring accuracy is less precise.

4.0 MEASURING PRINCIPLE

The material in the measuring field is penetrated by an electromagnetic field whose features change due to the material's quantity of moisture. Because of the characteristic polarity of the water molecule and the thus resulting high relative permittivity of water (about 83) the capacity of the measuring field changes together with the changing moisture of the measuring sample.

5.0 EXCLUSION OF LIABILITY

The producer can not be made liable for any measuring errors and the damage that might result from it. This measuring principle is a quick measuring procedure which can be influenced by product and user-specific margin conditions. Therefore it is recommended to carry out a plausibility check of the measured values. In every measuring device there is a serial number and a seal of warranty. If this seal is broken no warranty claims will be accepted. In case of defect please contact CheckIne Europe.

CHECK·LINE®
BY ELECTROMATIC

FS-200HT

WOOD CHIP MOISTURE METER

OPERATING INSTRUCTIONS

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