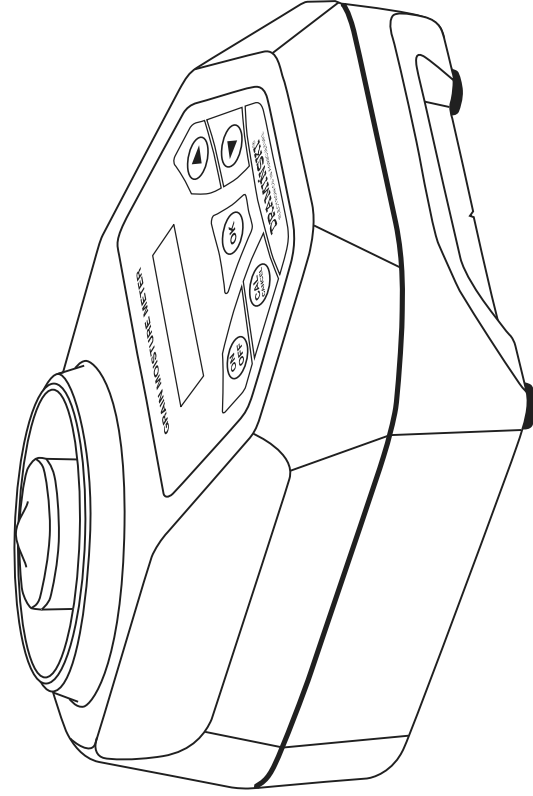


GRAIN MOISTURE METER



EN INSTRUCTION MANUAL

DE BEDIENUNGSANLEITUNG

FR MODE D'EMPLOI

ES MANUAL DE USO

RU РУКОВОДСТВО ПО ЭКСПЛУАТАЦИИ

ISO 9001:2008 | **CE**

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INTRODUCTION

DRAMINSKI GRAIN MOISTURE METER

enables to measure the humidity of seeds of 30 below mentioned species of plants in following ranges:

1. rye	7,6 % – 35,0 %	16. shelled sunflower seeds	6,0 % – 14,9 %
2. common wheat	7,2 % – 35,0 %	17. unshelled sunflower seeds	5,5 % – 15,6 %
3. strong variety of wheat	7,3 % – 35,0 %	18. perennial rye grass	6,4 % – 22,0 %
4. triticale	7,4 % – 35,0 %	19. red clover	5,7 % – 26,3 %
5. spring barley	8,0 % – 35,0 %	20. white clover	4,8 % – 25,0 %
6. oats	8,0 % – 35,0 %	21. bean (small size)	8,9 % – 30,4 %
7. buckwheat	6,5 % – 35,0 %	22. bean	8,9 % – 30,0 %
8. broadbean	7,9 % – 35,0 %	23. mustard	7,3 % – 21,6 %
9. yellow lupine	6,6 % – 35,0 %	24. millet	4,0 % – 18,6 %
10. blue lupine	7,5 % – 35,5 %	25. soya bean	7,5 % – 28,8 %
11. pea	8,0 % – 33,0 %	26. sorghum	7,5 % – 28,8 %
12. field pea	7,8 % – 35,0 %	27. flax	5,4 % – 20,5 %
13. rape	4,0 % – 33,0 %	28. white rice	7,4 % – 18,2 %
14. bean	7,7 % – 30,0 %	29. grey rice (rough paddy)	9,1 % – 21,4 %
15. maize	8,0 % – 43,0 %	30. coffee	7,7 % – 30,0 %

The results of moisture measurement may vary slightly due to temperature of the sample. Upon request, adjustments can be made to test other kinds of seeds.

CONSTRUCTION AND EQUIPMENT

Grain Moisture Meter is produced in plastic casing with membrane keyboard, LCD display, measurement chamber, and compartment for battery.

The meter is supplied with:

1. Dosage tube with slider.
2. Plastic carrying case for multiple use.
3. 9 V battery (alkaline).



Batteries are included, but need to be installed before using the meter (see **chapter 5 „BATTERY RE-PLACEMENT“**). The battery compartment is on the bottom side of the meter.

A display and a keyboard are on the front panel. The measurement chamber above the display is where tested seed is to be placed. There is a temperature sensor on the bottom of the chamber.

Device is placed in plastic carrying case for multiple use. It is made of material resistant to atmospheric conditions, most chemical substances and allowing easy cleaning.

PRELIMINARY REMARKS

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CHAPTER

1. Working according to manual will enable to obtain expected accuracy and recurrence in moisture measurement.

It is recommended to make three measurements. The average of three measurements is the final result.

2. Temperatures of sample and instrument should be similar (sensor reacts with some delay).

3. Cleanness of sample for measurement has an influence on obtaining accurate result. Sample should not contain husks, tailings and dirtinesses.

4. You should check if there are no seeds in measurement chamber before work. You should remove any remainings from earlier measurement from the chamber. **Before turning on an instrument measurement chamber should be clean and empty.**

5. The way of filling the measurement chamber is important and may influence precision of measurement results.

6. Producer suggests using alkaline batteries. The electrolyte which comes out of ordinary battery after exhausting may damage the device. Alkaline battery works longer and there is no risk of outflow of electrolyte.

7. When the limit ranges of measurement are exceeded the display shows:

„<8%“ (below range), when moisture of measured sample is lower than 8%.

„>35,0%“ (above range), when moisture of measured sample is higher than 35%.

8. If important variations of readings appear in comparison with laboratory results of the samples, you should use modification mode (**see the chapter 4: „DATA MODIFICATION“**).

To get skill in usage of device you should make several measurements (for example with one kind of seed) and notice results, to observe the spread of results.

We recommend reading the chapter 3 „MEASUREMENT“ and follow these rules in practise.

ATTENTION!

Results obtained with this device can not be used for trade calculations.

CHANGE OF THE LANGUAGE (optional)

If you want to change the language please press „OK“ button while the tester is turned off. Pressing the button constantly please turn the tester on by pressing the „ON / OFF“ button. Using the arrows, „▲“, „▼“ choose the language: Hungarian (HUN), Czech (CZE), Polish (POL), Spanish (ESP), French (FRA), German (DEU), English (GBR). Confirm with „OK“ button.

MEASUREMENT

The procedure of measuring the grain humidity is following:

- a) Turn on the power supply with the red „ON/OFF” button.
The name of the device will be shown for a while on the display and then the model and serial number. The name of the last measured sample will always appear afterwards, for example „rye”.
- b) The appropriate species of grain should be chosen using „▲” or „▼” buttons.
- c) Having chosen the name press „OK” button. Under the name there will be the instruction „PLEASE WAIT” displayed for a short time (during this time the device measures the electrical capacity of the empty chamber).

ATTENTION!

While the instruction „PLEASE WAIT” is displayed the measurement chamber should be empty and clean, as well as while turning on the power supply of the device. During this time the measure-

Having performed these actions you can put the dosage tube on the measurement chamber of the meter (on the lower edge of the feeder there is a special slant). You should then pull out the slider, which will cause the sample to fall into the measurement chamber.

ATTENTION!

While pouring the seeds you should pull out the slider with a steady, but decided movement which lasts about 1 second. Upper edges of the measurement chamber (red elements) should be completely covered by seeds after filling.

- e) Having filled the measurement chamber you should not move or shake the device. You should only press the button „OK”.

Under the name of the sample there will be the information: „**analysing**” displayed. After a short time the result of the measurement will be shown – the percentage of humidity and temperature in C degrees. (the final humidity reading will appear after the temperature’s influence is taken into ac-

ment chamber should not be touched. You should not put your hand inside or put any objects in.

- d) When the instruction „**pour in seed**” appears you should put the measured seeds into measurement chamber using the dosage tube.

Filling the measurement chamber using the dosage tube.

The slider should be put into the dosage tube’s slot until its semicircular edge suits the external edge of the tube.

Next put the seeds into the dosage tube until it is entirely filled. The surface of the poured seeds and the upper edge of the dosage tube should be at the same level.

Not quite filling the dosage tube can cause a reading error. Overfilling the dosage tube will have a weaker influence on the reading.

ATTENTION!

You cannot press the seeds in the dosage tube.

count).

- f) After measurement you should empty the chamber and press „OK” button.
The command „**pour in seed**” will be displayed. It means, you can repeat the measurement for the same sample or check the humidity for another sample (of the same species).

- g) To choose another species (another name of the sample) you should press the button „**CAL/CANCEL**”.

- h) After finishing measurements the tester should be turned off by pressing „**ON/OFF**” button.

If the tester is not being used, it will turn off automatically after 3 min.

ATTENTION!

Please remember, to pour seeds into the measurement chamber only after the command „pour in seeds” is displayed.

DATA MODIFICATION

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The tester's user can modify the data (calibrate the device), which means that they can correct the coded humidity curves for each species, which have been prepared basing on the comparison with drier method.

To make the required corrections you should turn on the power supply with, **"ON/OFF"** button while the button, **"CAL/CANCEL"** is pressed. That starts a special mode of the device, which allows to introduce or delete the corrections in the device's memory – **"shortened modification"** will be displayed.

Using keys **▲** or **▼**, you can choose needed option: **"modification"** or **"erasing"**, then confirm using **"OK"** button.

1. MODIFICATION MODE:

It consists of modifying (correcting) the tester's readings by increasing or decreasing the device's readings by the same value in all the measuring range. „Modification“ is performed if the user states that the device has a tendency to increase

or decrease the readings in all the measurement range.

After choosing this function (**"OK"** button), the name of the last measured sample will be shown, which you can change using **▲** or **▼** buttons.

Having chosen the needed name you should press **"OK"** button again. The information: **„change: 0,0 %"** will appear. Now using the buttons **▲** or **▼**, you can introduce the values by which you want to modify the readings for the chosen species, for example +1,2%.

Having introduced the chosen value once again press **"OK"** button, and the information: **„change +1,2%?"** will be displayed.

- if you want to approve a change in the memory, press **"OK"**, and the inscription **"OK"** will appear, which means that the changes have been saved in the memory permanently,
- if you want to cancel changes, you press **"CAL/CANCEL"** and then the information **"cancel"** will be displayed.

You can leave the modification mode by turning off the power supply.

ATTENTION!

The name for which the modification has been made, is marked with **"*" sign.**

2. ERASING MODE:

This operation restores the factory settings for the chosen sample name (it removes all the corrections for one species).

To select ERASE DATA, hold down the **"CAL/cancel"** key and turn on the power with the **"ON/OFF"** button, then press the **▲** **"UP"** button and accept the ERASE option by pressing the **"OK"** button.

After you've accepted the password in the modification mode menu the name of the last tested sample will appear. That can be changed using **▲** or **▼**

After you've accepted the selected name the **"OK"** message will appear. At this point all adjustments will be removed. The **"*"** symbol will be also removed with the previously modified type of grain.

The **"OK"** message will appear and all adjustments will be removed. The **"*"** symbol will be also removed with the previously modified type of grain.

Pressing **"CAL/CANCEL"** will cause the canceling of this operation and the information **"CANCEL"** will be displayed. You can leave the modification mode by turning off the power supply.

BATTERY REPLACEMENT

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CHAPTER

The meter automatically informs about low battery. If the display shows „**low battery**“ the battery should be replaced with a new battery:

- remove battery cover on the bottom side of the instrument and remove old battery,
- insert the new battery **as shown on the bottom of the battery compartment: „+“ and „-“**, then cover the flap.

If the battery is weak (the „**low battery**“ message will show) it is impossible to perform any operations / measurements on the device.

Please use good quality alkaline batteries!

TECHNICAL DATA

power supply:	9 V battery, type 6F22
current intensity:	~ 12 mA
display:	LCD, alphanumeric 2 x 16 digits
range of temperature measurement:	0 °C – 70 °C
accuracy of temperature measurement:	±1 °C
accuracy of humidity measurement:	±1% in range about 10% ±1,5% in range about 20%
dimensions:	length 25 cm, width 16 cm, height 11,5 cm.
weight:	920 g
working temperature:	10 °C – 45 °C (use of the meter above that range may lead to permanent damage)