

Farmpro User Manual



Instruction manual

Bedienungsanleitung

Notice d'utilisation

Manuale di Istruzioni

Gebruiksaanwijzing

Bruksanvisning

Instrucciones de uso

Instrukcja obsługi



Supertech Agroline

Farmpro MANUAL

The Original Grain Moisture Analyser With BUILT-IN Grinder

User Information	3
General Safety Instruction	3
Highlights & Features	4
Introduction	4
Package Content	5
Part Locator	5
Keypad	5
Instructions	6
Prepare and Make a Measurement	6
Adjusting the Calibration of the Meter	8
Farmpro Settings and Menu´s	9
MEASURE	9
BATTERY	9
CLEAR AVERAGE	9
CALIBRATION	9
Some more valuable information about the moisture meter	9
Using the averaging facility	9
Battery	10
Storage and Advice for General Usage	10
Auto Turn OFF time - Setting	10
How to make your own grain calibration.	10
Quick Guide to Display Messages	11
Technical Specifications	11
Troubleshooting	11
EU WEEE Statement	12
EU Declaration of Conformity	12
Warranty	12

User Information

Warning/ Danger symbols used in this User Manual:



These notes identify hazards which have a high probability of resulting in death or serious physical injury if not avoided.



These notes identify hazards that can result in moderate or mild injuries if not avoided.



These notes identify hazards associated with the risk of material damage.



These notes identify information that are important for the usage and maintenance of the device.



These notes identify hazards associated with disposal of the product.

General Safety Instruction

Guidelines and General Information



The analyzer complies with EU Directives and standards, among other regulations, for electrical safety and electromagnetic compatibility. Inaccurate usage or handling may, however, result in damage to the product and small to medium injuries. Any improper use or operation of the analyzer that is not consistent with the instructions will result in forfeiture of all claims under the manufacturer's warranty.



The analyzer is powered by a 9-volt Alkaline battery. Extra precautions should be taken, when handling the battery. Removing a leaking battery should be done while wearing protective gloves, whereafter the contacts must be cleaned with a soft cloth.



Before using the device, please read and understand this user manual, including the safety instructions.



Always keep the equipment and analyzer freely accessible and stored in its ABS carry case. The instrument should not be exposed to large temperature fluctuations and should be kept free of moisture.

Highlights & Features

- Digital readout with accuracy to one decimal point
- Automatic temperature compensation
- Combined grinding and compression of sample
- Individual calibration for all grain types
- Can be updated with new moisture scales
- Automatic calculation of average value
- Built-in measuring cups
- User friendly experience
- Grinder made of hardened galvanized steel
- Casing made of shockproof ABS plastic
- Supplied in shockproof carrying case



Introduction

Thank you for choosing Supertech's Farmpro Grain Moisture Analyser. This moisture meter is a ground grain meter with built-in grinder which provides quick and simple moisture readings while the processes of harvesting and drying are taking place. It is an accurate instrument that provides consistent repeat readings when several samples are taken. The Farmpro is made to ensure long durability and has a bright display for easy outdoor reading.

Read this manual carefully to learn how to operate this device correctly.

Package Content

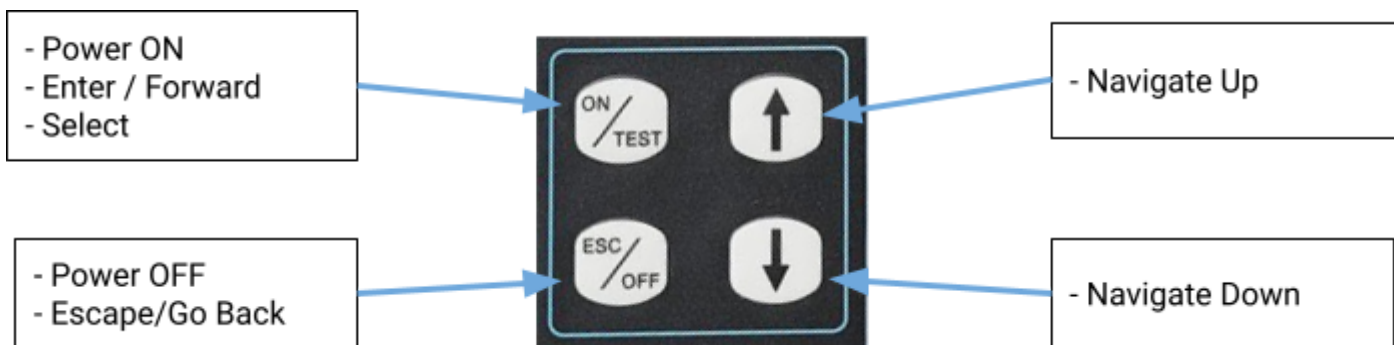
- Farmpro moisture analyser
- Grinder handle with 9 and 11ml measuring cups
- Battery
- Operator's manual
- Brush for cleaning grinder
- Shockproof carrying case

Part Locator

1. Grinder handle with 9-11ml measuring cups
2. Grinder housing/lower grinder cell
3. Display
4. Farmpro grip
5. Keypad



Keypad



Instructions

This section explains how to use the Farmpro

Prepare and Make a Measurement



Inspect the two parts of the grinder cell to make sure they are clean and empty.



If the temperature of the grain sample differs a great deal from that of the meter, e.g. when taking measurements directly from the dryer, it is recommended to preheat the meter as follows:

- a. *Fill the test cell with the desired crop, grind it and wait approx. 1-2 minutes.*
 - b. *Proceed with the normal testing procedure as detailed below..*
-

1 TURN ON DEVICE Press the Power button “ON/TEST”

2 SELECT ‘Measure’ and press the ON/TEST button

Select the crop to be tested by using the arrow keys ↑ or ↓.

To select a different crop press the ESC/OFF button to return to MEASURE and use arrow keys ↑ or ↓ to cycle through the options.

3 Fill the sample into the grinder

Using the built-in measuring cups (9ml and 11ml) in the upper part of the grinder to measure out the quantity required of the crop to be tested. The quantity is shown in the display alongside the crop name (9ml and 11ml).

4 Grind the sample and press the ‘ON-TEST’ button

Screw on the upper part of the grinder and rotate it clockwise until the two stop pins meet. It is important to rotate to this point to obtain the correct test result.



Important: Never screw together the upper and lower part of the grinder when the measuring chamber is empty as serious damage can be done to the fine grooves of the grinding discs.

Press ON/TEST immediately. A series of asterisks will appear across the screen, followed by the moisture reading.

The analyser will take ~10sec to measure the moisture content and calculate the temperature compensation and hereafter display the result.

A new reading can be made by emptying and cleaning the test cell and filling it with a new sample. Do not re-test the sample without first emptying and refilling.



1



2



3



4



Note: In order to ensure correct measurements, clean both grinder discs thoroughly with the enclosed cleaning brush after each measurement. Remnants of sticky or moist material can be removed by grinding a dry grain sample.

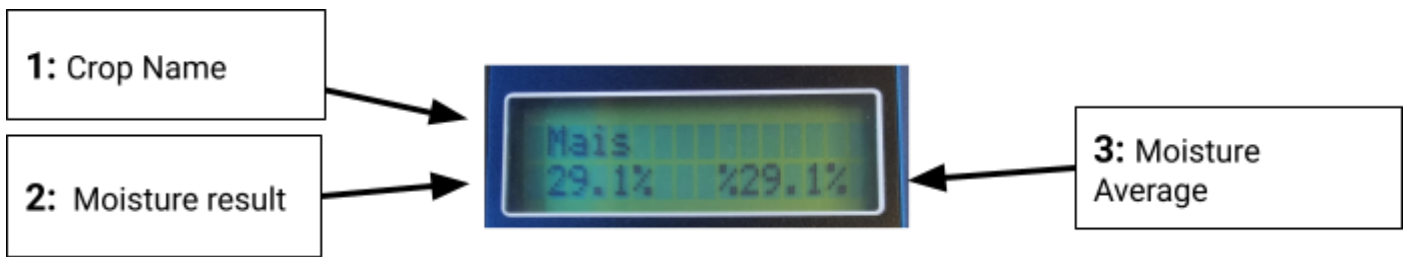


Note: When grinding crops with high water content there may be a risk of the two grinder discs touching one another so that the display reads Hi. If this happens, carry out a new measurement with an increased sample size. Try with approx. 2-3 ml more than the quantity specified in the display. In particular, when measuring maize with more than 20 % moisture (and some grass types), 18ml (2x9 ml) must be measured out for grinding, as stated in the display.



Note: If the temperature of the grain sample differs a great deal from that of the result in the unit, e.g. measurements directly from the dryer, it is recommended to preheat the tester as follows:

1. Fill the grinder with the desired crop, grind and wait 1-2 minutes before pressing the **'ON-TEST'** button
2. Read the results on the result screen



Adjusting the Calibration of the Meter

Farmpro is factory calibrated for every crop using the official methods of measuring moisture content as compiled by ISTA (International Seed Testing Association). The calibration scales are compiled using samples of crops grown in normal conditions. Differing growth factors between years and between varieties can have an effect on the electrical characteristics of the crop and it can therefore be necessary to recalibrate the meter. To avoid disputes, it is strongly recommended that Farmpro is checked against the meter being used by the buyer of the grain (using grain from the same sample in both cases), and adjusted as required.

Each crop calibration in the meter can, if necessary, be adjusted individually up or down by up to 3.9% in increments of 0.1%. This is achieved as follows:

1. Turn on the meter by pressing ON/TEST.
2. When MEASURE appears in the display use the arrow keys \uparrow or \downarrow until CALIBRATION is displayed.
3. Accept this choice by pressing ON/TEST.
4. Use the arrow keys \uparrow or \downarrow to select the crop that is in need of calibration adjustment.
5. Accept this choice by pressing ON/TEST. The numeric value +0.0 is shown in the display (factory calibration).
6. Use the arrow keys \uparrow or \downarrow until the desired calibration adjustment value is displayed. Adjustments can be made in the range from -3.9% to +3.9%.
7. Accept the selected calibration adjustment value by pressing ON/TEST.
8. An asterisk (*) will appear at the end of the name of the crop if adjustments have been made compared to the factory calibration.

Farmpro Settings and Menu's

The Farmpro has a number of settings that can be reached by doing the following:

1. TURN ON DEVICE
2. Use the arrow-keys to choose between the menu settings

The device have four menus:

MEASURE

The menu measure is used to choose the crop to be tested.

BATTERY

This menu will give you an overview of the battery level.

CLEAR AVERAGE

This menu is used to clear the average of the last five measurements done.

1. Turn on the meter by pressing ON/TEST.
2. When MEASURE appears in the display use the arrow keys \uparrow or \downarrow until CLEAR AVERAGE is displayed.
3. Accept this choice by pressing ON/TEST. OK will appear in the display followed by an automatic return to MEASURE.

CALIBRATION

The calibration menu is used to recalibrate the meter. Differing growth factors between years and between varieties can have an effect on the electrical characteristics of the crop and it can therefore be necessary to recalibrate the meter. See page 8.

Some more valuable information about the moisture meter

Using the averaging facility

1. Due to the changing nature of grain when being harvested or dried, it is recommended to take several readings. These will automatically be used to create an average reading.
2. It is recommended to take 3-5 measurements from the same batch of grain and use the average as the true moisture content of the grain.
3. Remember to empty, clean and refill the test cell between each reading.

Battery

The meter is supplied with a 9-volt alkaline battery. This should be installed in the compartment on the underside of the meter. When the battery is in need of replacement the message **Replace battery** will appear on the display.

Only replace it with a similar high quality 9-volt alkaline battery. Removing the battery has no effect on the information stored in the meter.

9-volt batteries should not be thrown away with trash. This may risk contact with other batteries or pieces of metal which could lead to danger.

In case of battery leaking please remove carefully by using gloves. After removal please clean the device carefully with a clean cloth.

Storage and Advice for General Usage

It is recommended that you store the meter at all times in the carrying case provided, so that the instrument is not exposed to large temperature fluctuations and that it is kept free of moisture. If the instrument is taken into a warmer environment from a cold storage location, it is recommended that you allow the unit to acclimatise so that condensation does not affect the results of the measurement. At the end of the season, wipe all surfaces with a well-wrung damp cloth and remove the battery from the meter. Clean all parts of the grinder mechanism and lubricate the spindle with a thin layer of non-corrosive oil.

Auto Turn OFF time - Setting

Our Farmpro is pre programmed to Turn-OFF after approximately 90 seconds of inactivity.

If the device turns off by itself while using it please turn on the meter by pressing ON/TEST.

How to make your own grain calibration.

If you need to make a calibration scale for a particular crop that is not included in the meter, this can be done as follows:

1. Turn on the meter by pressing ON/TEST.
2. When MEASURE appears press ON/TEST again.
3. Use the arrow keys \uparrow or \downarrow scroll through the crop options until Bit is displayed.
4. Fill the test cell with a sample of the desired crop for which you know the moisture content, grind the sample and perform the test as described earlier.
5. Note down the value which appears in the display, eg. 03.65, and the temperature, eg. 19C, together with the moisture content in the crop. Perform this process repeatedly using samples with different levels of known moisture content until the calibration scale meets the range and requirements needed. The more samples that are used the more accurate the calibration will be. Try always to use samples at the same temperature.
6. Plot the values on a graph, either manually or using Excel, with moisture content on the y-axis and Bit on the x-axis and draw a line or curve that best fits the points. The calibration is now completed



and moisture contents can now be read off the y-axis for any Bit value measured using subsequent samples of the same crop in the meter.

Quick Guide to Display Messages

Symbol:	Definition:
*	<i>Calibration has been adjusted from the factory setting for the crop being displayed.</i>
Temperature ++	<i>Grain temperature is above the upper operating limit (50°C).</i>
Temperature --	<i>Grain temperature is below the lower operating limit (0°C).</i>
Hi	<i>Grain moisture content is above the upper limit (varies with crop).</i>
Lo	<i>Grain moisture content is below the lower limit (varies with crop).</i>
Change battery	<i>Battery needs replacing.</i>

Technical Specifications

- **Measuring range** (Moisture): 5 to 50% Depending on crop type
- **Operating range** (Temperature): 0 to 50 °C
- **Resolution:** 0.1% moisture
- **Temperature compensation:** Automatic
- **Weight including case:** 1.9 kg
- **Dimension:** 21 x 7,5 x 7,5 cm
- **Battery:** 9 V Alkaline
- **Display:** 2 line LCD
- **Accuracy:** Better than +/- 0.25% in normal moisture range, by using average and calibration adjustments

Troubleshooting

- **The meter does not start at press ON/TEST button**
Change the battery. It is a good idea to always have a new battery in your carrying-case
- **The meter shows Lo<xx% in the display**
The moisture content of the sample in the measuring cell is below the measuring range
- **The meter shows Hi>xx% in the display**
The moisture content of the sample in the measuring cell is over the the measuring range

Or

The two grinding discs are touching one another and there must be carried out a new measurement with an increased sample. Try with approx. 2-3 ml more than the quantity specified in the display. In particular when measuring maize or grass seed 18ml= 2x9ml must be measured out for grinding as stated in the display.

➤ **The meter shows other values compared to official certified meters**

Calibrate the tester as explained in the section "Adjusting the calibration of the meter"

EU WEEE Statement

This product should not be discarded along with household waste but should instead be collected and treated separately as electronic equipment in compliance with governing local legislation. This must be considered in regards to human health and protection of the environment.

The battery must be removed and disposed of in compliance with governing local legislation. Failing to meet this requirement can result in heavy metals accumulating in the environment and potentially be damaging towards humans, animals and natural resources.



EU Declaration of Conformity

According to ISO/IEC 17050-1, the manufacturer
Supertech Agroline Aps.
Maltgørervej 7
5471 Sønderød, Denmark

declares Farmpro to be in conformity with the requirements of the, Electromagnetic Compatibility (EMC Directive - 2014/30/EU and RoHS Directive - 2011/65/EU
A signed Declaration Of Conformity document is available online at supertechagroline.com

Warranty

As the instrument is for guidance purposes only, the manufacturer accepts no liability for damages arising from any consequential losses in connection with its use, including incorrect display in connection with the settlement of grain. The guarantee covers defects in materials and manufacturing for 2 years. The manufacturer reserves the right to change product specification without notice. Full terms and conditions of sale can be supplied on request or viewed on our website.