Martin Lishman

BaleMaster

PROTIMETER

Professional Crop Moisture Measurement

Care and Maintenance

Daily Care

Keep the meter in its protective case. Clean and dry the probe after every reading. The Bale Probe point is extremely sharp and should be handled with care. The Point should be covered with the cap provided with the probe when not in use. When removing the probe from the bale, avoid twisting the handle.

Battery

The batteries will last for more than 20 hours of use. When battery power is low **[!]** displays. The meter will continue to read with normal accuracy and turns off when the battery is empty. To change the batteries, remove the battery lid on the back of the meter. Slide the lid downwards to open the battery compartment. Remove the batteries if the instrument is not used for long periods.

Calibration Check

The accuracy specifications of the Bale Master are generally valid for one year after the date of Calibration. The product has an internal periodic calibration check to ensure the accuracy of the device and to warn the customer whenever it goes out of calibration

Regular Servicing and Checks

According to most crop quality assurance schemes, your bale moisture meter and probe should be checked annually against reference values. The Martin Lishman service centre is fully equipped to service your meter throughout its working life. We also conduct testing clinics where you can check your meter and obtain a test certificate to satisfy your crop assurance scheme. See our website for the latest clinic details and to download a service return form.

Only operate the measuring instrument properly, for its intended propose and within the parameters specified in this technical data. Readings from the moisture meters are not definitive, but are used to help a professional make informed judgement to the material's moisture condition. Conductive material such a salts, carbon and metal can give false positive readings.

Caution note for the Bale Probe

Calibration of unit

Quick Start Up Guide

QuickStart Guide:

Before getting started, ensure the batteries are installed in the battery compartment and the pull tab is removed.

Turning the device ON and OFF:-

Press and hold the power key to turn device ON/OFF

Measurement Modes:-

Turning On the BaleMaster takes you straight to the Measurement

The Protimeter Colour Arc gives a quick indication of the moisture levels in the material. The DRY, AT RISK, WET text indications helps identify the risk level.

Reference Measurement:-

It is easy to baseline a reference for measurement to make a comparative study. Place the unit and measure the moisture on the reference material, then press and hold ► key.
The screen shows the measured valve and the difference

Device Configuration:-

Press Key, to enter in to device configuration. Backlight, Buzzer, Risk Alert etc., can be set to user preference.

Bluetooth Configuration

Press and hold Key to turn On/OFF Bluetooth

Calibration Check:-

Press and hold and ► keys simultaneously while in measurement screen, to check if the device is within specification.

Note:-

- Prior to taking readings, it is advised to check the calibration of the meter using the internal calibration check feature
- If the unit s being stored for long periods without being used, remove the batteries.
- Do not use rechargeable batteries. Always replace with batteries of high capacity (>2700mAh) to maximise battery life

Product Overview

Overview

The BaleMaster is a conductivity moisture meter designed for measuring moisture level of baled products such as straw and hay. The instrument is calibrated for wheat straw and may be used to take relative measurements in other baled products.

- Before using the stainless steel probe, be sure it is thoroughly clean and dry. **The probe must not be wet when measuring moisture**
- Connect the Bale Probe to the instrument and switch On by pressing and holding button
- Push the Bale Probe into the bale to the required depth. Note the reading on the display.

NOTE:-

When assessing the moisture content (MC) of the whole bales, it is recommended that the average valve is obtained from numerous readings taken from different sides and at different depths.

- To obtain the correct average valve, use the following moisture measurement ranges as a guideline

⇒ < Less than 15% MC: Bales are in safe condition for storage

⇒ > Greater than 15% MC: Bales are not in a safe condition for storage and additional drying is recommended

- After use, switch the instrument OFF by pressing and holding the button, or leave the instrument to switch OFF automatically.
- Optional stainless steel fast response bale temperature probes are available - 1.5m long (GRN 6153) or 600mm long (GRN 6154).
- All of the moisture and temperature probes take their readings form the tip of the probe.

Product Overview

Calibration

Calibration can be checked using the Cal function on the device Press and hold ⏻II and ▶ keys together while in measurement mode to do a calibration Check. The device will let the user know if the unit passes or fails the calibration check.

Note:-
Ensure no auxiliary probes are connected to the device before a calibration check is run. Connecting any probe to the right side jack may cause interference in the calibration check.

Reference Mode

Measure the material until the meter reading is stable.

Then Press ▶ for 2 seconds. This will store the reading until the mode changes

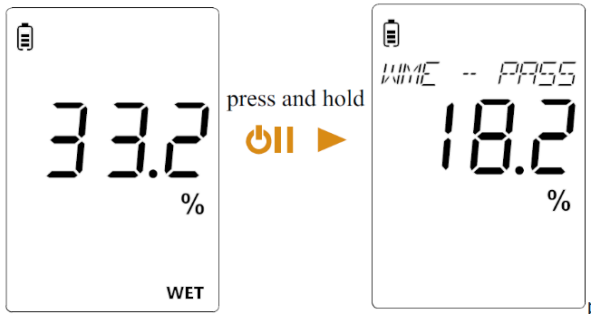
or the meters turn off. Now, all readings thereafter will be displayed as normal, and below you will see a second reading that shows if the material is measured above or below the original reading. Reference mode can be useful when trying to establish what materials are above or below a point of reference or dry standard.

Calibration Check

When the device is in Measurement mode, press ⏻II and hold and ▶ Keys

Device will check the calibration internally and display the reading along with the Pass/Fail result.

Press the ▶ key to exit the calibration check



Operating BaleMaster

Taking a reading

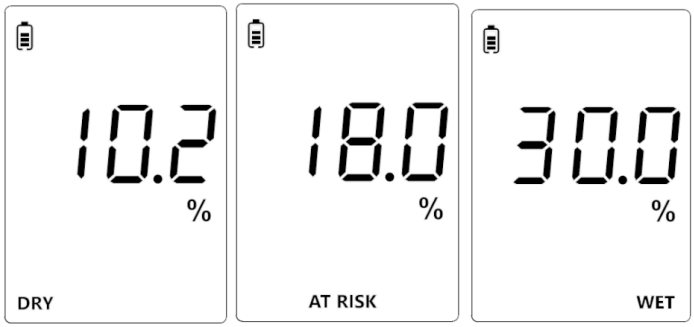
Before every reading
Ensure the probe is clean and dry

Press & hold the ON/OFF button until the unit turn on. The unit turns on, with the LCD displaying all the segments and sweeping LED bar graph. The display will look like this

Measurements

The numeric measurement and colour of the LED will be shown as well as DRY, (green) or AT RISK (yellow) or WET (red) based on the measurement shown.

8.5-15 DRY (Green), 15.1-19.5 AT RISK (Yellow), 19.6-36.8 WET (Red)



Operating BaleMaster

Reference Mode of Measurement

Take the first measurement, which needs to be taken as a reference. This is useful when establishing a dry standard in the building and comparing other readings against.

Whilst the first reading is displayed on the screen, press and hold the button for 2 seconds to enter the Reference Mode.

To return to the normal measurement mode, press again.

Settings

Press the button

to enter into settings. Press again to return to Measurement. Device enters into Language settings as a first set up screen

Setting up Language

The first screen to appear in settings is language. User will see the last set language on the screen.

Press to browse through the list of languages

available. When the desired language is seen on the display choose it by pressing key. This will set the language.

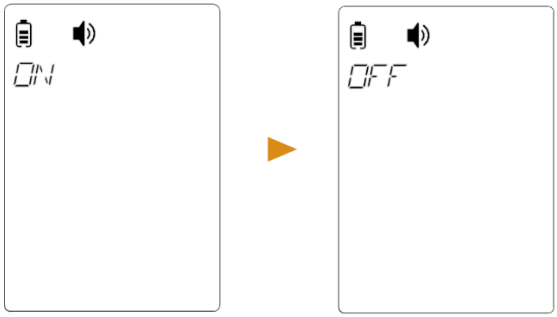
Operating BaleMaster

Buzzer ON/OFF Settings:-

By pressing ⏻II key

from the language setting the screen will display the Buzzer setting.

You can select to have the Buzzer On or OFF using the ▶ key.



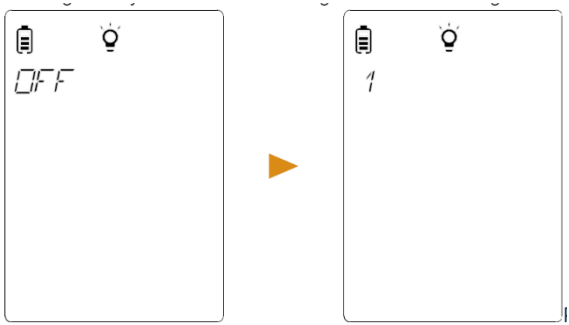
Brightness Setting (Backlight) :-

Pressing the ⏻II key from the Buzzer settings will move onto the display for Brightness

Press ▶ key to select the desired brightness for the back light.

Press ⏻II key to set the brightness.

Note:- Battery life is effected by brightness setting. To maximise battery life keep on the minimum brightness setting.



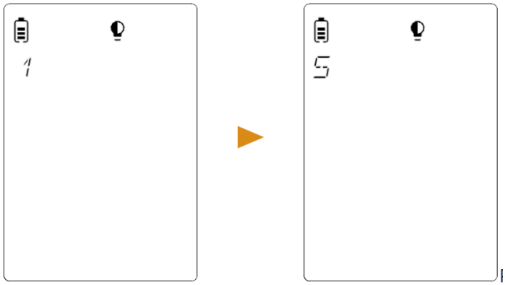
Operating BaleMaster

Contrast Settings (LCD SEGENTS) :-

Pressing the ⏻II key from the Brightness will move the display onto the Contrast setting page.

Press ▶ key and select from 1-5 to change the contrast and press ⏻II

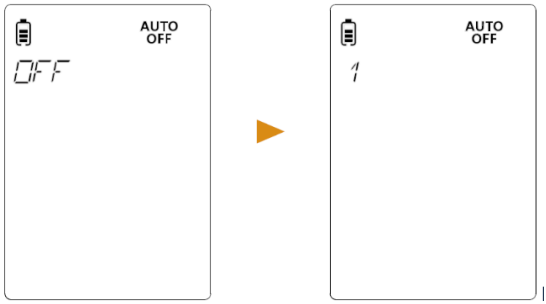
To confirm the contrast.



Auto Off Time Settings:-

When Auto Off is set, the unit will shut down automatically at a specified time between 1—10 minutes. If there is no key press detected within the set time. For example, if the Auto Off Time is set a 1, then the unit will shut down after a minute when no key is pressed.

The user must manually turn off by pressing and holding the ⏻ Button for 5 seconds. Turn off time can be changed from Off to 10 minutes by pressing ▶ key. Pressing ⏻II key move to next screen



Operating BaleMaster

Dry, At Risk and WET Settings:-

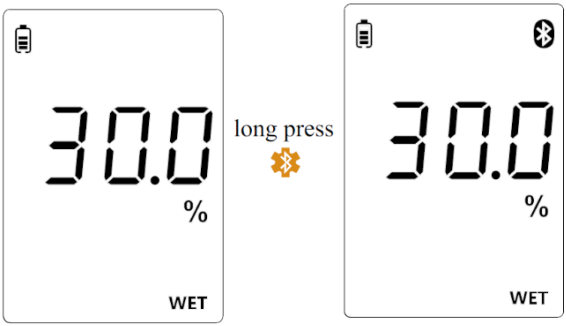
Pressing key from auto off setting will move the display to DRY, AT RISK and WET setting screen. This screen sets whether the indication on the display needs to be switched ON or OFF. When it ON, the moisture condition will be displayed on the screen. When it is OFF, no indication is displayed on the screen.

Press key to state from OFF to ON and vice versa.

Turning On and OFF Bluetooth:-

To turn Bluetooth ON or OFF at any point of time from the measurement screen

Press and hold key

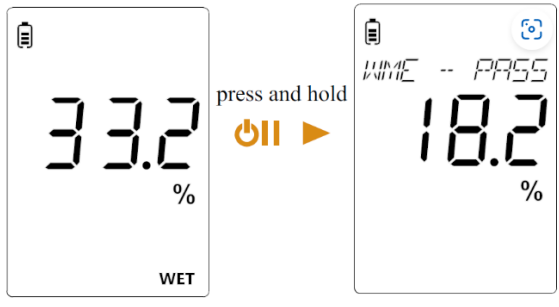


Operating BaleMaster

Calibration Check:-

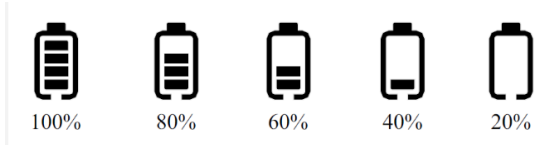
When the device is in measurement mode, press and hold and keys

Device will check the calibration internally and display the reading along with the pass or fail result. Image on display below.



Battery Status:-

Battery status is indicated in 5 levels. Symbols can be seen at the top corner of the screen. Whenever the battery is low the symbol will blink (without any blocks inside) When the batteries are low it is better to replace them. The unit will continue to perform in battery condition within specified accuracy and will turn off when the battery reaches its limit.



Specification

Specification of BaleMaster	
Display (LCD)	35mm x 50mm With Backlight (10x Brightness Levels)
Battery	3V (2x AA) 2700mAh
Temperature	Operating: 0°C to 50°C Storage: -40°C to 85°C
Operating Humidity	0 to 90% RH
Operating Altitude	2000 M
Safety	Pollution Degree 4
Size	18 cm x 6.5 cm x 5 cm
Gross Weight	~228g (without Battery)
Measurement Specification	The BaleMaster instrument is calibrated for Wheat Straw Measurement
Regulatory Compliance	CE, RoHS, ETL, UKCA, FCC
Model	GNR6170

Service and Maintenance

Please contact Martin Lishman Ltd for any Servicing or Maintenance.

Please call our service department on 01788 426600 / Option 2

Alternatively visit our website and complete a returns form.

martinlishman.com

For best results for the BaleMaster are achieved by cleaning and servicing the instrument regularly and by using in stable, constant conditions within large temperature fluctuations. It is also important to follow the practical advice given in this booklet and online by using the QR codes.

At Martin Lishman we carry out a standard service, a calibration service and a full re-build. We will provide a quote before performing major repairs tasks and don't usually recommend work on instruments beyond economic repair.