PROTIMETER TIMBERMASTER
Moisture meter – instructions for use

The Protimeter Timbermaster is a resistance type moisture meter with multiple scales designed for use in a wide range of wood species. Moisture measurements can be taken using the integral pin electrodes or using the meter in combination with a separate heavy duty moisture probe (illustrated left) or a hammer electrode.

When used with the optional temperature probe (illustrated centre), the moisture measurements are automatically corrected with respect to temperature. This last feature is particularly relevant for users measuring wood that it significantly above or below 20ºC.

Using the Protimeter Timbermaster without the Temperature Probe

The Timbermaster is switched on by pressing O (top button) momentarily and switched off by pressing and holding O for 2 seconds or more. The instrument will switch off automatically after 5 minutes unless the default setting is changed as explained in **Setup Mode** below. The Timbermaster is calibrated for wood at 20ºC and in general, timber that is hotter than 20ºC will give higher readings and timber colder than 20ºC will give lower readings than true. An approximate correction of 0.5% moisture content per 5ºC may be subtracted from timber that is above 20ºC. For timber that is below 20ºC, a correction of 0.5% moisture content per 5ºC may be added to the indicated value.

Readings with integral electrode pins

Remove cap to expose the needle electrodes and switch on by pressing O. Select the appropriate wood calibration scale A, B, C, E, F, G, H or J by referring to the (supplied) Protimeter wood calibration tables and pressing bottom button ►. Push the pins into the surface of the wood and observe the reading.

Reading with Moisture Probe or Hammer Electrode

Connect the heavy duty moisture probe (supplied) or Hammer Electrode (optional extra) to the 3.5mm bottom socket on the right hand side of the Timbermaster and switch on by pressing O. Select the appropriate wood calibration scale A, B, C, E, F, G, H or J by pressing ►. Press the moisture probe pins (or drive the hammer electrode pins) into the wood and observe the reading. (The hammer electrode pins should be driven into the wood to the depth required for the task in hand.)

Using the Protimeter Timbermaster with the Temperature Probe

Automatically Temperature Corrected (ATC) Readings - if the timber being measured is significantly above or below 20°c such as after being removed from a hot drying kiln then the Timbermaster should be used in conjunction with the optional Protimeter Temperature Probe which can be used at the same time as another pin probe. When this probe is connected the Timbermaster automatically internally corrects the measured moisture value with respect to temperature. Visible readings do not then need correction. Switch the Timbermaster on and select the appropriate wood calibration scale as detailed above. Using either a Hammer Electrode, or a hammer and nail of nominal 2mm diameter, make a single hole in the wood to be measured. Push the Temperature Probe gently into the hole until the tip is at the required depth. Connect the Temperature Probe to the Timbermaster via the smaller 2.5mm socket. To obtain the automatically temperature corrected (ATC) moisture value take moisture readings as detailed above while the Temperature Probe is positioned in the wood and connected to the Timbermaster. If the temperature of the wood is equal to the ambient air temperature, ATC moisture values can be obtained by holding the connected temperature probe in the air. Switch between temperature and moisture displays by pressing ►.

Setup Mode

Setup mode is entered by pressing O and ► simultaneously. This action displays the following information about the instrument in the following sequence.

1. Firmware version number, for example 1.08.
2. Product part number, for example BLD5601.
3. Firmware date in yy-mm-dd format, for example 00-05-28.

The user then has the option of changing the default setting for the temperature display (°C or °F) and the automatic switch OFF time (disable automatic switch OFF or set from 1 to 9 minutes) by changing the codes as detailed in the table below. The first code digit is changed by pressing O and the second digit by pressing ►. Confirm the new settings by pressing O.

Code	Description
0=0	No action
0=1	Resets all user settings to the defaults (°C, 5 minutes)
1=0	Selects °C for temperature display
1=1	Selects °F for temperature display
2=0	Disables automatic switch OFF
2=1	Set automatic switch OFF to 1 min
2=2	Set automatic switch OFF to 2 min
2=	….. and so on to …
2=9	Set automatic switch OFF to 9 min

Battery

Depending on model the Protimeter is powered either by one 9V battery or by two AA 1.5V batteries. Replace when the battery symbol flashes by removing the cover on the back of the instrument. Ensure correct polarity when inserting.

Care and Maintenance

Store the instrument in its case together with its accessories in a dry environment out of direct sunlight. Remove the battery if the instrument is not in regular use or when the low battery power symbol appears on the display. Check the condition of accessories used with the Timbermaster on a regular basis and replace them, if they become worn or damaged. Spare 25mm electrode pins are supplied which fit both integral pin electrodes and heavy duty probe, to replace, remove the securing collets using a 6.5mm spanner. As a rough (non traceable) check at a single moisture point the *Protimeter Check* device (supplied) may be used by touching the pin probes of the meter against the exposed wires while in scale A. Readings should be 18 +/-1% emc.

Comprehensive calibration check

For increased certainty across the range of readings the calibration of the Timbermaster may be checked by

placing the electrode needles into the sockets of the Verus Checkbox (traceable if in recent calibration) accessory). The optional VERUS Checkbox Model II illustrated top, checks a meter at 3 moisture scale points. When checking the calibration, the Timbermaster A-scale (European redwood) should be selected and the temperature probe must be disconnected. Correctly set a Timbermaster will register within 0.3% emc of the marked Verus Checkbox facia value.

The VERUS Checkbox Model IIIu fits all Protimeters old and new (shown lower photo) it calibrates 3 species group scales (A, B and C) and 8 wood species marked directly on the facia, checking accuracy at 9, 14, 17.3, 22 & 27% moisture content.

For ISO 9000 accredited companies, or companies in EPAL, Kitemark or Trussed Rafter Quality schemes, a VERUS Checkbox kept in annual external calibration is the most practical way of achieving traceability and accuracy.

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